

From degrowth theory to concrete actions: an exploratory study of the role of bottom-up and top-down initiatives in deep sustainability transitions

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DECLARAÇÃO

DECLARAÇÃO

Declaro que esta tese é o resultado da minha investigação pessoal e independente. O seu conteúdo é original e todas as fontes consultadas estão devidamente mencionadas no texto, nas notas e na bibliografia.

A candidata,

Inês Cosme

(Inês Cosme)

Lisboa, 20 de fevereiro de 2019

Declaro que esta tese se encontra em condições de ser apreciada pelo júri a designar.

O orientador,

R. F. S.

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Lisboa, 20 de fevereiro de 2019

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**From degrowth theory to concrete actions: an
exploratory study of the role of bottom-up and
top-down initiatives in deep sustainability
transitions**

Paula Inês Cosme Teixeira

ABSTRACT

Debates around ecological and social limits to economic growth and new ways to deal with resource scarcity without compromising human wellbeing have re-emerged in the last few years, especially with the increasing calls for a degrowth approach. This thesis has the main theme of exploring degrowth theory and practice to tackle the multiple social, economic and environmental crisis modern societies are facing. The main motivation for this research was to contribute for translating degrowth theory into pathways for concrete actions. We started by exploring the roots, principles and meanings of degrowth in academic literature. This led into an exploration about how to articulate bottom-up and top-down initiatives into a coherent framework for transition. Then, a group of degrowth scholars were interviewed, to discuss what might be the role of the state and the role of civil society in a degrowth transition, how to articulate values and structure different policy-making processes for being more inclusive and collaborative, and to a certain point how this transformation process can make democracies stronger. The following step was to explore some of the existent theories about sustainability transitions, to better explain a degrowth transition path in theory and to prepare the planning of strategic actions. From these theories, the multi-level perspective was chosen as a conceptual basis. As degrowth requires deep changes in the fundamental structures of current society, this theory was adapted to this particular vision. The next step was to find a method for translating the contribution of the niche innovations (bottom-up initiatives) and the regime reforms (top-down initiatives) to the regime shift in a degrowth direction. At this stage, the degrowth assessment tools were developed, based on the degrowth goals and proposals retrieved from the literature review. To test the developed framework, the assessment tools were applied to the Portuguese context, encompassing two case studies: Sustainability initiatives voluntarily created by civil society and the Green Tax Reform process. The main findings of this work were that: (i) degrowth is not a homogenous vision for a sustainable the future, but a recognition of the plurality of values and legitimate viewpoints that share the overall or parts of the degrowth vision and goals; (ii) degrowth focus is on reducing the scale of human activities and increasing social justice, being efficiency treated marginally; (iii)

the analysis to a group of Portuguese bottom-up initiatives showed that they are contributing to degrowth goals and are experimenting alternative ways to produce goods and services and to exchange them, even if they do not refer to themselves as degrowth initiatives; (iv) the analysis of the Portuguese green tax reform process showed that there is potential to provoke small changes in parts of the system that can induce behaviour change towards degrowth goals. The main contributions of this work were done at theoretical level, by connecting degrowth vision with democracy and transition studies literature; and at empirical level, with the development of the degrowth assessment tools, which can be used by both practitioners and policy-makers to analyse their contribution to a degrowth transition.

Keywords: degrowth; sustainability transitions; multi-level perspective; assessment tool; public policy; top-down initiatives; bottom-up initiatives; sustainability initiatives; green tax reform.

RESUMO

Debates sobre os limites ecológicos e sociais para o crescimento económico e novas formas de lidar com a escassez de recursos sem comprometer o bem-estar humano ressurgiram nos últimos anos, especialmente com a crescente exploração da abordagem do decrescimento. Esta dissertação tem como tema principal a exploração da teoria e prática do decrescimento para enfrentar as múltiplas crises sociais, económicas e ambientais que as sociedades modernas enfrentam. A principal motivação para esta investigação foi contribuir para traduzir a teoria do decrescimento em caminhos para ações concretas. Começou-se por explorar as raízes, princípios e significados do decrescimento na literatura académica. Isto levou a uma exploração sobre como articular iniciativas da sociedade civil e iniciativas dos decisores numa estrutura de transição coerente. Seguidamente, foi entrevistado um grupo de investigadores da área do decrescimento para discutir qual poderia ser o papel do estado e o papel da sociedade civil numa transição para o decrescimento, como articular valores e estruturar diferentes processos de formulação de políticas para o processo ser mais inclusivo e colaborativo, e até certo ponto, como esse processo de transformação pode tornar as democracias mais fortes. O passo seguinte foi explorar algumas das teorias existentes sobre as transições de sustentabilidade, para explicar melhor um caminho de transição para o decrescimento na teoria e preparar o planeamento de ações estratégicas. A partir dessas teorias, a *multi-level perspective* foi escolhida como base conceptual. Como o decrescimento exige mudanças profundas nas estruturas fundamentais da sociedade atual, essa teoria foi adaptada a esta visão particular. O próximo passo foi encontrar um método para traduzir a contribuição das inovações de nicho (iniciativas da sociedade civil) e as reformas no regime (iniciativas dos decisores) para a mudança de regime numa direção de decrescimento. Nesta fase, foram desenvolvidas as ferramentas de avaliação para o decrescimento, com base nos objetivos e propostas de decrescimento identificados na revisão da literatura. Para testar o enquadramento desenvolvido, os instrumentos de avaliação foram aplicados ao contexto português, englobando dois estudos de caso: Iniciativas de sustentabilidade voluntariamente criadas pela sociedade civil e o processo da Reforma da Fiscalidade

Verde. As principais conclusões deste trabalho foram: (i) o decrescimento não é uma visão homogénea para um futuro sustentável, mas um reconhecimento da pluralidade de valores e pontos de vista legítimos que compartilham a visão geral ou partes da visão e dos objetivos do decrescimento; (ii) o foco do decrescimento está na redução da escala das atividades humanas e no aumento da justiça social, sendo a eficiência tratada de forma marginal; (iii) a análise a um grupo de iniciativas da sociedade civil portuguesa mostrou que estas estão a contribuir para os objetivos de decrescimento e estão a experimentar formas alternativas de produzir bens e serviços e a trocá-los, mesmo que não se refiram a si próprias como iniciativas de decrescimento; (iv) a análise do processo de Reforma da Fiscalidade Verde em Portugal mostrou que há potencial para provocar pequenas mudanças em partes do sistema que podem induzir mudanças de comportamento em direção aos objetivos do decrescimento. As principais contribuições deste trabalho foram feitas a nível teórico, através da interligação da visão do decrescimento com a literatura sobre democracia e estudos sobre transições; e a nível empírico, com o desenvolvimento das ferramentas de avaliação para o decrescimento, que podem ser usadas tanto por praticantes como por governantes para analisar a sua contribuição para uma transição para o decrescimento.

Palavras-chave: decrescimento; transições para a sustentabilidade; *multi-level perspective*; políticas públicas; iniciativas dos decisores; iniciativas da sociedade civil; iniciativas de sustentabilidade; reforma da fiscalidade verde.

LIST OF ABBREVIATIONS AND ACRONYMS

DGTools – Degrowth Assessment Tools

CSA – Community-supported Agriculture

GTR – Green Tax Reform

NGO – Non-governmental Organization

NUTS – Nomenclature of Territorial Units for Statistical purposes

SS – Strong Sustainability

WS – Weak Sustainability

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“Vision is the most vital step in the policy process. If we don’t know where we want to go, it makes little difference that we make great progress. Yet vision is not only missing almost entirely from policy discussions; it is missing from our whole culture. We talk about our fears, frustrations, and doubts endlessly, but we talk only rarely and with embarrassment about our dreams. Environmentalists have been especially ineffective in creating any shared vision of the world they are working toward - a sustainable world in which people live within nature in a way that meets human needs while not degrading natural systems. Hardly anyone can imagine that world, especially not as a world they’d actively like to live in. The process of building a responsible vision of a sustainable world is not a rational one. It comes from values, not logic.”

Donella Meadows (1994)

1. INTRODUCTION

1.1. RELEVANCE AND CONTEXT OF THE RESEARCH TOPIC

Several studies have discussed the idea that human activity will eventually confront limits associated with the availability of natural resources (e.g. Jevons, 1865; Malthus, 1798); however, it was only in 1972 that this debate turned global, with the publication of *The Limits to Growth* (Meadows et al., 1972). The authors of this report warned that there are limits, not only on the extraction of natural resources, but also on the capacity of ecosystems to absorb pollution from the processes of land and material transformation.

More recent research suggests that many physical limits will eventually arise if people continue to pursue the same development path - from population, to arable land, extraction of some metals and minerals, fresh water available per capita, and climate stability, to name a few (Heinberg, 2007). The work of Rockström et al. (2009) discusses that the period of stability that Earth's environment experienced in the last millennia is endangered by human activities, and defined a safe operating space for humanity for which some boundaries should not be crossed. Four of these boundaries (related to climate change, loss of biosphere integrity, land-system change, and altered biogeochemical cycles) have already been transgressed (Steffen et al., 2015). Humans have become a global geophysical force, leading humanity into the Anthropocene, an age of uncertain global changes caused by anthropogenic activities (Steffen et al., 2015).

In parallel to the ecological debate on limits to growth, there has also been a debate about social limits to growth. While economic growth after the World War II was a key factor to reduce inequalities, this continuous path is now leading to an increase in inequality, as half of the wealth in the world is estimated to belong to a scarce 1% of the population (Oxfam, 2014; Piketty, 2014). Consequently, more inequality in societies tends to increase the importance of social status, leading to a decrease in social cohesion and sense of community (Wilkinson and Pickett, 2010). In addition to these consequences of unbounded economic growth, studies have shown that happiness, arguably the ultimate goal of wealth accumulation, has not been increasing in wealthy

nations in recent decades, despite very significant economic growth (see Jackson, 2009; Layard, 2006).

Globalization is a key factor that influences sustainability. Global trends of industrialization and economic expansion are linked with higher rates of natural resources exploitation. Globalization is exacerbating environmental damage, due to the growth of capital mobility, hyperliberalization of trade and transnationalization of production (Conca, 2005). In spite of the effort in developed countries to decouple pollution from economic growth, with the investment in more efficient production processes, that is still not happening (Jackson, 2017). Globalization creates new business opportunities, which many times are translated in economic investments in developing countries. This may lead to the degradation of environmental conditions in those countries, plus the investment in industries that do not ensure workers human rights. These conditions are often exacerbated since these countries do not have legal structures of social and environmental protection (Zarsky, 2012).

Given the failure of strategies to decouple economic activity from environmental impacts (Wiedmann et al., 2013), and the broken promise of increasing wellbeing with economic growth, sustainable *degrowth* is increasingly being viewed as a solution to achieve sustainability at all its levels (D'Alisa et al., 2015a; Hueting, 2010; Martínez-Alier et al., 2010; Schneider et al., 2010).

The degrowth perspective is focused on enhancing human well-being, and reducing the importance of economic growth in attaining this goal (Bilancini and D'Alessandro, 2012). Degrowth can be considered a “provocative slogan” (Latouche, 2010); but it can also be interpreted as a more defined concept that already has many policy concerns behind it, such as work-sharing or new paradigms of local living (Kallis et al., 2012).

1.2. OVERVIEW OF THE RESEARCH DEVELOPED

This thesis has the main theme of exploring degrowth theory and practice to tackle the multiple social, economic and environmental crisis modern societies are facing. Degrowth is considered in this work a vision for sustainability transitions. As a vision, degrowth was first contextualized inside sustainability theories of transformation

of the society as the most radical no-growth perspective. After this, the research on the topic started by exploring the roots, principles and meanings of degrowth in academic literature. In this phase, the great goals and objectives of degrowth were identified, as well as the proposals for action (measures and policy instruments) mentioned in the academic literature reviewed. Many interesting findings arose from the analysis of the degrowth proposals. On the one hand, the bottom-up initiatives have a great importance on the degrowth discourse as agents of transformation, but on the other hand the analysis showed that top-down measures were the most cited by the authors. This led the research into an exploration about how to articulate bottom-up and top-down sustainability initiatives into a coherent framework for transition.

As the literature review about degrowth let many loose ends for further exploration, and in the attempt to narrow down the work, the first step was to contact and interview a group of senior degrowth scholars and discuss some hypothesis for further work with them. These interviews allowed to explore what might be the role of the state and the role of civil society in this transition, how to articulate values and structure different policy-making processes for being more inclusive and collaborative, and to a certain point how this transformation process can make democracies stronger.

As the motivation for this research was from the beginning to contribute for translating degrowth theory into practice, the following step was to explore some of the existent theories about sustainability transitions - how do societal transformations occur? This was a necessary step to bring more theoretical robustness to the articulation between the role of bottom-up and top-down initiatives, since this was not very explored in the degrowth literature at this time. From these theories, the one that made more sense to explore in-depth was the multi-level perspective, which provides arguments about how a dominant regime shifts in a more sustainable direction by being continuously influenced by exogenous (landscape) factors, reforms and niche innovations. As degrowth requires deep changes in the fundamental structures of current society, this theory was adapted to this particular vision.

The next step was to find a method for assessing the contribution of the niche innovations (bottom-up initiatives) and the regime reforms (top-down initiatives) to the regime shift in a degrowth direction. This had the objective to offer an assessment tool

that would be useful to test the articulation of these strategies at different levels and to understand their real potential of transformation. At this stage, the degrowth assessment tools (DGTools) were developed, based on degrowth goals and proposals retrieved from the literature review.

To test the framework, the assessment tools were applied to the Portuguese context, encompassing concrete bottom-up and top-down sustainability initiatives. Two case-studies were developed, one focused on sustainability initiatives voluntarily created by civil society, and another focused on the selected policy instrument, the Green Tax Reform process. These two case-studies allowed to close this research circle, since they were crucial to understand the limitations of the framework and propose some improvements, as well as to give a practical example of the usefulness of the developed tools.

1.3. RESEARCH QUESTIONS AND SPECIFIC OBJECTIVES

Based on the research gaps identified, four main research questions (RQ) and some sub-questions were identified. To operationalize the research, these questions are supported with specific objectives (SO).

RQ #1: How can degrowth be conceptualized by the proposals for action found in the academic literature?

RQ #1.1: What does the sustainable degrowth perspective mean in a policy-making context?

RQ #1.2: How do degrowth goals align with ecological economics policy objectives?

RQ #1.3: What are the main types of approaches embedded in degrowth proposals?

SO #1: To explore academic degrowth literature with a focus on academic proposals for action, being them policy proposals, instruments or measures.

SO #2: To provide an inductive interpretation of degrowth theory, based on the academic proposals for action found.

RQ #2: How does the democratization of policy-making processes can influence a degrowth transition?

SO #3: To discuss interpretations from the degrowth literature reviewed.

SO #4: To discuss different hypothesis for deepening the research on degrowth transitions.

SO #5: To identify and explore research gaps in degrowth academic field.

RQ #3: How to assess the contributions of bottom-up and top-down sustainability initiatives to a degrowth transition?

SO #6: To develop an analytic framework to perform a qualitative assessment of the contribution of bottom-up and top-down sustainability initiatives to a degrowth transition at multiple levels.

SO #7: To contribute for the advancement in the knowledge about how to put degrowth perspective in practice.

RQ #4: How to rethink public policies developed in a (green) growth-based regime to incentivize and support a degrowth sustainability transition?

RQ #4.1: Recognizing the role of the state, how can top-down initiatives contribute to advance a degrowth transition?

RQ #4.2: Recognizing the role of civil society, how can bottom-up initiatives contribute to advance a degrowth transition?

SO #8: To test and refine the developed analytic framework.

SO #9: To provide examples of the operationalization of the framework.

SO #10: To provide policy recommendations that facilitate the steering of a degrowth transition in a dominant capitalist-growth regime.

1.4. RESEARCH DESIGN AND STRUCTURE OF THE THESIS

This research was carried by gathering knowledge of diverse research fields. The literature being used is based on three reference fields, for potentiating the transdisciplinary work, which are: (a) Ecological Economics; (b) Sustainability transitions; and (c) Democracy. The goal of bridging knowledge from these three fields is to enrich the academic debate about the construction and different meanings of the degrowth perspective as plural vision for sustainability transitions.

The research questions and specific objectives interconnectedness is shown in Figure 1. It is also present the methods used to pursue answers to the research questions and where they fit considering the structure of the thesis.

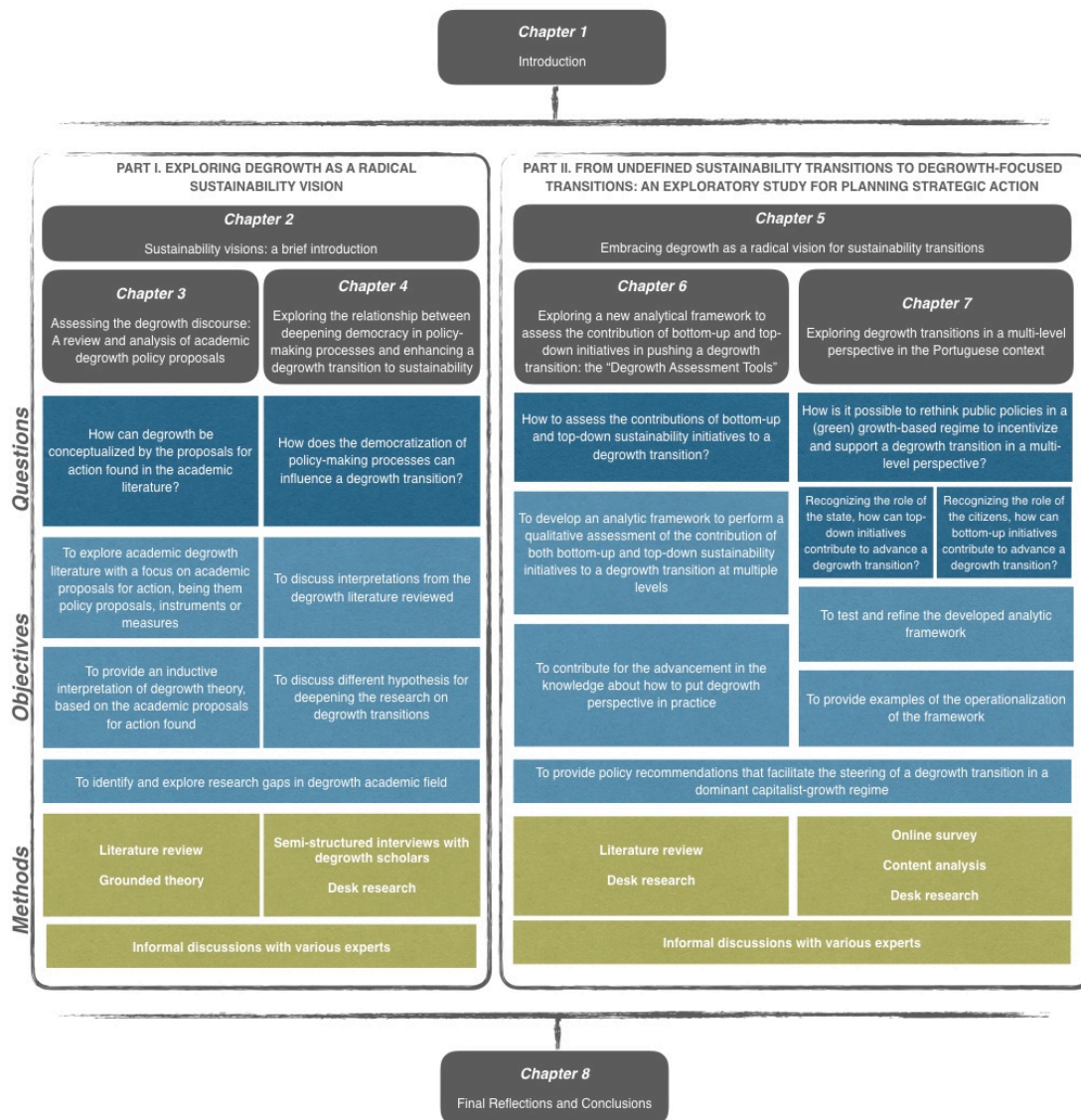


Figure 1 Structure of the thesis

1.5. DETAILS ON THE CHAPTERS

Chapter 1 introduces the thesis, by addressing the relevance and context of the research, presenting the research questions and objectives, and also the structure of the thesis.

Part I is focused on exploring degrowth as a radical sustainability vision, and it is divided in three chapters. **Chapter 2** gives an overview of different visions of sustainability and frames degrowth within them, as a radical no-growth approach to sustainability. **Chapter 3** presents a systematic literature review of degrowth in the selected academic literature. This chapter attempts to present a clearer notion of what degrowth academic literature has been exploring, by identifying, organizing and analysing a set of proposals for action retrieved from a selection of articles. **Chapter 4** discusses the relationship between degrowth and democracy, focused on policy-making processes. This chapter presents the results of interviews performed to degrowth scholars about this topic.

Part II is focused on exploring how to put degrowth theory into practice and is divided in three chapters. **Chapter 5** explores the relationship between degrowth and transition theories, with a special focus on the Multi-level Perspective and the Deep Transitions Framework. **Chapter 6** presents an analytical framework that assesses how bottom-up and top-down sustainability initiatives contribute to a degrowth transition. **Chapter 7** aims to test the analytical framework developed in Chapter 6, by applying it to the Portuguese context. The chapter presents two case studies: one at the niche level, where bottom-up sustainability initiatives were analysed; and one at the regime level, where a policy instrument – the Green Tax Reform project – was analysed.

Chapter 8 wraps up the work, with a reflection about the PhD learning process, a summary of findings that provide answers to the research questions, strategic recommendations for a degrowth transition and explores some avenues for future research.

PART I. EXPLORING DEGROWTH AS A RADICAL SUSTAINABILITY VISION

2. SUSTAINABILITY VISIONS: A BRIEF INTRODUCTION

Sustainability has been used and abused as a buzzword in the past years. But what it really means to be pursue a sustainability vision? There are different visions of sustainability, that vary in the way the relationship between humans interact with the context in which they are inserted and in the degree of necessary changes, from minor to profound reforms that do or do not compromise the fundamental pillars of society.

The sustainability concept roots go back to 1950 (Kidd, 1992), but it was only in 1987 that sustainable development was formally conceptualized and started to spread globally. This was the year of the publication of the report “Our Common Future”, or Brundtland report (WCED, 1987), where sustainable development was defined by being a kind of development which assures “the needs of the present without compromising the ability of future generations to meet their own needs”. From this moment on, the concept has been evolving and materializing in the fundamental idea of matching economic, environmental and social concerns.

In this work, we take an ecological economics perspective of the relationship between these three basic pillars of sustainability. This means that the economic system is embedded in society, which in turn is embedded in the natural environment, as illustrated in figure 2. The key consequences of this vision are that economy is placed “within its biophysical limits, while recognising the need for the conduct of human society to respect others both present and future, human and non-human” (Spash, 2017, p. 3).

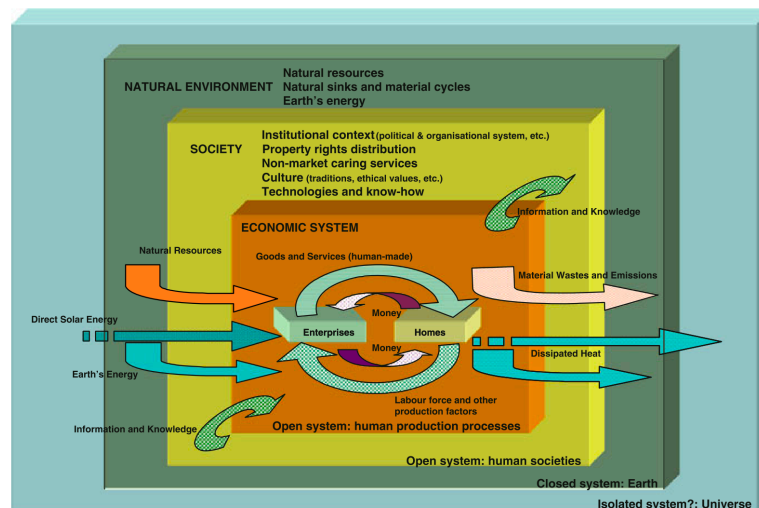


Figure 2 A systemic vision of sustainability issues (Munda, 2016)

The different narratives or discourses regarding the way to solve systemic social and environmental crisis also differ in terms of the degree of necessary change in the current societal structures. Focusing more on environmental issues, Dryzek (2005) distinguishes between various ways to see the pathway to sustainability: the dichotomy between those who believe in global limits to growth and the ones that believe that infinite economic growth is possible; the divergence between the ones who think that the solutions belong with experts, with the market or with everyone; the ones that think that people individually should change or that the whole society should change, through politics; and finally the distinction between the path of ecological modernization and the sustainable development path.

The economic approach to sustainability takes human wellbeing (utility) as the central point and can be divided in two approaches: weak and strong sustainability (Dietz and Neumayer, 2007). The weak sustainability (WS) approach considers that natural capital and human-made capital are, in general, interchangeable with respect to well-being improvement, what means that the depletion of one form of capital can be balanced by a surplus of the other form (Ang and van Passel, 2012; Dietz and Neumayer, 2007). According to Dietz and Neumayer (2007), this paradigm had its origin in the 1970's (e.g. Dasgupta and Heal, 1974; Hartwick, 1977; Solow, 1974) as the neoclassical theory of economic growth was extended to account for non-renewable natural resources as a factor of production. These authors claimed that the aggregated growth models at the time established rules for how much non-renewable resources were to consume at the present and how much was to invest in produced capital to increase consumption in the future. The intuitive rule was that non-renewable resource depletion rents should be reinvested in produced capital, so that the total net capital investment would not be persistently negative (Dietz and Neumayer, 2007; Hamilton, 1994; Hartwick, 1977). Still according to these authors, this is the basic rule that sustains the weak sustainability perspective, which is only possible to validate if at least one of these factors is true: (i) natural resources are super-abundant; (ii) elasticity of replacement between natural and produced capital is greater than or equal to unity; (iii) technological progress is such that makes it possible to increase natural capital productivity faster than it is depleted.

The strong sustainability (SS) perspective was originated as the WS approach was contested for being too simplistic. Contrarily to WS, SS considers that natural capital is not always substitutable, whether it is to a greater or lesser extent (Dietz and Neumayer, 2007). This is since the ecosystems provide us services, many of which are part of our support life system, which can be compromised if not well managed. The ecosystem services can be divided in three main categories (EEA, 2019): provisioning (e.g. biomass, water), regulating (e.g. atmospheric composition and conditions, pest and disease control) and cultural services (e.g. spiritual, symbolic, intellectual interactions with natural environment). Even if the economy managed to surpass past resource constraints, it is not guaranteed that this will continue to happen. Basic life support systems are probably impossible to substitute, what enhances the importance of SS perspective (Dietz and Neumayer, 2007). This type of capital can be called critical natural capital (Ang and van Passel, 2012). Moreover, the loss of natural capital may pose ethical problems due to the intrinsic value of species, what certainly cannot be replaced by any human-made capital.

The economic perspective of sustainability has the benefit of being more easily adjustable to our present societal and economic models. Nonetheless, it is not possible to put aside the question of putting a monetary value on all capital, whether if it is replaceable or not. This monetization of natural capital is done with the assumption that environmental values are all commensurable, what means that all different kinds of human wants can be translated into mono-dimensional utility (Ang and van Passel, 2012). Also assumed is that natural resources can be commoditised, i.e. that their utility can be turned into monetary values (Ang and van Passel, 2012; Gómez-Baggethun and Ruiz-Pérez, 2011).

More recently, Urhammer and Røpke (2013) explored the macroeconomic responses to environmental and social issues that flourished after the financial crisis in 2008. These responses, or macro narratives, are divided in the authors' work in pro-growth and no-growth perspectives. The pro-growth perspectives have in common the promotion of economic growth in a greener way, and use it as a synonym to employment, social stability, prosperity and wellbeing (Urhammer and Røpke, 2013). The used discourses are usually 'green growth' (OECD, 2009), 'green economy' (UNEP,

2011) or other similar concepts, and are mainly fostered by international, highly institutionalized organizations. The no-growth narratives consider that it is not possible to pursue economic growth indefinitely and propose alternative means, with different degrees of radicality, to the current dominant economic system. Some of these visions are the 'steady-state economics' (Daly, 1991; Dietz and O'Neill, 2013), 'prosperity without growth' (Jackson, 2017, 2009), the 'doughnut economics' (Raworth, 2017) and 'degrowth' (Kallis et al., 2012; Latouche, 2009; Schneider et al., 2010). These alternatives have been developed and proposed by smaller, less institutionalized groups.

For Urhammer and Røpke (2013) the no-growth narrative focuses too much in critique of the system and utopic proposals, lacking an organised strong structure. For the authors, the simplicity and structure of the plot is the key for its influence in policy-making, and this is indeed an advantage for the structured 'economic growth' narrative.

The reminder of this work will focus on the perspective that strives for a deeper degree of change in the dominant economic system - degrowth. The following chapter has the function to organize academic degrowth proposals, which aims to be a contribution to this caveat found in the no-growth visions for sustainability.

3. ASSESSING THE DEGROWTH DISCOURSE: A REVIEW AND ANALYSIS OF ACADEMIC DEGROWTH POLICY PROPOSALS¹

3.1. THE EVOLUTION OF THE DEGROWTH PERSPECTIVE: FROM THE EMERGENCE OF THE IDEA TO THE DEBATE OF CONCRETE PROPOSALS

There have been a number of efforts to define what degrowth means, to find its different contexts, and also to track the historical roots of the movement (D’Alisa et al., 2015a; Demaria et al., 2013; Martínez-Alier et al., 2010). Recent publications on degrowth are still quite divergent in terms of defining what degrowth encompasses, which makes it very complex to grasp what degrowth entails currently. In part this may be because some advocates of degrowth do not find it relevant to have a precise definition, and prefer to focus on the purposes of the movement itself (Latouche, 2010). There are also different types of approaches, as some authors focus mainly on conceptual aspects of degrowth – for example by criticising the development model of wealthy nations (Latouche, 2010; Martínez-Alier, 2009; Martínez-Alier et al., 2010) – while others focus on specific measures and policies for the future (Asara et al., 2015; Schneider et al., 2010; Speth, 2012).

According to Martínez-Alier et al. (2010), the degrowth movement has three main pillars - theoretical, activist and political. For characterizing the theoretical pillar of degrowth it is important to differentiate between the French *décroissance* movement (Fournier, 2008) and the sustainable degrowth literature, mostly explored in the ecological economics field of research (Kallis, 2011). While the contemporary French *décroissance* movement has its historical origins in the critique of development, modernity and political ecology concerns, the sustainable degrowth movement is usually traced to the critique to economic growth and the notion of a necessary “declining” state of the economy argued by Georgescu-Roegen in his influential works (Georgescu-Roegen, 1995; Kerschner, 2010; Martínez-Alier et al., 2010). Among many

¹ This chapter was published in *Journal of Cleaner Production*: Cosme, I., Santos, R., O’Neill, D.W., 2017. Assessing the degrowth discourse: A review and analysis of academic degrowth policy proposals. *J. Clean. Prod.* 149, 321–334. doi:10.1016/j.jclepro.2017.02.016.

other important works, influential sources of degrowth in terms of the critique of modernity, the calls for the abandonment of consumerism and for the importance of having autonomous individuals and societies, are the works of André Gorz (e.g. 1983), Ivan Illich (e.g. 1971) and Cornelius Castoriadis (e.g. 1998).

The other two pillars of degrowth, activist and political, are connected to social grassroots movements (Alexander, 2013) and to French political debates about degrowth (Baykan, 2007), respectively. These three pillars are not necessarily integrated in a common framework (Martínez-Alier et al., 2010), but there is an interaction between actors and ideas, especially in the degrowth international conferences, where academics, activists and practitioners share and debate ideas around the topics.

Degrowth may also be defined by the group of characteristics agreed by the participants at the “First International Conference on Economic De-growth for Ecological Sustainability and Social Equity”, held in Paris in 2008². At this conference, degrowth was defined as a “voluntary transition towards a just, participatory, and ecologically sustainable society”, and seen as the process that the wealthiest countries should go through in order to achieve a “right-sizing” of both national economies and the global economy (Flipo and Schneider, 2008). This interpretation was further developed by Schneider et al. (2010), who claim that degrowth aspires to be a multi-dimensional concept with a variety of interpretations, open for public debate and proposals for practical solutions. The authors define degrowth as “an equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions at the local and global level, in the short and long term” (Schneider et al., 2010). They suggest that the process of transition and end-state for society should be sustainable in both environmental and social dimensions.

Kallis (2011) discusses degrowth as a “multi-facet political project” and defines it from an ecological economics perspective as “a socially sustainable and equitable reduction (and eventually stabilisation) of society's throughput”. He adds the importance of reducing our environmental impacts to a sustainable level where they

² For further information see the website of the conference: <http://events.it-sudparis.eu/degrowthconference/en/>.

can be stabilised. Kallis considers degrowth to be an “umbrella keyword” that provides a context for the linkage of policies and civil movements. A more recent conceptualisation includes the rejection of growth as a development paradigm and focuses on the key importance of democracy for shrinking production and consumption (D’Alisa et al., 2015a)

In sum, degrowth can be defined by what it is and by what it is not. Importantly, degrowth is not a synonym for economic recession and it is not a goal in itself (Schneider et al., 2010). This means that a degrowth path might include a period of negative growth, but only by building a different type of economic system that does not collapse with contraction. In this context, degrowth can also be seen as a possible pathway to a steady-state economy (SSE). This idea is proposed by Kerschner (2010) and defended by O’Neill (2012), who argue that the two concepts are complementary. This vision proposes degrowth as a way for the countries in the northern hemisphere to achieve a SSE, while countries in the south should follow a path of decelerating growth (or a new development pathway altogether). Degrowth claims that we should abandon the goal of growth for growth’s sake, and thus the idea of society being an instrument of the productive mechanism (Latouche, 2009). Degrowth argues that industrialised societies should focus on happiness and relationships, instead of efficiency. For this, the feminist perspectives of degrowth claim that “re-centring the society around care would pave the way to degrowth” (D’Alisa et al., 2015b), since it would contribute to a more just society in terms of well-being and work distribution. In the overall, degrowth is a quest for building, in a voluntary way, a better society and creating a new “post-development” pattern that is socially just and within ecological limits (Martínez-Alier et al., 2010).

3.2. DEGROWTH AND ECOLOGICAL ECONOMICS POLICY OBJECTIVES

This article analyses academic degrowth proposals from an ecological economics perspective, a field where degrowth research has been evolving in the last decades. Ecological economics is a transdisciplinary field of study whose fundamental premise is that the economic system is embedded within a social system, which is in turn embedded within an ecological system (the biosphere). Given this premise, ecological economics argues that many environmental problems are caused by the scale of economic activity exceeding ecosystem limits (Daly and Farley, 2011). This perspective

is in contrast to mainstream (i.e. neoclassical) economics, which argues that environmental problems largely arise due to market failures (e.g. externalities). According to Røpke (2004), in the ecological economics perspective, market failures are “pervasive and persistent, and as population and production grow, they become progressively more important”. This happens since a “growth in population and per-capita consumption lead to increasing absolute scarcity”, while the internalization of externalities is limited to dealing with relative prices and thus, relative scarcity (Daly, 1991).

Daly (1992) defines three policy objectives for ecological economics, which have been widely applied in ecological economics research (Deepak, 2010; Lawn, 2001; Stewen, 1998). The objectives are: (1) sustainable scale of resource use, (2) fair distribution of income and wealth, and (3) efficient allocation of resources.

A sustainable scale of the economy can be defined as a scale that does not require a physical volume of throughput that might put carrying capacity or ecosystem services at risk (Daly, 1992). Policy options that can address scale issues are usually associated with resource use, pollution, the size of the production system, or population size. To have a sustainable scale of economic activity, we need to maintain resource extraction within the regenerative capacity of ecosystems, and wastes within their absorptive capabilities—or, more generally, not cross planetary boundaries (Rockström et al., 2009).

According to Konow (2003) analysis of justice theories, a fair distribution can be interpreted as a procedural justice (fair processes) and/or a distributive justice (fair outcomes). This means that a fair distribution can be considered in diverse ways: (i) when people have equal rights, liberties and opportunities (equality of outcomes); (ii) when it is possible to find a reasonable way of distributing the goods or wealth and/or the subjective values provided by it (welfarism/utilitarianism); (iii) when the context of decision-making is taken into account, since justice can be context-dependent (Konow, 2003). Usually a fairer distribution is considered in the political processes as being accomplished by having fair outcomes, and so it is pursued with the help of policy instruments that redistribute income and wealth, such as taxes and social payments (Daly, 1992). In a degrowth perspective, the concepts of justice should not only be

applied to different possible models of society but also to the transition path to that kind of society (Muraca, 2012).

Sustainability is a concept that gives the same weight to inter and intragenerational types of justice (Tremmel, 2009). Degrowth is a debate with origins in the demand of justice between the Global North and Global South, a quest for a fair distribution at a global and intergenerational level. The fair distribution dimension should also include the concept of intergenerational justice. All of these perspectives were considered in our categorisation of degrowth proposals addressing the fair distribution goal.

An efficient allocation may be defined as the efficient division of the resource flow between alternative product uses in compliance with individual preferences (Daly, 1992), in order to maximise well-being per unit of resource use. Daly and Farley (2011) suggest that the best way to know whether resources are being allocated efficiently is to calculate the ratio between the services³ gained by increasing human-made capital to the services lost by sacrificing natural capital.

Policy arenas are often dominated by the “cult of efficiency” (Stein, 2002). By contrast, from an ecological economics perspective, the criterion of efficiency cannot be seen as sufficient on its own, it has to be contextualized in the biophysical and social limits realm (Jollands, 2006). In the context of environmental policy, the pursuit of efficient allocation, and even fair distribution, is being translated into the commodification of nature in new ways, in order to reflect dominant political and economic views (Gómez-Baggethun and Ruiz-Pérez, 2011). In this article, the three ecological economics policy objectives are used to understand how some degrowth proposals are capturing or proposing a deeper socio-ecological understanding (Spash, 2013).

³ Service is defined in this context as a “physical flux of satisfaction, which is derived from manmade capital as well as from ecosystem services provided directly by natural capital” (Daly and Farley, 2011)

3.3. ANALYTICAL FRAMEWORK FOR DISCUSSING THE DEGROWTH DEBATE

The degrowth literature has been expanding, as this issue becomes increasingly debated. This analysis covers academic degrowth proposals, including policy instruments, measures, and goals described by degrowth authors.

The research method used to categorise and analyse the academic degrowth proposals is *Grounded Theory* (GT). GT is an approach that allows the researcher to inductively construct theory about a certain issue in a systematic manner (Strauss and Corbin, 1990). The use of GT in this research facilitated the integration of complex and interconnected degrowth dimensions. This allowed having a novel approach on explaining the overall degrowth vision for action, grounded on the systematic review and categorization of academic degrowth proposals. Also, this is an exploratory research, and thus there was the necessity to have a flexible approach to allow the creation of new theoretical work in the field.

There are four general approaches to analysing qualitative data using GT (Glaser and Strauss, 1999): (i) converting qualitative data into a quantitative form, so that the hypothesis can be tested in a provisional way; (ii) generating theoretical notions, redesigning and redefine them along the process of reviewing data; (iii) the constant comparative method, in which the process consists on explicitly coding data and analysing it at the same time, so that theory can be created in a more systematic process; (iv) the analytic induction method, which combines the first two approaches to get a more limited and precise universal theory for the selected set of data. Independently of the type of approach chosen, the GT method is supported by the background knowledge and assumptions of the researcher performing it.

This research can be divided into three different stages. The first stage includes steps 1 and 2, in which the sampling process of the articles to review was performed. The second stage includes steps 3 and 4 and the main findings of the analysis (section 3.4.1). The GT approach taken was the constant comparative method. The approach was used at this stage to articulate and organise the collected data (degrowth academic proposals). The process of coding the proposals that lead to the final categories was iterative, and it had four stages: (a) classifying the data into categories (topics) derived from the data itself, from the authors' readings and/or previous experience; (b)

integrating the categories created and their properties; (c) delimiting the theory by organizing data in different manners, integrating categories or developing new ones; and (d) writing the theory, which was then used to the second stage of the analysis, where more theory was developed.

The third stage comprises step 5 and the discussion of results (section 3.4.2). The GT approach taken at this stage was again the constant comparative method. This approach was crucial to achieve the goals of this article, since it helped to first systematise the findings, by allocating the group of degrowth proposals retrieved from the literature into the chosen categories, and afterwards to discuss those findings, as this GT approach facilitated an understanding of the context where a certain proposal appears and how it is presented. The two stages of the analysis fit the purposes of this research since they helped to analyse the relative importance of the group of degrowth proposals analysed in terms of their appearance in the literature, and contributes to a better understanding of their importance to the overall degrowth discourse in academic peer-reviewed literature.

3.3.1. STEP 1: IDENTIFICATION OF DEGROWTH-FOCUSED ARTICLES

To start the process, a search was performed for articles that satisfied the following criteria:

- Published in peer-reviewed academic journals;
- Cite the words “degrowth”, “de-growth” or “décroissance”;
- Written in English; and
- Published in the period 2007-2014.

A group of 128 articles were identified that satisfy these criteria. 114 articles were found via the Web of Science database and 14 articles in other sources (e.g. Google Scholar). Books were not considered in the analysis, as the goal of this research was to assess the peer-reviewed academic literature, although the authors recognise the importance of books to the degrowth discourse.

Articles that did not have degrowth as their main focus were then excluded, even if they cited it. A total of 38 articles were removed from the initial set, and the sample was reduced to 90 articles. The distribution of the selected group by journal is presented in Table 1.

Table 1 Number of articles selected in Step 1, by journal.

Journal	Nº of articles
Journal of Cleaner Production	23
Ecological Economics	19
Futures	12
Environmental Values	8
Capitalism Nature Socialism	7
Sustainability	6
Environmental Politics	2
Journal of Sustainable Tourism	2
Annals of the Association Of American Geographers	1
Development and Change	1
Environment and Planning C-Government and Policy	1
Environment Development and Sustainability	1
Global Environmental Change-Human and Policy Dimensions	1
Journal of Economic Issues	1
Journal of Environmental Protection	1
Journal of Industrial Ecology	1
Monthly Review - An Independent Socialist Magazine	1
Trends in Genetics	1
Urban Studies	1
Total	90

3.3.2. STEP 2: SCREENING ARTICLES FOR POLICY PROPOSALS

Continuing the process, the group of 90 articles was analysed with the help of QSR International's NVivo 10 qualitative data analysis software (QSR International, 2015). The articles were filtered using the following three keywords: *policy*, *instruments*, and *measures* (plus some stemmed words, for instance "policies"). The filtering process was done with the help of the selected keywords, but the context analysis (i.e. reading the paragraphs where the keywords appeared) was determinant to perform the selection of articles.

From the group of 90 articles identified in Step 1, there were 54 articles that included the keywords in a context that was relevant to the analysis. Articles with both original proposals and cited proposals were included in this group, as it was considered that citations were an endorsement of a given proposal. The list of the 54 articles may be found in Table 2.

Table 2 List of references of the 54 papers used for the analysis and codes

Code	Reference	Code	Reference	Code	Reference
1	(Philippe, 2008)	19	(Johanisova and Wolf, 2012)	37	(Domènech et al., 2013)
2	(Huppés and Ishikawa, 2009)	20	(Kallis et al., 2012)	38	(Garver, 2013)
3	(Cattaneo and Gavalda, 2010)	21	(Klitgaard and Krall, 2012)	39	(Infante Amate and González de Molina, 2013)
4	(Hueting, 2010)	22	(Muraca, 2012)	40	(Järvensivu, 2013)
5	(Kallis and Martínez-Alier, 2010)	23	(Nierling, 2012)	41	(Johanisova et al., 2013)
6	(Latouche, 2010)	24	(Speth, 2012)	42	(Kallis et al., 2013)
7	(Lietaert, 2010)	25	(Tokic, 2012)	43	(Kallis, 2013)
8	(Martínez-Alier et al., 2010)	26	(Trainer, 2012)	44	(Karlsson, 2013)
9	(Matthey, 2010)	27	(van den Bergh and Kallis, 2012)	45	(Lorek and Fuchs, 2013)
10	(Schneider et al., 2010)	28	(van Griethuysen, 2012)	46	(Mauerhofer, 2013)
11	(Berg and Hukkinen, 2011)	29	(Xue et al., 2012)	47	(Norgård, 2013)
12	(Hall, 2011)	30	(Alcott, 2013)	48	(Sekulova et al., 2013)
13	(Kallis, 2011)	31	(Alexander, 2013)	49	(Sorman and Giampietro, 2013)
14	(Schneider et al., 2011)	32	(Boonstra and Joosse, 2013)	50	(Andreoni and Galmarini, 2014)
15	(Alexander, 2012)	33	(Borowy, 2013)	51	(Buch-Hansen, 2014)
16	(Bilancini and D'Alessandro, 2012)	34	(D'Alisa and Cattaneo, 2013)	52	(Kallis and March, 2015)
17	(Deriu, 2012)	35	(Demaria et al., 2013)	53	(Videira et al., 2014)
18	(Douthwaite, 2012)	36	(Dittmer, 2013)	54	(Xue, 2014)

3.3.3. STEP 3: IDENTIFICATION AND CATEGORISATION OF BROAD DEGROWTH GOALS AND TOPICS

In this step, the analysis proceeds to the second stage, in which the data started to be collected and coded. To facilitate the coding of degrowth proposals, the process started with the creation of general categories. Using the group of articles selected in Step 1, and using the constant comparative approach, similar ideas retrieved from the articles were aggregated and key degrowth topics were identified in an iterative process. In the end, the degrowth topics were organised into three groups, which corresponded to the authors' interpretation of the broad degrowth goals, drawing on the Paris

Declaration (Research & Degrowth, 2010). These goals are the following: (1) Reduce environmental impacts; (2) Redistribute income and wealth both within and between countries; and (3) Promote the transition from a materialistic to a convivial and participatory society.

3.3.4. STEP 4: CATEGORISATION OF DEGROWTH PROPOSALS ACCORDING TO MAIN GOALS AND TOPICS

To code the degrowth proposals included in the 54 articles, an iterative coding exercise was performed. To facilitate the change of categories that occurred due to the constant comparative analysis process, QSR International's NVivo 10 (QSR International, 2015) was again used. The usefulness of this software when following a GT approach has been demonstrated by other studies in the field of sustainability science (Garza-Reyes, 2015; Lozano and Huisingh, 2011).

Based on the knowledge gathered in the screening of all articles, keywords were attributed to each of the three broad degrowth goals, to facilitate the process of delimiting the theory being created. These are presented in Table 3. Each keyword may be linked to a topic, although here it is presented keywords as a group since many link to multiple topics. Apart from the keywords referred to in Table 3, many stemmed words were included to improve the analysis (e.g. frugality/frugal, cohousing/co-housing, democracy/democratic, cap/caps). The keywords were only used to identify the proposals along the group of 54 articles, since here also a context analysis was determinant to the identification of proposals. The proposals identified were then coded into a topic, and re-coded into another one if further on the iterative process it made more sense to be aggregated to another proposal, or even to change between the broad degrowth goals (see Table 3).

At the end of this step, the first stage of the GT process was concluded by constructing, in a systematic way (as described in the beginning of Section 3.3), various dimensions and goals from the raw degrowth proposals in the selected literature. This process allowed us to integrate degrowth issues and brought up new links between the data, which are explored in the next stage.

Table 3 Identification of degrowth main goals, topics, and keywords used in the GT process.

Broad degrowth goals	Topics identified	Keywords
Goal 1: Reduce the environmental impact of human activities	consumption impacts; ecological conservation; infrastructures; pollutant emissions; production impacts; resource use; trade impacts	advertising, bans, caps, carbon, conservation, consumption, ecosystem, emissions, energy, funds, government, impact, industry, intermediaries, investment, material, pollution, production, provision, regulatory, resources, strategies, subsidies, taxes, trade
Goal 2: Redistribute income and wealth both within and between countries	access to goods and services; equity; global governance; socioeconomic opportunities	access, bank, basic income, business, caps, citizen income, commons, company, cooperative, corporation, currency, debt, decentralisation, developing countries, developing, distribution, employment, environmental costs, equity, exchange, externalities, firm, full employment, household work, income, inequality, institutions, international assistance, international capital movement, job guarantee, job sharing, job, monopoly, non-monetary, organisation, poverty, progressive taxation, public goods, public investment, public services, redistribution, redistributive taxation, salary, social costs, social security, solidarity, taxes, unemployment, valuing, voluntary work, wage, work sharing, work
Goal 3: Promote the transition from a materialistic to a convivial and participatory society	community building, education, and value change; democracy and participation; free time; voluntary simplicity and downshifting	cohousing, community, conviviality, culture, democracy, downshifting, education, free, frugality, government, holidays, house-sharing, informal, institution, labour, leisure, lifestyle, participation, productivity, sharing, simplicity, squat, sufficiency, tradition, transition, unpaid, unremunerated, values, voluntary, working hours, working week

3.3.5. STEP 5: CATEGORISATION OF DEGROWTH PROPOSALS ACCORDING TO THEIR GEOGRAPHICAL FOCUS, TYPE OF APPROACH, AND RELATION TO ECOLOGICAL ECONOMICS POLICY OBJECTIVES

At this stage, the results from the first stage of the analysis (presented in section 3.4.1.) were used to perform another analysis, following again the constant comparative approach. The proposals identified were categorised in a number of ways: (i) by number of citations (identifying, in particular, those with 8 citations or more); (ii) by geographical focus, distinguishing between international (I), national (N), and local/regional (L) scales; (iii) by type of approach, distinguishing between top-down (TD) and bottom-up (BU) approaches; and (iv) by how the proposals relate to the three ecological economics policy objectives: sustainable scale (SS), fair distribution (FD), and efficient allocation (EA).

Placing proposals into categories is a subjective process, but in each case an attempt was made to connect the proposal to the category (or categories) considered to be most appropriate. Since individual proposals can have multiple interpretations, they have been placed into all categories where they fit (e.g. if a proposal aims to achieve both sustainable scale and efficient allocation, it is placed in both categories). The criteria used for the categorisations are presented in Table 4.

Table 4 Criteria for categorising degrowth proposals relative to their geographical focus, type of approach, and ecological economics policy objective.

Analysis	Category	Criteria	Reference
Geographical focus	International (I), National (N), or Local (L)	Geographical scale necessary for the implementation of the strategy	-
Type of approach	Top-down (TD)	Strategies pursued by the highest level of a system (usually expert-led)	(Cairns, 2003)
	Bottom-up (BU)	Strategies that are designed for components or local contexts (usually community-led)	
Ecological economics policy objectives	Sustainable scale (SS)	Strategies that address the physical volume of throughput that might put the carrying capacity of an ecosystem at risk (e.g. resource use, pollutant emissions)	(Daly, 1992; Daly and Farley, 2011; Konow, 2003; Muraca, 2012; Tremmel, 2009)
	Fair distribution (FD)	Strategies that address the supply of goods among people, division of environmental costs, and environmental justice (e.g. wealth management, social payments, public participation)	
	Efficient allocation (EA)	Strategies that address an efficient division of the resource flow between alternative product uses in compliance with individual preferences, in order to maximise well-being per unit of resource use (e.g. energy efficiency, redirecting investments to ecological conservation)	

3.4. FROM DEGROWTH THEORY TO POLICY: MAIN FINDINGS AND DISCUSSION

In this section, the main findings of the analysis of degrowth proposals are presented, followed by a discussion of the implications of these findings. After that, the limitations of the analysis are discussed, and the avenues opened for further research.

3.4.1. MAIN FINDINGS FROM THE ANALYSIS OF DEGROWTH PROPOSALS

The second stage of the analysis is completed with the description of the main findings, presented in this subsection. The majority of the degrowth proposals analysed

have a national focus of implementation, followed by local, and then international (see Figure 3). Around three quarters of these proposals present a top-down or mixed approach (see Figure 3).

The analysis of the ecological economics policy objectives – sustainable scale, fair distribution and efficient allocation – reveals that the analysed proposals mainly address issues of sustainable scale, followed closely by fair distribution. Efficient allocation has much less emphasis. Some of the analysed proposals (15%) address both sustainable scale and one of the other two policy objectives (see Figure 3).

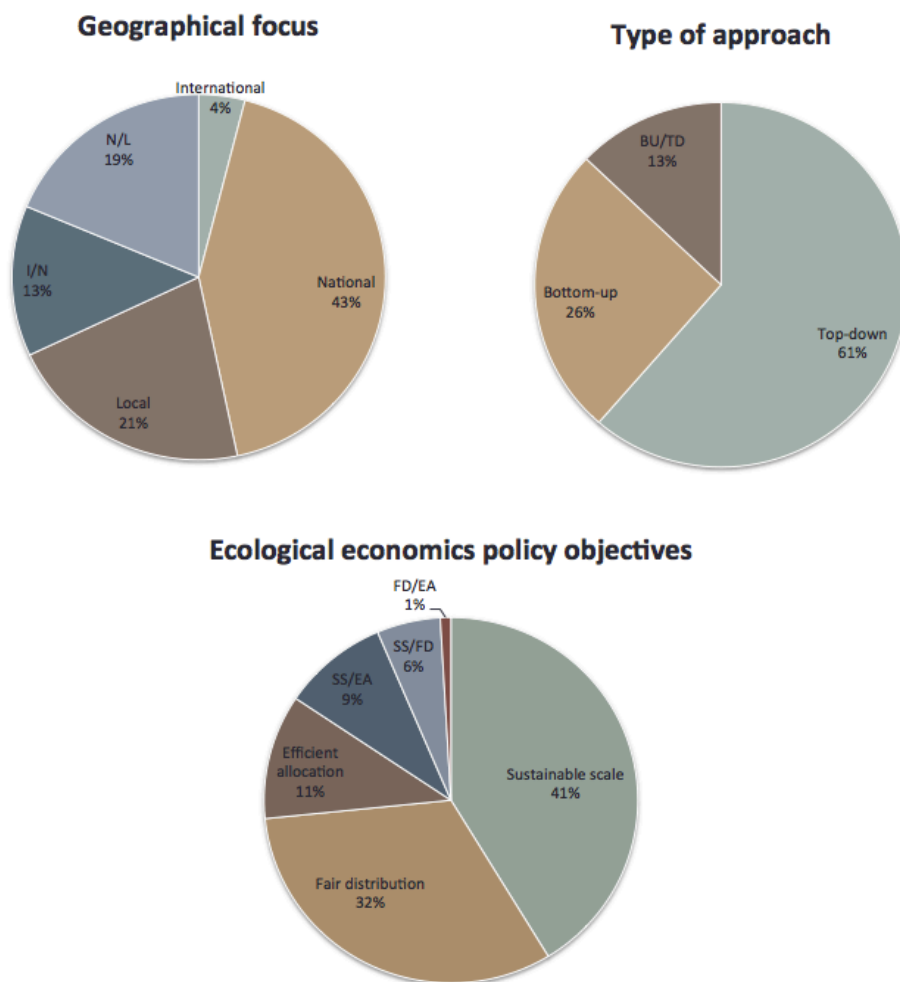


Figure 3 Results for the analysis of geographical focus, type of approach, and ecological economics policy objectives (Note: I = International, N = National, L = Local, TD = top-down, BU = bottom-up, SS = sustainable scale, FD = fair distribution, EA = efficient allocation).

The degrowth proposals identified in this research are organised into three tables, according to their broad degrowth goal (Tables 5, 6, and 7). These tables reflect — not only the categorisation of individual proposals by different goals — but also by different topics. They also summarise the results of the analysis of the individual proposals.

The results of the analysis for Goal 1 (Reduce environmental impacts) are presented in Table 5. The proposals that are most commonly put forward to achieve this goal are (from most- to least-cited): reduce material consumption; reduce energy consumption; encourage or create incentives for local production and consumption; and promote changes in consumption patterns. Overall, the most emphasised topic under this goal (from those in Table 3) is *resource use*.

The results for Goal 2 (Redistribute income and wealth both within and between countries) are presented in Table 6. The proposals that are most commonly put forward to achieve this goal are (from most- to least-cited): promote community currencies, non-monetary exchange systems and alternative credit institutions; promote a fair distribution of resources through redistributive policies of income and capital assets; promote work-sharing; create a citizen's income; create salary caps; encourage the reform of corporation charters and new ownership patterns; improve social security and invest in public goods; and implement redistributive taxation schemes. Overall, the most emphasised topic under this goal (from those in Table 3) is *access to goods and services*. As shown in Figure 4, the goal with the most citations in total is Goal 2. Proposals related to redistribution are cited more often than those related to environmental impact. Interestingly, the number of articles that discuss each goal is about the same (around 40 in each case, out of the 54 analysed).

The results for Goal 3 (Promote the transition from a materialistic to a convivial and participatory society) are presented in Table 7. The most commonly put forward proposals to achieve this goal are (from most- to least-cited): promote downshifted lifestyles; reduce working hours; and explore the value of unpaid and informal activity. Overall, the most emphasised topic under this goal (from those in Table 3) is *voluntary simplicity and downshifting*.

Table 5 Analysis of degrowth proposals for Goal 1: Reduce the environmental impact of human activities.

Topic	Degrowth proposal	Sources	Geo focus	Type of approach	EE policy objectives
Consumption	Promote changes in consumption patterns	9, 10, 12, 35, 39, 44, 45, 54	N/L	BU	SS/EA
	Tax consumption	15, 26, 52	N	TD	SS
	Limit/regulate advertising	10, 13, 26, 38, 48, 52, 53	N	TD	SS
	Decrease the number of appliances and volume of goods used or consumed per household	3, 20, 27, 34, 48	L	BU	SS
Ecological conservation	Promote the restoration of ecosystems	17	L	TD/BU	SS
	Finance funds and projects for the conservation of biodiversity	14, 17, 18	N/L	TD/BU	SS/EA
	Promote the use of local sources of water (rainwater, greywater) to reduce dependence on large infrastructures and improve the quality of freshwater ecosystems	37	L	TD/BU	SS/EA
Infrastructure	Redirect investments away from infrastructure in fast and car-based models of transport to slow-mode ones	31, 48, 54	N	TD	SS/EA
	Create a moratorium on new infrastructure (e.g. nuclear plants, highways, dams)	13, 14	N	TD	SS
Pollution	Put caps on CO2 emissions, tradable or non-tradable	5, 13, 14, 27	I/N	TD	SS
	Tax environmental externalities	13, 28	N/L	TD	SS
	Certify organic farming including CO2 emission reduction goals	47	N	TD	SS
	Reduce waste generation	29	N/L	TD/BU	SS
Production	Reduce production (large-scale, resource intensive)	4, 10, 13	N	TD	SS
	Promote organic farming/sustainable agriculture	20, 28, 39, 47, 52	N/L	TD/BU	SS
	Introduce simpler technologies	48	N/L	TD	SS/EA
	Create regulatory bans for very harmful activities/technologies (e.g. nuclear energy)	13, 38	I/N	TD	SS
	Make more green investments	20, 33	N	TD	EA
	Promote eco-efficiency	2, 53	N	TD	SS/EA
Resource use	Put caps on resource use and extraction (tradable or non-tradable)	5, 14, 20, 27, 48, 53, 54	I/N	TD	SS
	Tax the extraction of resources at origin	10	N	TD	SS
	Reduce energy consumption	8, 10, 15, 31, 35, 38, 40, 47, 49, 51, 54	N/L	TD/BU	SS
	Reduce material consumption	6, 8, 10, 13, 16, 17, 29, 35, 38, 40, 45, 54	N/L	TD/BU	SS
	Create a moratorium on resource use and extraction	13, 53	I/N	TD	SS
	Make commitments to leave resources in the ground	13, 48	I/N	TD	SS
	Tax resource use	17, 20, 27, 46, 47, 53	N	TD	SS/EA
	Promote the use of local sources of rainwater and greywater	37	L	TD/BU	SS
	Remove harmful subsidies for resource extraction	53	N	TD	SS
	Invest in more renewable energy	13, 15, 28, 31, 52, 54	N	TD	SS/EA
	Promote the compact city form of urban planning	54	N/L	TD	SS/EA
	Promote strong social and environmental provisions in trade agreements	38, 53	I	TD	SS/FD
Trade	Limit trade distances and volume	6, 53	I	TD	SS
	Create incentives for local production and consumption	12, 15, 28, 31, 35, 36, 39, 41, 47, 48, 54	L	TD/BU	SS/FD
	Reduce the number of scientific conferences	1	I/N	TD	SS/EA
	Regulate the tourism industry	12	N/L	TD	SS
	Promote voluntarily reductions in commerce and trade	44	N/L	TD/BU	SS

Note: L = local, N = national, I = international, TD = top-down, BU = bottom-up, SS = sustainable scale, FD = fair distribution, EA = efficient allocation.

Table 6 Analysis of degrowth proposals for Goal 2: Redistribute income and wealth both within and between countries.

Topic	Degrowth proposal	Sources	Geo focus	Type of approach	EE policy objectives
Access to goods and services	Create a basic/citizen's income	8, 10, 11, 13, 14, 20, 27, 31, 32, 35, 43, 46, 51, 52	N	TD	FD
	Promote community currencies, non-monetary exchange systems and alternative credit institutions	10, 11, 13, 14, 18, 20, 25, 27, 28, 31, 32, 35, 36, 50, 51, 52, 54	L	BU	FD
	Improve social security and investment in public goods to guarantee equal access to goods and services, and thereby protect people from poverty and exclusion	10, 13, 14, 20, 26, 27, 33, 35, 37, 52	N	TD	FD
	Decrease unemployment	10, 26, 27	N	TD	FD
	Turn banking into a public service	10	N	TD	FD
	Create a job guarantee	20, 27, 30, 48	N	TD	FD
	Promote the recognition and management of common goods	17, 19, 26, 35, 52	L	TD/BU	FD/EA
	Eliminate debt-based money	53	N	TD	SS/FD
Equity	Promote a fair redistribution of resources through redistributive policies of income and capital assets	2, 10, 13, 15, 19, 20, 21, 25, 27, 28, 29, 31, 35, 38, 46, 53, 54	N	TD	SS/FD
	Implement redistributive taxation schemes	10, 13, 15, 25, 27, 31, 43, 54	N	TD	FD
	Promote the shift of costs from labour to capital	10, 19, 25, 43, 47	N	TD	FD
	Encourage the breaking up of large corporations to avoid monopolies	10	N	TD	FD
	Encourage the reform of corporate charters and promote new ownership patterns	10, 14, 15, 19, 20, 41, 43, 48, 51, 54	N	TD	FD
	Encourage the breaking up and decentralisation of banks and financial institutions	13, 25	N	TD	FD
	Create salary caps	13, 15, 20, 31, 32, 35, 38, 43, 48, 51, 54	N	TD	FD
	Tax international capital movement	13, 28	I/N	TD	FD
	Tighten the control on tax havens	13, 28	I/N	TD	FD
Global governance	Put a price on environmental and social externalities	13, 20, 21	I/N	TD	FD
	Prepare for long-term non-growth after the period of growth for developing countries	29	I/N	TD	SS
	Establish common but differentiated responsibilities of developed and developing countries	38	I	TD	FD
Socioeconomic opportunities	Promote work-sharing and job-sharing	8, 10, 11, 14, 20, 27, 31, 34, 38, 42, 43, 47, 48, 52, 53	N	TD	FD
	Create more employment in key sectors	13, 25, 32	N	TD	FD
	Provide sufficient work opportunities	17, 21, 27	N	TD	FD
	Encourage small, local enterprises	41, 54	L	BU	SS/FD

Note: L = local, N = national, I = international, TD = top-down, BU = bottom-up, SS = sustainable scale, FD = fair distribution, EA = efficient allocation.

Table 7 Analysis of degrowth proposals for Goal 3: Promote the transition from a materialistic to a convivial and participatory society.

Topic	Degrowth proposal	Sources	Geo focus	Type of approach	EE policy objectives
Community building, education and value change	Create funds to finance low economic cost, high welfare public investments	13, 42	N	TD	FD
	Promote a value change	11, 23	L	BU	SS
	Invest in the restoration and strengthening of local communities	26, 50, 51, 54	L	BU	SS
	Strengthen common possession regimes and customary institutions through their formal recognition by external actors	28, 41, 52	L	BU	FD
	Introduce and incentivise education on ecological/social limits and sustainability in various educational and training establishments	17, 53	N/L	TD/BU	SS
	Promote the preservation of ancient knowledge, language, and techniques	17	L	BU	SS
Democracy and participation	Decentralise and deepen democratic institutions	10, 17, 22, 28, 37, 40, 54	L	BU	FD
	Promote alternative political systems and capabilities to provide them	3, 14, 35, 43, 54	N/L	BU	FD
	Create caps on political and electoral spending to allow equal participation chances	14	N	TD	FD
	Promote regeneration of fundamental democratic institutions to incorporate degrowth-related spatial, temporal, and value dimensions	14, 35	N/L	TD/BU	FD
Free time	Promote shared living spaces (with shared chores)	3, 7	L	BU	SS/FD
	Reduce working hours	2, 8, 10, 13, 14, 15, 16, 20, 23, 25, 27, 29, 31, 32, 34, 41, 45, 46, 47, 52, 53	N	TD	FD
Voluntary simplicity and downshifting	Promote frugal, downshifted lifestyles	3, 6, 7, 8, 10, 13, 14, 15, 31, 35, 36, 43, 45, 47, 48, 50, 52, 54	L	BU	SS
	Explore the value of unpaid and informal activity	7, 10, 23, 26, 34, 43, 48, 50	L	BU	FD
	Devise new measures to track improvements in social welfare	15, 31	N	TD	FD

Note: L = local, N = national, I = international, TD = top-down, BU = bottom-up, SS = sustainable scale, FD = fair distribution, EA = efficient allocation.

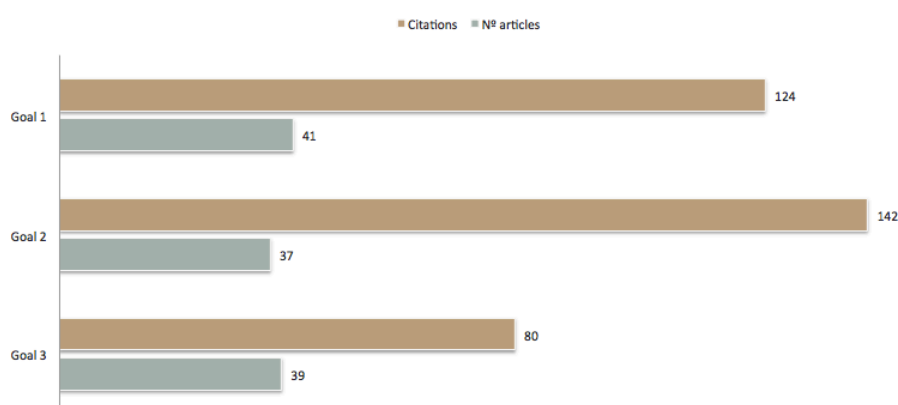


Figure 4 Number of total citations and articles per goal.

3.4.2. DISCUSSION OF THE FINDINGS

The third stage of the analysis is completed with the writing of the discussion of the findings, presented in this subsection. Degrowth concerns appeared from a grassroots social movement that arose as a critique of growth, and that has tried to raise awareness about alternative lifestyles that can be more sustainable. According to Kallis et al. (2015), degrowth calls for the decolonisation of public debate from the idiom of 'economism', and seeks to replace it with a society organised around sharing, simplicity, conviviality, care, and the commons.

The first message of the analysis is that—despite the grassroots origins of degrowth—the majority of degrowth proposals published in peer-reviewed journals follow a top-down approach and have a national geographical focus, both in terms of environmental and social protection. In spite of the potential controversy of the categorization of proposals into the top-down/bottom-up categories, due to the degree of fuzziness they present (see section 3.4.3), this analysis is a first step to understand how degrowth proposals are being explored in the selected academic literature.

Many proposals require direct control by governments (e.g. caps, taxes, and regulations), which suggests the need for a high level of state intervention to pursue a degrowth transition. This contradicts the discourse of many degrowth proponents, which is usually focused on the need for a voluntary and democratic downshift, and thus an intrinsic pursuit of more public space so that civil society can be an active agent of change (Deriu, 2012; Kallis et al., 2015; Muraca, 2013; Ott, 2012). That said, it is important to note that some proposals classified as top-down may have the goal of indirectly driving bottom-up action. An example is the proposal to reduce working hours. Although many people might prefer to work fewer hours (Clark, 2010), this can only happen if institutions are reformed to give them this choice.

Despite the potential need for strong state intervention, for Kallis and Martínez-Alier (2010, p. 1573), "there is no choice between the environment and democracy; sustainable degrowth should be a democratic process of transition or nothing at all". It is crucial to continue the discussion of the relationship between democracy and degrowth, already initiated by authors such as Boillat et al. (2012), Deriu (2012), and Xue et al. (2012). Boillat et al. (2012) discuss the case of Cuba as an example for how a

transition to a degrowth society could occur, claiming that a strong state and a non-capitalist system are key to achieving a degrowth path. The lack of democratic freedoms in Cuba remains contrary to the goals of degrowth, however. Deriu (2012), on the other hand, discusses the connection between degrowth and democracy, claiming that these two projects are not immediately and necessarily linked from the top. The author suggests that centralised planning power can be replaced with a “broader and articulated process of shared learning, self-education, reconstruction of social ties and collective transformation” (Deriu, 2012) and that the degrowth movement is a great way to rediscover the epistemological and theoretical grounds of democracy.

Although a transition to a degrowth society is idealised as democratic and voluntary, history tells us that changes in the status quo are usually not free from violence, controversy and/or public contestation (e.g. Shiva, 2016). Economic globalisation is the reality in place, led by powerful transnational corporations, focused on increasing profit and maintaining power (Madeley, 2003). A change towards a more autonomous and convivial society will not bring advantages to the existing power structures, and so how to effectively deconstruct these structures is a debate that degrowth proponents should engage in.

The second important message of our analysis is that the degrowth academic literature is, if anything, more focused on social equity than on environmental sustainability. This finding may be seen by looking at the number of proposals aligned with Goal 2 (Redistribute income and wealth both within and between countries) and by the analysis of ecological economics policy objectives, which revealed that proposals addressing fair distribution are almost as prevalent as those addressing sustainable scale. This finding agrees with other recent work on defining degrowth (D’Alisa et al., 2015a), which suggests that the degrowth movement is not as focused on environmental sustainability as other sustainability approaches. This aspect of degrowth differentiates the movement from other perspectives that reject growth, such as steady-state economics (Daly, 1991), and even from ecological economics itself, due to the field’s primary focus on ecological limits (Klitgaard and Krall, 2012).

The importance of social equity to degrowth may be another reason why many of the policies advocated are of a top-down and national nature. As the New Economics

Foundation points out in a report calling for a new social settlement in the UK, “civil society has no inherent mechanisms for achieving equality. Not everyone can participate and benefit as easily as everyone else, because the conditions that make it possible are not equally distributed. This calls for action through the state. Indeed there is no other comparable vehicle that is capable of promoting equality across national populations” (Coote, 2015). Fair distribution and sustainable scale are both macroeconomic goals, requiring national policy and a strong role for the state.

A third message is that the objectives behind the proposals are sometimes unclear. For example, in the proposal to “improve social security and investment in public goods” (Borowy, 2013; Domènech et al., 2013; Kallis, 2011; Schneider et al., 2010) it is unclear which public goods the authors want to increase investment in. This issue can also be illustrated by the substantial overlap between some proposals, in part because they range in specificity. For example, proposals to “reduce material use” and “reduce consumption” are very similar, yet subtly different. Material use is a fairly specific term with physical connotations, while consumption is a more abstract concept. Reducing consumption probably implies reducing material use, but it might also imply reducing other things, like spending.

The degrowth literature would benefit from authors adding more detail to the proposals endorsed, to avoid unclear messages and to limit the range of proposals. When constructing policy it is crucial to clearly define the objective of the proposal and which concrete environmental or social issue it aims to address. If this is not done, then there is the danger that degrowth proposals will remain ambiguous and confusing in the context of policy debates, an issue raised by van den Bergh (2011). The work of Videira et al. (2014) is a great effort to untangle this problem of the unclear objectives of some degrowth proposals by constructing a systemic approach to degrowth proposals using participatory systems thinking tools.

More generally, there is a need to look at degrowth proposals as components of a strategy, and not just individually. Here, it is argued that it is important to analyse the combination of proposals put forward to attain specific degrowth goals (the degrowth policy mix), and explore the interactions between proposals to determine which ones complement each other, which are potentially conflicting, and which may be redundant.

Returning to the example of reducing working hours discussed above, it is not enough to reform institutions to achieve this objective, there is also a need to encourage behavioural change towards less consumption (Dietz and O'Neill, 2013), so that a reduction in paid working time does not simply lead to greater consumption during leisure.

The fourth and final message is that there are some neglected issues that could be further addressed by degrowth authors, namely population growth and the implications of degrowth for developing countries. The exponential growth of population exerts great environmental and social pressure (Alcott, 2012). During the analysis, a search for proposals related to population growth was performed, since it is cited by some degrowth authors as a problem (Levallois, 2010; Schneider et al., 2010). However, the only concrete proposal found was to voluntarily control population (Videira et al., 2014), which was categorised as a proposal for voluntary downshifting. Martínez-Alier (2009) and Schneider et al. (2010) both argue that a degrowth transition would be helped if the human population would peak at around 8 billion, and then decline somewhat, while Kerschner (2010) argues that population must inevitably decrease or be stabilised if the economy is to degrow or be stabilised, respectively. Here, it is argued that compassionate and non-coercive proposals to stabilise population should be explored more actively by proponents of degrowth. Such proposals include achieving equal rights for women, providing education about family planning, ensuring access to contraceptives, and above all, promoting public debate about this controversial topic (Dietz and O'Neill, 2013).

Another important but neglected issue is what degrowth means for developing countries. The need to pursue sustainable degrowth is often justified in terms of freeing up ecological space to allow development in poorer countries (Martínez-Alier, 2009; Research & Degrowth, 2010; Schneider et al., 2010). However, little is said about what this development would entail. This issue is important since the Global South is where the majority of the world population lives, and as the middle class increases, consumption increases. This analysis identified only one article, by Xue et al. (2012), that deals explicitly with degrowth in a developing country context. The authors propose that developing countries such as China should build a long-term non-growth strategy to be

pursued after the initial period of economic growth needed to raise quality of life has been completed. Although the degrowth literature should avoid creating hegemonic proposals for degrowth in the Global South, it should further explore the connection between degrowth goals and existing movements that follow similar ways of thinking. Examples of different types of development models include the South American term *Buen Vivir* (Gudynas, 2015) and the African philosophy of *Ubuntu* (Ramose, 2015). Although these references provide a good starting point, more work is needed to build specific proposals for developing countries and open a more global debate on the issue.

3.4.3. LIMITATIONS OF THE ANALYSIS AND FUTURE RESEARCH

This analysis has some limitations that are worth noting and discussing. First, it has only included English-language journal articles. In the context of the degrowth literature, this decision leaves out debates on the subject in other languages, particularly in French, Spanish and German. Although books were included in the broader discussion of degrowth, they were not included in the QCA, as the goal of this research was to assess only a subset of degrowth proposals that are more connected with policy, and therefore only peer-reviewed academic literature was considered. This introduces a bias towards academic literature as it excludes non-academic sources of knowledge. The results reported here could be expanded in future by adding an analysis of articles in other languages, as well as books and conference proceedings about degrowth, since these include many proposals from grassroots movements that may or may not exist in peer-reviewed articles.

Second, the selection of the words *policy*, *instruments*, and *measures* has the potential to introduce a source of bias into the classification of the type of approach used in the proposals (i.e. top-down versus bottom-up). Since these terms are generally associated with top-down methods, they could lead to a selection bias in the form of top-down proposals. This limitation was addressed by performing a context analysis of the paragraphs in which these words were found, to ensure that the selection was not only relying on the chosen words.

Third, the use of qualitative research methods is not value-free, as it requires a necessary subjective categorisation process, based on the knowledge and experience of

the researcher. This process was complicated by the fact that many degrowth proposals have a broad scope, and have the potential to generate diverse outcomes. An example is the proposal related to house-sharing, as this proposal has environmental benefits (e.g. reducing consumption) as well as social benefits (e.g. increasing free time by sharing tasks). The issue of scope was approached by selecting only the major impact that the proposal would have, according to the context where the author cited it. Some proposals are also rather vague, as in the case of the promotion of a frugal lifestyle. The implications of this proposal depend on one's interpretation of the word "frugal". These more abstract proposals were still included in our analysis to be as inclusive as possible, but the uncertainty they introduce is a limitation.

Moreover, the categorisation into top-down and bottom-up proposals may be contested, since the concepts have a certain degree of fuzziness that has to be acknowledged. For instance, in the context of public decision-making, there is the possibility that a top-down proposal could be implemented because of strong public pressure, which introduces uncertainty into the categorisation process. More work needs to be done on how various proposals could best be implemented.

To help reduce uncertainty in future research, it would be useful to analyse the degrowth policy proposals in collaboration with a group of stakeholders. Such a project would allow advocates of degrowth to: (i) understand the main points of weakness of the proposals; (ii) have more accountability in the categorisation; (iii) discuss concrete proposals for more subjective issues (e.g. promoting frugal lifestyles); and (iv) discuss potential concretisations of vague proposals.

Finally, future work on degrowth should aim to explore the seeming contradiction between the bottom-up discourse and top-down policy proposals. It is also important to address the issue of how to plan for degrowth in emerging economies, so that they can avoid at least some of the mistakes already made in developed countries.

3.5. MAIN CONCLUSIONS

This chapter contributes to answer three research questions: (i) What does the sustainable degrowth perspective mean in a policy-making context? (ii) How do

degrowth goals align with ecological economics policy objectives? (iii) What are the main types of approaches embedded in degrowth proposals? To answer these questions, a group of 128 peer-reviewed articles that mention degrowth was analysed, which was then narrowed down to a group of 54 articles that make specific proposals for how to achieve degrowth. To our knowledge, this analysis represents the largest systematic review of the degrowth literature to date. This analysis is a contribution to understand degrowth in academic peer-reviewed articles by providing a new way of defining degrowth, through the review, organization and analysis of academic proposals for action. This article also opens avenues for future research on the field, that include continuing the discussion on democratic paths to degrowth and how to integrate degrowth proposals in order to find a balanced policy mix.

The main findings of this research are that: (1) although degrowth is often described as a bottom-up local process, the proposals are largely top-down with a national focus; (2) social equity is at least as important in the degrowth proposals as environmental sustainability; (3) there are some degrowth proposals that would benefit from additional clarification and specification; and (4) the implications of degrowth for developing nations, and the issue of population growth, are neglected in the degrowth discourse and should be explored further.

Different authors have attempted to describe degrowth from different starting points. Here, degrowth is described based on the proposals put forward for its implementation. In this context, degrowth may be understood as a process where material and energy consumption are reduced, and where incentives are created to encourage more local production. Exchange in a degrowth society would be facilitated by local currencies and non-monetary systems, with strong powers given to the state to redistribute income and wealth and provide public services. People living in a degrowth society would work shorter hours in paid employment, share jobs in many cases, and lead more frugal lifestyles overall. Although economic activity would be more localised in a degrowth society, the state would have an important role both to limit material and energy use and redistribute income and wealth.

If sustainable degrowth is to occur, however, then the relationship between bottom-up initiatives and top-down government action must be better understood.

Also, there is a need to explore further how to foster democracy in the process of creating and implementing proposals. Degrowth proposals can complement each other, be conflicting, or even be redundant. It is therefore important to analyse which proposals may be translated into policy instruments, and in which sequence they should be implemented. The development of a degrowth policy mix is needed to encourage the beneficial interaction of complementary proposals and minimise the negative effects of those that may conflict.

4. EXPLORING THE RELATIONSHIP BETWEEN DEEPENING DEMOCRACY IN POLICY-MAKING PROCESSES AND ENHANCING A DEGROWTH TRANSITION TO SUSTAINABILITY: SCOPING INTERVIEWS WITH DEGROWTH EXPERTS

4.1. INTRODUCTION

Debates point to a need for a stronger state intervention in a degrowth transition (Cosme et al., 2017; Weiss and Cattaneo, 2017), but for Kallis and Martínez-Alier (2010, p. 1573), “there is no choice between the environment and democracy; sustainable degrowth should be a democratic process of transition or nothing at all”. Exploring how to foster more autonomous, empowered individuals in the representative democratic systems is key to understand how a degrowth transition to sustainability can occur in its idealized voluntary way (Asara et al., 2015). For authors such as Castoriadis (1998), a society composed by individuals that accept and live well with voluntarily putting limits to their actions is only achieved with critical thinking and empowerment, so that people start believing that they have capabilities to actively engage in the political debate about their common future.

It is crucial to continue the discussion of the relationship between democracy and degrowth, already initiated by authors such as Boillat et al. (2012), Deriu (2012), and Xue et al. (2012). Deriu (2012) discusses the connection between degrowth and democracy, claiming that these two projects are not immediately and necessarily linked from the top. The author suggests that centralised planning power can be replaced with a “broader and articulated process of shared learning, self-education, reconstruction of social ties and collective transformation” (2012, p. 560) and that the degrowth movement can be a way to rediscover the epistemological and theoretical grounds of democracy.

This chapter explores the following research question: How does the democratization of policy-making processes can influence a degrowth transition? For answering this question, several issues were addressed, namely: if a democratic degrowth transition can be a planned event; what is a possible articulation between democracy and efficacy in environmental policy-making having in mind degrowth

movement's goals; what are the main challenges when articulating various sources of knowledge (technical, scientific, common) for creating policy aimed at behaviour change; practical examples of governance models that could facilitate the democratization and legitimacy of policy processes that address complex interlinked issues.

To form a better view of the relationship between democracy and degrowth, literature on environmental governance was reviewed and the results were used as a basis to develop an interview script. We performed semi-structured interviews with degrowth scholars to test some hypothesis for research (developed based on previous knowledge and research gaps), to understand how to better articulate degrowth proposals with practical actions and to accommodate some limitations of the literature review done in Chapter 2 (e.g. the focus on only academic literature written in English). This chapter presents the results from the scoping interviews and has the function to add a different kind of knowledge to the academic information gathered about degrowth in the previous chapter.

This chapter is structured as follows. Section 4.2 presents a brief literature review focused on environmental governance. In section 4.3 the methods followed to perform the scoping interviews are described. In section 4.4 there is an overview and discussion of the main insights from the interviews. Section 4.5 wraps-up the chapter by summarizing some of the conclusions from this work.

4.2. DEGROWTH AND DEMOCRACY: WHAT IS THEIR CONNECTION?

In Chapter 3 it was discussed that although degrowth is commonly seen as a grassroots movement, when concretizing proposals for action, degrowth scholars tend to focus more on top-down measures. This occurs due to the difficulties on advocating a voluntary and democratic degrowth transition in a time of great social and ecological crisis that need to be addressed urgently. In this context, the analysis led to a challenge present in such a major transformation of society as the degrowth perspective proposes: how to make these profound changes without compromising democratic values, and even by deepening it?

Bearing a green political perspective in mind, the connection between democracy and sustainability is unclear. According to Ward (2008), liberal democracies should in theory perform better in terms of sustainability indicators, but empirical evidence is uncertain. The author claims that liberal democracies typically promote weak sustainability, since they boost investment in human and physical capital. This finding is supported by other studies (e.g. Lafferty, 2004; Wurster, 2013). For Lafferty (2004), liberal democracies are not adequate to the type of socio-economic transition needed to solve the major environmental challenges, since they were the ones that created the problem of unsustainable modes of production and consumption. These are the western countries that have a dominance of the capitalist regime and that pushed their ideals through globalization processes.

In his study, Wurster (2013) adds that evidences show that democracies are only superior to autocracies in their capability to solve limited environmental problems. This implies that these systems show significant difficulties in overcoming long-term environmental problems that only can be solved with major transformations in lifestyles and in the economic system. The author argues that democracies have difficulties in surpassing current stakeholders' interests in their decision-making processes (due to the short political cycles), which presents a barrier to move towards strong sustainability perspectives that consider long-term concerns. In spite of these findings, the author also has no evidence that an eco-dictatorship would in theory be superior in steering capacity to weak or strong sustainability perspectives. This lead us again to the work of Lafferty (2004), whom believes that the current democratic values, procedures and institutions are possible to adapt to the functional prerequisites of sustainable development.

Strunz and Bartkowski (2018) defend that the degrowth project (here considered as a radical approach to strong sustainability) is compatible with a liberal conception of democracy. These authors argue that instead of rejecting liberal democracy due to its shortcomings, degrowth proponents should learn from "the experience of past critiques of modernity by avoiding their major mistake – that is, (inadvertently) conflating a critique of modernity with a rejection of open society, and thus undermining its own emancipatory agenda" (Strunz and Bartkowski, 2018, p. 1159). In this context, the authors propose to consider the flaws of liberal democracy in the sense of the

“unfinished project of modernity” (Habermas, 1994 in Strunz and Bartkowski, 2018), taking liberal democracy as a manner of societal organization grounded on the principal of limited knowledge. According to the authors, this can be achieved partly by rejecting existentialist vocabularies (moral ‘truth’) and promoting new ones based on a free and open discourse, thus considered as never ‘finished’. Strunz and Bartkowski (2018) argue that the degrowth project can be created by promoting new vocabularies majorities, even with their own shortcomings (e.g. slow process of creating political majorities; danger of creating an excessive instrumental rationalism; pressure on current institutions to come up with alternatives).

A more practical approach to this adaptation of democratic forms was found in the work of Kronsell and Bäckstrand (2010). The authors categorize different combinations between forms (hierarchy, market, networks) and rationalities (administrative, economic, deliberative) of governance, summarized in Table 8. The forms and rationalities are combined to analyse specific modes of governance, as the authors define new modes as “multi-actor governance arrangements that rely on a mix of hierarchichal and non-hierarchical steering and collaboration between government, market and civil society actors” (Kronsell and Bäckstrand, 2010, p. 34).

According to Kronsell and Bäckstrand (2010), Box (1) represents the ‘old’ modes of governance, which are based on administrative rationality and hierarchical governance forms. Boxes (2), (3), (4) and (7) are what the authors consider the new modes of governance, typified by deliberative and economic rationalities and by market and network forms of governance. Boxes (5), (6), (8) and (9) refer to self-regulation and pure market or civil society governance. The authors explain that these modes are usually excluded in the literature, since usually the new modes of governance are defined by a mix of public and private actors, hierarchical and non-hierarchical steering.

These boxes help to shed light into the seeming controversy between top-down and bottom-up academic degrowth proposals. For example, in the configuration shown in box (4), the ‘shadow of hierarchy’ means that governments have shadow influence on self-organizing forms like the market by setting, or threatening to set, the rules for the operation of the market (Kronsell and Bäckstrand, 2010, p. 34). We argue that this can also be valid for self-organizing forms of the civil society, since governments can also

influence the activities of grassroots movements and collective organization by setting rules that promote or discourage them.

Table 8 Governance forms and rationalities (adapted from Kronsell and Bäckstrand, 2010)

Rationalities of governance Forms of governance	Administrative rationality	Economic rationality	Deliberative rationality
	(Delegated by politicians to experts and civil servants) Global/state system delegated via supranational institutions such as the EU	Governance is possible through price and contract mechanisms. Economic incentives change behaviour, contracts establish relations	Governance is possible through participation, communication, broadened knowledge and deliberation
Hierarchy (principal-agent relations)	(1) Administration/experts govern through chains of command via rules, legal norms, etc. Examples: 'Steering by objectives' - Traditional regulation, e.g. emission standards, permitting and licensing.	(2) Hierarchical forms influenced by economic rationality. Examples: - Eco-taxes; - Carbon taxing; - Labelling schemes.	(3) Hierarchical forms influenced by deliberative rationality. Examples: - Advisory boards; - Multi-stakeholder panels/consultation; - Citizen juries/panels.
Market (self-organizing)	(4) Market exists at the mercy of political will or the will of state/supranational institutions. 'In the shadow of hierarchy' Examples: 'trade and competition laws' - Regulated carbon market such as EU-ETS and CDM; - Public-private partnerships.	(5) Market works through price and trade mechanisms. Examples: - Voluntary carbon markets; - Self-regulation; - Certification; - Green consumption.	(6) People participate and communicate in self-organized ways. Examples: - Campaigns and protests; - Lifestyle choices; - Green consumerism.
Networks (interdependent actors)	(7) Network among experts, civil servants, politicians and elites. Examples: - Scientific and expert networks; - City to city networks.	(8) Network based on economic ties, interests, contracts. Examples: - Green technologies lobbies; - Industrial partnerships.	(9) Networks of participating citizens. Examples: - NGOs; - Social movements; - Environmental activists.

From this conceptual work, Kronsell and Bäckstrand (2010) developed a framework to analyse legitimacy issues of new modes of governance. The authors use a normative interpretation of legitimacy, which is derived from norms, values and principles of liberal democracy. They distinguish two types of legitimacy (based on Scharpf, 1999, 2006): input (or procedural) legitimacy and output legitimacy. Input legitimacy is related to a procedural logic and is based on the following question: "are policies and norms developed in a transparent, fair, inclusive and accountable manner?" (Kronsell and Bäckstrand, 2010, p. 39), being the participatory quality of the decision-making process a central issue. Output legitimacy is connected to a consequential logic,

collective problem-solving and effectiveness, and is based on the question: “do norms and institutions result in collective problem-solving and performance?” (Kronsell and Bäckstrand, 2010, p. 39). The authors claim that the overall legitimacy of governance rests on combining effective problem-solving (e.g. reducing negative environmental impacts) with fair, accountable, inclusive and transparent procedures.

The framework dimensions and how they can be assessed are summarized in Table 9. In terms of input legitimacy, the dimensions suggested by the authors are cumulative, meaning that the overall performance of the three dimensions dictates the quality of input legitimacy. In terms of output legitimacy, the prevalent approach in political science and environmental politics is to conceptualize effectiveness in terms of policy, institutional or compliance effectiveness, since the environmental impact of specific modes of governance is a complex issue to assess (Kronsell and Bäckstrand, 2010). This type of legitimacy have been neglected in favour of the input legitimacy in this field of research (Kronsell and Bäckstrand, 2010). This means that the four dimensions presented by the authors are alternatives to assess output legitimacy.

Table 9 Dimensions of input and output legitimacy (adapted from Kronsell and Bäckstrand, 2010)

Input legitimacy (procedural)	Participation/inclusion	Contributes to legitimacy by including actors affected by the collective decision-making. Scope and quality of participation are key aspects. - Scope: identifying relevant constituencies and stakeholders; assessing if key stakeholders are selected and represented in the policy process. - Quality: equality of opportunities to participate; phases of the policy process that include actors (agenda-setting, policy-making, implementation); assessing if participation is symbolic or real.
	Control/accountability	Accountability refers to the relation between an agent and a principal, implying that some actors have the right to hold other actors accountable. Contributes to legitimacy only if there are sanctions when actions or decisions are incompatible with the values and preferences of principals. Transparency and access to information is a precondition of accountability. Can be top-down hierarchical accountability or horizontal non-hierarchical (market, peer and reputational accountability).
	Deliberative quality	Contributes to legitimacy if barriers that limit participation are reduced and focus on how consensus can best be reached. Key questions are to what extent the deliberative process is open to competing discourses and arguments from citizens as well as elites, and how the process is conducted.
Output legitimacy (effectiveness)	Policy effectiveness	Contributes to legitimacy if the right mix of policies/programmes is in place to address the environmental problem.
	Institutional effectiveness	Contributes to legitimacy if the required institutions and resources are in place to reduce the problems.
	Compliance effectiveness	Contributes to legitimacy if states comply with rules, programmes and policies that they adopted.
	Environmental effectiveness	Contributes to legitimacy if, to a certain extent, a particular sets of rules, norms and institutions lead to an actual improvement in the state of the environment.

4.3. METHODS

We performed semi-structured interviews with degrowth scholars to test some hypothesis for research (developed based on previous knowledge and research gaps), to understand how to better articulate degrowth proposals with practical actions and to accommodate some limitations of the literature review done in Chapter 3, mainly to explore in a deeper way the seeming contradiction between the bottom-up discourse and top-down policy proposals.

The semi-structured interviews were the chosen method with the goal to do a scoping of important issues to deepen when trying to articulate the theoretical knowledge on proposals for degrowth interventions, the theoretical knowledge on deliberative new modes of governance, and the practical and academic experience of the selected degrowth scholars.

4.3.1. DEVELOPMENT OF THE INTERVIEW SCRIPT

The interview script (see Appendix I) is divided in four parts. The three first parts are related to general hypothesis and questions about how can a planned degrowth transition be more just and democratic, having the state has a central agent to promote it. The last part is focused on the hypothesis of Green Tax Reform processes be an instrument for concretizing a part of this transition.

The working hypothesis in questions 1, 2 and 3 arose from issues that the author decided to explore further from the work done previously. The working hypothesis were constructed by the author, based on previous knowledge on degrowth challenges, especially from the previous work already cited.

The dimensions used in questions 10 and 12 are based on the framework developed by Kronsell and Bäckstrand (2010). The concept of democratic quality of policy processes used in the research question is defined in this work by using the dimensions that constitute the framework developed by Kronsell and Bäckstrand (2010), which are the input legitimacy and output legitimacy.

This framework was chosen due to its potential to enrich this research, as it allows to envision a diverse set of strategies working in synergy to achieve the complex and interconnected goals of degrowth. The framework was used to provide specific

dimensions to the participants, so that they could assess which of them were more important for enriching the democracy-degrowth debate.

The governance modes presented in Table 8 are not exhaustive, as there are many other hybrid modes that try to combine the best aspects among the different rationalities (Kronsell and Bäckstrand, 2010). The authors raise an important question that we also consider crucial to the degrowth debate, which is that combination of different rationalities can create interesting synergies but they can also be conflicting. This resonates with the reflection that came from Chapter 3 about the importance to understand the interaction between degrowth proposals and their rationales.

As this chapter is focused on the role of the state, it was decided to create a question in the interviews script dedicated to a specific policy instrument. This was done to begin to open the path that is going to be further explored as a case study in Chapter 7. Among all the policy proposals that can be found in degrowth literature, the economic instruments (e.g. environmental taxes, subsidies, certificate trading) were chosen as the research object due to their high potential to induce massive behaviour change if designed and implemented with that goal. They are also important policy tools to explore the interconnectedness between bottom-up and top-down proposals in the context of a degrowth transition, since usually the agenda setting, design and implementation of economic instruments is done in a very top-down perspective and many times lacks proper monitoring of its effects.

The Green Tax Reform (GTR) process is being used as an illustration to explore this issue, having as a hypothesis that these processes can provide interesting tools to a radical socioecological transition. The rationale for this is that they have an inherent holistic view of sustainability, due to the range of issues that can be combined in a policy package and the interdisciplinary collaboration that must be developed to achieve the concretization of a GTR project. The dimensions used in question 15 are based on studies about the obstacles that have been identified for the unsuccessful cases of GTR in Europe (e.g. Withana, 2015).

4.3.2. SAMPLING OF PARTICIPANTS

The scholars invited to participate were all authors from articles used in the literature review presented in Chapter 3. They were a total of six, all members of the Research & Degrowth (Barcelona and France) research group. Four interviews were done in person and two interviews were done via Skype.

The interviews follow a non-probabilistic purposive sampling (Weisberg et al., 1996; Wolf et al., 2016). The major advantage of using this type of sampling are that it uses the best available information (Weisberg et al., 1996). The possible shortcomings of this type of sampling are the lack of estimates of accuracy and the possibility to miss important elements (Weisberg et al., 1996). These shortcomings are being minimized by reviewing literature on the subject but also by participating with this work in broader discussions (e.g. communications in scientific events). Future research can address these shortcomings by expanding the interviews to other groups of scholars and practitioners.

4.3.3. ANALYSIS OF THE INTERVIEWS

The interviews had the purpose of scoping issues for further discussion in this work. The number of interviews done was low, and thus it does not have the purpose to be representative of a specific group.

The participants were informed that the answers should be based on the respondents' opinion grounded on their experience, expertise and knowledge. The possibility of anonymity of the respondents and the confidentiality of recordings was assured by a consent form (see Appendix II). The recordings were used as a basis to transcribe parts of the interview and form responses to the questions asked gathering the opinions provided by all the participants.

4.4. RESULTS AND DISCUSSION OF FINDINGS

4.4.1. QUESTION 1: DEMOCRATIZATION OF POLICY DESIGN PROCESSES: DIFFERENT INTERACTIONS BETWEEN DECISION-MAKERS AND STAKEHOLDERS

The hypothesis explored in this question was the following: *Planning a democratic transition to a more ecological, convivial and participatory society needs different modes of designing policy, both due to path dependency issues and to social*

change goals. Having a collaborative setting in mind, especially with policies that have a national range, there are two great groups of stakeholders that should be addressed differently, to participate actively in a policy design process. The first group consists on specific experts (from the outside and/or inside the public administration institutions) for a given policy. The interaction between decision-makers and these experts might be one of direct collaboration in the policy design process, ideally occurring a power sharing of the final decision, thus this would not be an ordinary consultation group. The second group consists on the civil society in general, that will be affected in a positive or negative way by the given policy. The interaction with these stakeholders can occur in multiple manners, but due to its complexity, it might require different tools to facilitate the process (e.g. e-democracy tools). Besides having collaboration tools that allow a more direct power sharing in the processes, with this group it is important to establish a long-term commitment and relationship to increase their empowerment/autonomy (e.g. reforms in education systems, design of inclusive participation processes).

In a general overview, the participants were not very comfortable with this division of society in two general groups, since they found it too simplistic to translate reality. Civil society was pointed out as being too heterogeneous to argue for this artificial separation in two groups, although it was pointed out that we can explore some kind of divisions and representation levels for them. The split into two groups of stakeholders seems strange in a degrowth approach for some participants, since the general thinking is that there should be a broader and more sustained engagement of citizens, in which all citizens that want to be engaged have the power to make the type of decisions that lead to this transition.

While some participants gave practical ideas from processes in which they participated, others discussed if a degrowth transition could be planned at all. For instance, one of the participants argued that historically speaking these sorts of transitions/transformations tend to happen gradually (over a very long period of time) and they are not exactly planned or designed as I was trying to force with the hypothesis. The participant argued that they happen as a result of many processes, in which some parts are planned and some parts are not. This leads to the justification of why is limited to think that a transition can be planned, and that one should be cautious on how to

frame this transition. As an example, which helps to understand this statement, the participant talked about the United States civil rights movement, by picking up a story of how the rebellion of one person that had had enough of an unfair situation (unplanned action) led to a variety of things happening (arrests, protests, court actions, liberal journalists that wrote about these issues). With this, the participant wanted to emphasise how important unplanned elements are in social transformations.

If some planning is to occur, there are two different models to have in mind, which were more or less approached by different participants: one is a model where we continue to have a representative model of democracy, using the structures already in place, but performing some changes that would allow people to be more directly engaged in decision-making; another model would be to have a citizen-driven democracy, where people are engaged not only in the design of some interventions but engaged in a way in which they set the agenda of issues to be solved collectively, instead of being done only by the state.

About the question of who should be involved in the policy-making processes, and connecting with the different models described above, there would be different answers. However, one thing was more emphasised than others, and that was that it is not only about who should be involved in the policy-making process, i.e. not only having representatives of different people or groups of people but making sure that different discourses/viewpoints about an issue are put forward to debate. The different degrowth viewpoints recently reviewed by Weiss and Cattaneo (2017) can be a starting point to capture topics for agenda setting in a degrowth perspective.

Another idea was to create an institutional space in which legitimacy of the visions that are expressed are all protected and have the way to express themselves in the proper way. Then, the visions would be tested by experts through the production of numbers and facts to see their viability. These different scenarios that would illustrate the consequences of each vision would then be discussed again with everyone involved in the first step and a conclusion about which vision to pursue could be achieved this way. A major change in the system would occur, since a variety of people would be able to set the agenda for policy-making and also have the last saying after the scenarios are tested by experts on the different subjects.

Some practical challenges that arose from the participants' experiences were that there is a problem of scale of interactions between multiple levels of governance. As structural things are decided at a national level, it is difficult for local public authorities to have different socio-political models of decision-making. One participant considered that the main challenges are the weight that the big economic interests have in political processes and the fact that in most cases civil society actors are not very strong. It was argued that the vibrancy of civil society and the quality of the democracy in a country or region plays an important role in the transformation process. Another challenge mentioned was that citizens in representative democracies are not accustomed to participate in policy processes due to the structure of the system, and they have to learn again how to engage with the process. One of the participants also mentions that there is a widespread idea that only the experts are able to speak about different subjects, and this idea is already common sense. So, another challenge arises: how to change the common sense about who has the right to produce and set priorities in the political agenda? And how to avoid the risk of completely dismissing any kind of knowledge produced in a different context?

A more concrete perspective about how different agents enter and interact in the process was argued by some of the participants. One idea is that we need to have a movement that integrates at least the following three strategies to pursue societal transformations: groups that work with the government, opposition movements and groups that explore alternatives. In this way, we would have a gradual transformation: every time we have a little step that creates a positive change, it could be supported by policies or by actions of people or by alternatives.

4.4.2. QUESTION 2: ARTICULATION BETWEEN DEMOCRATIZATION OF PROCESS AND POLICY EFFICIENCY IN TERMS OF ENVIRONMENTAL PROTECTION AND TRANSITION TO SUSTAINABILITY

The hypothesis explored in this question was the following: *There is a seeming controversy between the urgency of intervention to tackle social and ecological crisis, and adjustment period institutions will need to have to change the way policy is designed. An inherent challenge appears in this context, which is how to articulate scientific, technical, political and common knowledge in the design of more democratic*

policies. Societal interests are very heterogeneous and often conflicting, not only between them but also with the scientific evidences that backup a certain policy. To this we must add the technical and political challenges that policy design faces. An articulation of these types of knowledge does not have to give the same weight to them, but deliberation processes at the scale discussed here are very costly, need time and usually very challenging, if not impossible.

The general perception was that the participants somewhat agreed that some urgent measures require action from a top-down approach, and can be acceptable in a democratic degrowth transition, when common good is at stake. When facing issues where we have the scientific knowledge to make a decision that will be beneficial for the common good (e.g. taking measures to decrease air pollution in a city), politicians should make that decision, even if it is going to upset people that are not seeing the problem. According to one of the participants, the role of state here might be “to be brave enough to acknowledge that we collectively reached our limits and to do more radical policies to protect common good, even if they are not popular”. This has the fragility on being dependent on the degree of urgency of a certain intervention, and how to assess that is an issue of debate itself. Another participant argues that state should be an enforcer of people’s ideas and not an enabler/facilitator, since the governmental organizations are not neutral. The idea is to first create a different kind of common sense in the civil society and the means for people to be more engaged with the policy processes. Then the state would only have to enforce the ideas that were already circulating inside the society.

About the urgency of tackling some environmental issues, one participant has illustrated the question in the following way: *“If the building is on fire and someone sees that the building is on fire and everyone in there doesn’t see the fire, you have to act in a very top-down way, even if you don’t want to. Because we are collectively part of this box (...) and there are not so many options to the model, still our level of consciousness isn’t so high, and so we have to collectively establish ourselves limits. (...) If we are not able to put it on ourselves, I think it would be good if we push for these limits. And of course, we would still provide some sort of mechanism to provide feedback and to discuss it. (...) I would push for a measure that you’d call ‘good for all’, especially for the long-*

term, but provide spaces for discussions, spaces where concerns could be expressed and discussed. For example, implement a measure to reduce car traffic but, and simultaneously with that, create spaces where the different opinions would be heard (...) to understand how this measure is impacting people, how it could be improved, what were people's experiences. For me it is a kind of combining top-down with bottom-up. And providing the space for revoking this measure if it is necessary."

A possible solution, according to this participant, might be to have governance mechanisms that allow that a public decision could be revoked if it is not responding to the initial goals (e.g. closing streets to improve air quality). This could be giving a trial period to the intervention of 2 or 3 years, to understand if it is working, monitor it and going back with results to talk to people and understand their concerns. Having in mind that these processes always need facilitators to be feasible, an army of facilitators would be necessary for policies at a national level, according to the participant's opinion.

Another participant disagreed with this urgency argument, claiming that we should avoid creating an "Emergency-ocracy", i.e. a democratic arrangement around the discourse of emergency. For this participant, this urgency/catastrophe argumentation can deteriorate democracy and democratic procedures and thus should be avoided. An alternative to this discourse is promoting a collective setting of the priorities to address and then articulate the ecological concerns inside the very problematic concern of many people. An example of this would be that if people collectively consider a priority to have shelter, then we should try to give people a dignified shelter and make sure that this shelter is built in a sustainable way.

Another issue also addressed in the interviews was if and how to filter and/or articulate the different types of knowledge pointed out in the working hypothesis (scientific, technical and common knowledges). Power structures were pointed out as a crucial dimension to be aware of when designing more democratic policy processes, because they can obstruct them to work properly. The opinions were a bit divergent between participants in this point, but different possible solutions appeared, such as: changing the design of deliberative forums, so that everyone has an equal voice; arguing that every time you do those forums, decisions should be incorporated in policy; organizing deliberation forums that put together people with alternative ontological

paradigms about some issue. Also, it was pointed out that in an inclusive democracy, policy-making processes must include corporations, not only citizens. So the questions that arose was how to do a balance between the interests? And how to establish some limits to negotiate things? An example gave by one of the participants was to first create a set/chart of non-negotiable issues (e.g. human rights violations), or common minimums.

Other participants had a slightly different opinion on the matter, quoting one of them: *“very well designed collective processes are very effective in results and do not take that much time. The technical filtering might not be a problem since there will always be people that find something to be impossible to change. A technical filter can be very conservative and inflexible, since it can lead to a point where someone decides that some intervention cannot be done at a certain point because of present constraints. But the thing is that those constraints can be changed. The idea here is to define what we want to change and design the steps needed to be taken for that to happen to reduce the constraints. To avoid the conservative filter, we put people working on the narrative of change, to get their feedback and change the proposal from that. But a technical filter is always going to be part of the process, but not like a barrier, more like a point where you need to go take a step back and understand how to surpass the challenges of a certain policy.”* What this participant called “narratives of change” consist on collectively building which type of future we want to achieve, where interventions would be a second step that would be much more accepted socially since every intervention would have a clear purpose to achieve that envisioned common future. It was also pointed out an important thing for this matter, which is that “a transformation would be for us to have time to participate in decisions regarding the commons on a weekly basis (..), to have the potential to lead to a really transformative path, not a once-in-a-lifetime participation in some deliberative process”.

Another interesting insight was that in some cases (giving the example of a big construction project in which one of the participants had been involved in the past), governance mechanisms such as public hearings can be beneficial to slow down projects from happening. The participant explained that it took time to hear all parties involved in that specific complex construction project, which allowed other alternatives to be

discussed and a longer discussion of impacts of the option in public discussion. However, this slowness can be harmful when you do not want to be discussing for decades, for instance, energy transitions to more sustainable sources. It was also pointed out the dangers of deliberative democracy to have in mind, for instance the slowness of change or even the maintenance of the status quo by having consensual agreements about the future, especially in global governance processes (e.g. climate change agreements). However, this participant argues that time is not really a constraint in fostering a more deliberative democracy, since when powerful lobbying exists towards a certain issue, negotiations with them always take time before policy is released.

Solutions for the time constraints of deliberation processes were presented, such as having innovative manners of participation and, in the case of national level policies, good networks in place along the territory, that can articulate the issues of different regions and discuss them in a common structure.

4.4.3. QUESTION 3: TRANSITION-PATH – HOW TO ARTICULATE BETWEEN EARLIER AND LATER OUTCOMES OF POLICY INTERVENTIONS?

The hypothesis explored in this question was the following: *Degrowth's project for decolonizing the imaginary of growth can be considered a later outcome of policy interventions in the present. This is essentially what Serge Latouche (2009) argues when he defends the "eight Rs of degrowth": Reevaluate (shift values); Reconceptualize (e.g., wealth vs. poverty or scarcity vs. abundance); Restructure production beyond capitalism; Redistribute between North and South and within countries; Relocalize the economy; and Reduce, Recycle, and Reuse resources. A transition to such a different society should be facilitated not only by policy reforms, but also by reforms on how success of a certain intervention is assessed. This means that the success of a certain process cannot be assessed only by the later outcomes but firstly by the earlier outcomes it has. An example would be to understand if a certain intervention, such as creating decision-making commissions with an integrated governance approach, would lead to an increase in efficiency of certain policies in the short-term, and to a change in social values towards participation in the long-term.*

In a general overview, all the participants were somewhat comfortable with this hypothesis, since they all acknowledge the importance of having short and long-term goals. Here again, the issue of the unevenness of impacts of certain policies on people re-emerged, as well as the suggestion of having spaces of dialogue where people could at earlier stages of policy implementation express their thoughts and concerns about those impacts. One of the participant argues the need to understand better what are earlier outcomes in a degrowth transition, and that these earlier outcomes have the danger of becoming ways of cancelling policy too soon since it may not be working, despite understanding the idea of the author to never use these earlier outcomes separated from the later outcomes, and therefore one should outweigh earlier outcomes in some interventions that usually take much time to change (e.g. reforms in education systems). The participant gave the idea to use earlier outcomes as proxies to assess if a policy mix is being successful or not (e.g. advertising can be banned in the streets but not on the internet, so when measuring earlier outcomes of consumer indicators might lead us to think about other interventions needed to be done in parallel to achieve the later outcome of consuming less). Another participant also connects with this idea, suggesting that the process of participation should be iterative, i.e. not stopping when the policy is designed. People should also assess and control how the implementation of the policy is going and having the opportunity to discuss what can be improved.

Two participants brought up the subject of the role of the state in many times preventing sustainable small grassroots initiatives from thriving, due to being sometimes shadowed with legal constraints. For these participants, the state should have the role not to interfere too much with these initiatives and maybe considering making policy to protect them. This insight can be illustrated by this quote from one of the participants: *“There is a type of biodiversity of little flowers in the gardens that we could allow to grow and try not to through shadow on them and maybe try to create a protective fence around them”*.

This can be related to the working hypothesis in study as the public organisms often do not see the earlier outcomes of some initiatives and wait for the later outcomes to appear, such as for instance some community-based initiatives of organic farming or

permaculture inspiring other people to grow their own food, or even to start cooperatives that enhance the resilience and autonomy of a certain region. In parallel, initiatives of this kind may have an educational role for the community and allow to localize the production and consumption of food.

At least two participants shared the concern that certain type of good practices that are made at the grassroots level were pushed to a big scale, in a top-down way. This sometimes have disadvantages such as losing the initiatives' spirit and their conversion to another type of thing or even having a blocking effect on them. This shows the importance of exploring further how to do a mixture of top-down and bottom-up initiatives. Maybe we should think of this interaction between state and community-based initiatives by doing an analysis on up to what extent and which type of decisions could be left to communities.

As for the concrete questions (see Figure 5), the numbers are not to be interpreted as representative but as a scoping exercise of which governance dimensions the interviewees considered to be most important to promote a degrowth transition. The general overview of the results shows that almost none of the dimensions were ranked as 'Less important' nor 'Somewhat important', what shows that the interviewees considered in general the dimensions to be important to or indifferent in some cases to the transition process.

The most important dimensions that can be retrieved from these preliminary results, and can be until a certain extent confirmed by the answers in the open questions, were: (i) the fact that the stakeholders know their participation in a process will have an influence on the final decision; (ii) the acceptance of counterarguments to decisions by the policy-makers, which can be linked to the importance given to the feedback governance mechanisms; (iii) the openness to competing discourses and arguments from citizens as well as elites, also an issue debated by the participants in terms of balancing the different voices in deliberative processes; and (iv) having the relevant institutions and resources in place to reduce the problems. Other dimensions were considered important, although slightly less than the former (diversity of institutions involved in the process; format and timing of public participation; transparency of the process; access to information; reducing barriers to participation;

and having the right mix of policies/programs in place to address the environmental problem). Some dimensions varied a lot from neutral to most important, which might be interpreted as divergent opinions or lack of clarity by the interviewer to explain what the dimensions meant.

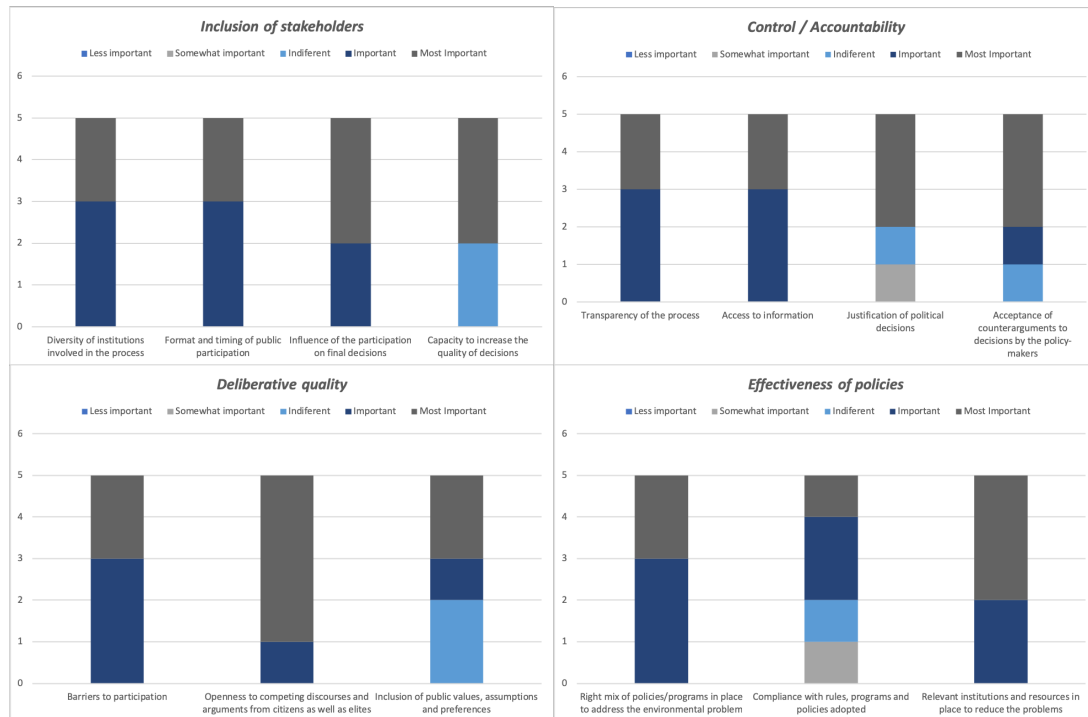


Figure 5 Results from Questions 10 and 12.

When asked about other dimensions that might be missing in the framework used, participants added the importance of emotional support during deliberative processes of policy-making. Quoting one of the participants, the “care for emotional aspects associated with deliberation processes (feelings such as being hurt in the process of discussion, unheard or disempowered)”, the participant gave the suggestion of having emotional support provided by organizers of deliberative meetings, that could be a group of independent observers of the process, and making sure that participants are comfortable and express their voice, that their deepest concerns are being heard, especially in points of conflict: what is behind the concerns of people? what is really behind the layers of resistance to a measure? The participant emphasised the need to connect on a basic level with people to really understand why they are willing or unwilling to change behaviours. This can be a deeper issue of higher relevance inside the dimension of “Format and timing of public participation”.

It was also pointed out that in these processes we need to assure: that impacted people (by a decision or by the phenomenon this decision is trying to act upon) have their voices heard, which can be an issue inside the dimension “Diversification of institutions involved in the process”; the concerns about the capacity of people to participate (inequality in participation due to issues of status, privilege), which can be an issue inside the dimension “Barriers to participation”; there are spaces of dialogue/discussions, where different concerns could be expressed freely, which also can be a contribution to the dimensions of “Openness to competing discourses and arguments from citizens as well as elites”; and spaces to revoke or improve decisions already made, which can be a contribution to the dimension of “Influence of participation on final decision”. Still in this dimension, other participant pointed out that it is very important for the engagement of people to be transparent about how their inputs will be used and not create false expectations, that lead to losing trust.

Referring to the dimension of “Having the right institutions and resources in place to reduce environmental problems”, it was also mentioned that there should be exist a mix of institutions in place to discuss how we do education, how we do production, how we do energy, and not only around a specific problem.

It was also mentioned that political party structures are outdated, as they outcast diversity and innovation, what suggests that a deeper change was needed to the political party system in a context of these complex socioecological transitions. One other suggestion was to use institutional change as a proxy for the assessment of a policy, since we are not able to set a true goal for a degrowth transition. Instead, it was argued that the necessary transformation is in the way we organize our social system, and thus the transformation of the current institutions could serve as a proxy for assessing a degrowth transition.

4.4.4. QUESTION 4: ECONOMIC INSTRUMENTS DESIGNED FOR A DEGROWTH TRANSITION TO A POST-GROWTH SOCIETY – THE POTENTIAL OF GREEN TAX REFORM (GTR) INSIDE A DEGROWTH POLICY MIX

The hypothesis explored in this question was the following: *Economic instruments, when designed accordingly, have great potential to change consumer/producer behaviours. GTR, as a process, can be an interesting tool to design those instruments in a holistic view of sustainability, due to the range of things that can be combined. Moreover, it has the potential to be designed following the principal of fiscal neutrality, what is beneficial to move from income taxes to taxing environmental bads or incentivizing through taxation or removal of subsidies a more sustainable behaviour. As these kinds of reforms are usually projected by experts and subject to public consultation processes, there is a huge potential to increase democracy in their design. Although GTR is usually aligned with a Green Growth perspective, its goals and proposals in the Portuguese case align well with degrowth goals, and so there is a great potential of recapturing this reform with a degrowth perspective in mind.*

In a general overview, all the participants were comfortable with this hypothesis, since they all acknowledge the potential of some economic instruments in certain aspects of environmental policy-making. These might be accepted as top-down instruments to reduce income taxes, taxing environmental harmful activities or incentivizing more sustainable behaviours.

Some insights can be taken from the interviews that can feed further research on the subject. It was suggested that there are interesting economic instruments, but it depends on how you use the tax revenues. To reduce income taxes in these GTR processes, you have to follow the fiscal neutrality method, since the government uses the new taxes to finance the revenue loss from lowering income taxes. It was pointed out that it might be more interesting in a socioecological transition to use those revenues to social or environmental protection measures. This is an interesting point, also because from practical experiences on GTR, the fiscal neutrality principle is very hard to achieve and even harder to monitor and maintain. This participant also pointed out that “it is important to keep in mind that behaviours are not only changed by using money. Values sometimes do not pass through money. Deep entrenched values are

unrelated to money. And taxing things can provoke a counteracting behaviour; the rational changes to 'as long as people pay more [due to taxes], they can continue having the "bad" behaviour'. Another participant goes in the same line, stating that behaviour does not change only by "nudging" (and economic instruments follow that rational). This participant argued that this change "it's a deeper process of reflection and social mobilization and participation in more grassroots individual level actions. Behaviour does not change on a top-down way. When designing a top-down policy for changing behaviours it's important to have this in mind, that it's a deeper process", and the economic instrument is only a mechanism inside a bigger puzzle. Also, one participant added to this discussion that policy instruments in general cannot be understood in an isolated manner, and reinforced that the most important thing to have in mind is the construction of the "narratives of change", without which every policy becomes unacceptable for someone or some group.

As for the concrete questions (see Figure 6), the numbers are again not to be interpreted as representative but as a scoping exercise of which dimensions the interviewees considered to be most important when using economic instruments, such as the GTR, to promote a degrowth transition. For the participants, the most important contextual dimensions that might affect the success of a GTR process goals were people's distrust on revenues investment and the plurality of expertise when designing the process. The social acceptance of the environmental problems addressed by the reform was also seen as important, as well as giving previous information about impacts of policy instruments to be implemented. The credibility of GTR proponents had different reactions, the participants did not agree on a degree of importance of this dimension.

Other dimensions that were suggested to add were: a social learning dimension, which would be useful to understand what were the changes after the implementation of measures and what have people learned with the process - this would complement the social acceptance dimension; and a participatory dimension, which was important to assess if civil society actors have a say on the policies or if all the process is left to the experts.

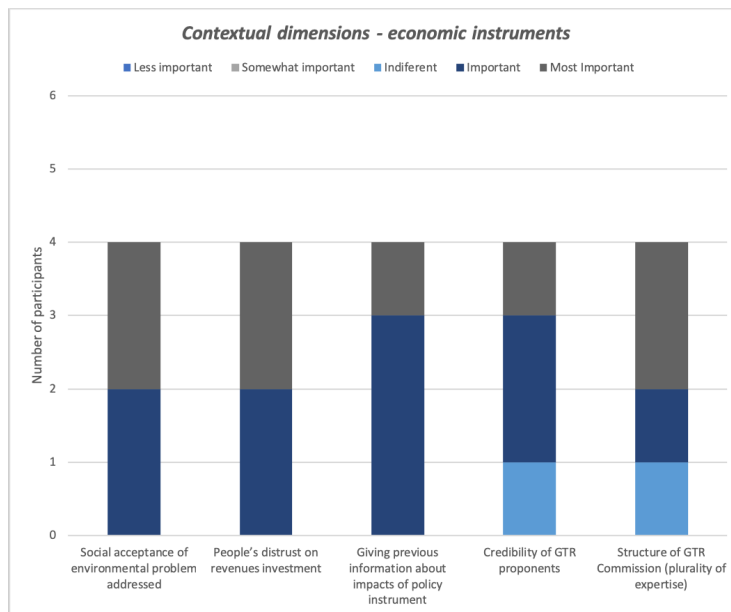


Figure 6 Results from question 15.

Two of the participants did not answer to this ranking. One of the justifications was that although acknowledging the importance of the dimensions presented, the participant did not agree with the ranking exercise as it was forcing the view of the GTR tools isolated, what was oversimplifying the process of behaviour change. The other justification was that it was too complex to rank such vague criteria.

4.5. MAIN CONCLUSIONS

The interviews were initially designed to do a scoping on what are the main dimensions we should be looking at when designing policies for a democratic degrowth/post-growth transition, and the main challenges of this transition. However, they also allowed to explore what might be the role of the state and the role of civil society in this transition. This helped to structure the rest of the work.

The group of scholars interviewed managed to give some viewpoints on how they envision a degrowth transition, what can be its main challenges, and what is the link between those challenges and the general challenges for socioecological transformation processes. The key ideas that came up in the interviews were that: (1) it is not linear how a socioecological transition as radical as the degrowth approach will occur, so we cannot only count on state interventions to achieve it; (2) top-down public policy might be acceptable in a degrowth perspective for certain issues that are very

urgent to solve and be seen in a centralized way (e.g. complex sustainability issues such as climate change mitigation measures that might require national and international level agreements and interventions); (3) probably this transition will not occur in a planned and always democratic way, as it implies such a deep transformation in social values and behaviours that it will probably be a gradual transition led by a multitude of actors at different scales in parallel; (4) it is important to accept at a state level that the democratization of policy-making processes is always a process of trial and error, and multiple ways of public engagement have to be tested and systems have to be in place for people to provide feedback to always improve the methods used; (5) even interviewing only a small group of degrowth experts, there is a certain degree of disagreement on how a deep socioecological transformation should be occurring, mainly on how reformist or radical this transformation is taking place; and (6) the participants see the role of economic instruments as very limited, and that only make sense if integrated in an approach that considers other dimensions that contribute to behaviour change.

PART II. FROM UNDEFINED SUSTAINABILITY
TRANSITIONS TO DEGROWTH-FOCUSED TRANSITIONS: AN
EXPLORATORY STUDY FOR PLANNING STRATEGIC ACTION

5. EMBRACING DEGROWTH AS A RADICAL VISION FOR SUSTAINABILITY TRANSITIONS

5.1. TRANSITION STUDIES AND THEORIES

Sustainability transitions can be conceptualized by being “long-term, multi-dimensional, and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption” (Markard et al., 2012, p. 956). Socio-technical systems are defined by being “the linkages between elements necessary to fulfil societal functions (e.g. transport, communication, nutrition)” (Geels, 2004, p. 900). Shifts in socio-technical systems include changes in technologies, markets, policy, user practices and cultural values (Geels, 2004). This entails that transitions are non-linear, evolutionary processes but that require “multiple, interdependent developments” (Köhler et al., 2019, p. 3)

In this work we argue that degrowth can be seen as a radical vision for a sustainability transition, as this perspective entails a set of processes that aim to provoke key changes in the current socio-technical systems. To understand how the degrowth vision can be translated into actions that will contribute to major system changes, it is important to first dive into transition studies and understand the most relevant concepts and theories in the research field. Before describing the theories, it is important to clarify the concepts of socio-technical regime, niche and landscape.

The socio-technical regime refers to rules, a set of commands, requirements, roles and practices, which are well established and thus difficult to dissolve (Kemp et al., 1998). The main idea behind a regime is that it inflicts a reasoning and direction for incremental change in socio-technical systems, a notion that is important to address what leads to the destabilization of existing regimes and the emergence of new ones (Markard et al., 2012).

The niches are defined as being “protected spaces, i.e. specific markets or application domains, in which radical innovation can develop without being subject to the selection pressure of the prevailing regime” (Markard et al., 2012). The niches are

important in the emergence of novelties that can gain momentum and eventually compete with established technologies (Markard et al., 2012).

The socio-technical landscape is defined by being the “exogenous environment beyond the direct influence of niche and regime actors (macro-economics, deep cultural patterns, macro-political developments)” (Geels and Schot, 2007, p. 400).

There are four main currents in transition studies, which are: Strategic Niche Management (SMM), Transition Management (TM), Technological Innovation Systems (TIS) and Multi-level Perspective (MLP) on socio-technical transitions. SMM is the deliberate creation and management of protected spaces where niches can be developed and experimented, to analyse if it is desirable to pursue them and to provide the conditions for their maturation (Rip et al., 1998). TM is an integrative and multi-scale framework that combines bottom-up and top-down approaches seeking to influence in a practice-oriented way the ongoing transitions into more sustainable directions (Kemp et al., 2007; Markard et al., 2012). TIS is a framework that focuses more specifically the emergence of new technologies and the institutional and organizational changes that have to occur alongside technological development (Markard et al., 2012).

Finally, the MLP framework is composed by three levels: niches, socio-technical regimes and socio-technical landscapes. MLP explains the occurrence of a transition from one socio-technical regime to another by observing the interactions between the three levels. First, niche-innovations gain momentum through internal processes of development, improvement and support from powerful groups (Geels and Schot, 2007). At the same time there are changes at the landscape level that pressure the regime, and finally it occurs the destabilization of the regime, creating opportunities for niche-innovations to penetrate and compete with the mainstream (Geels and Schot, 2007). Figure 7 shows the interactions that occur between all the levels in detail.

As explained by the MLP, the socio-technical transitions do not happen easily, since there are lock-in mechanisms that maintain the systems (e.g. energy, transport, housing, agri-food) stable (Geels, 2010). This so-called path dependency is connected to sunk investments, behaviour patterns, vested interests, infrastructure, favourable subsidies and regulation (Geels, 2010).

Increasing structuration
of activities in local practices

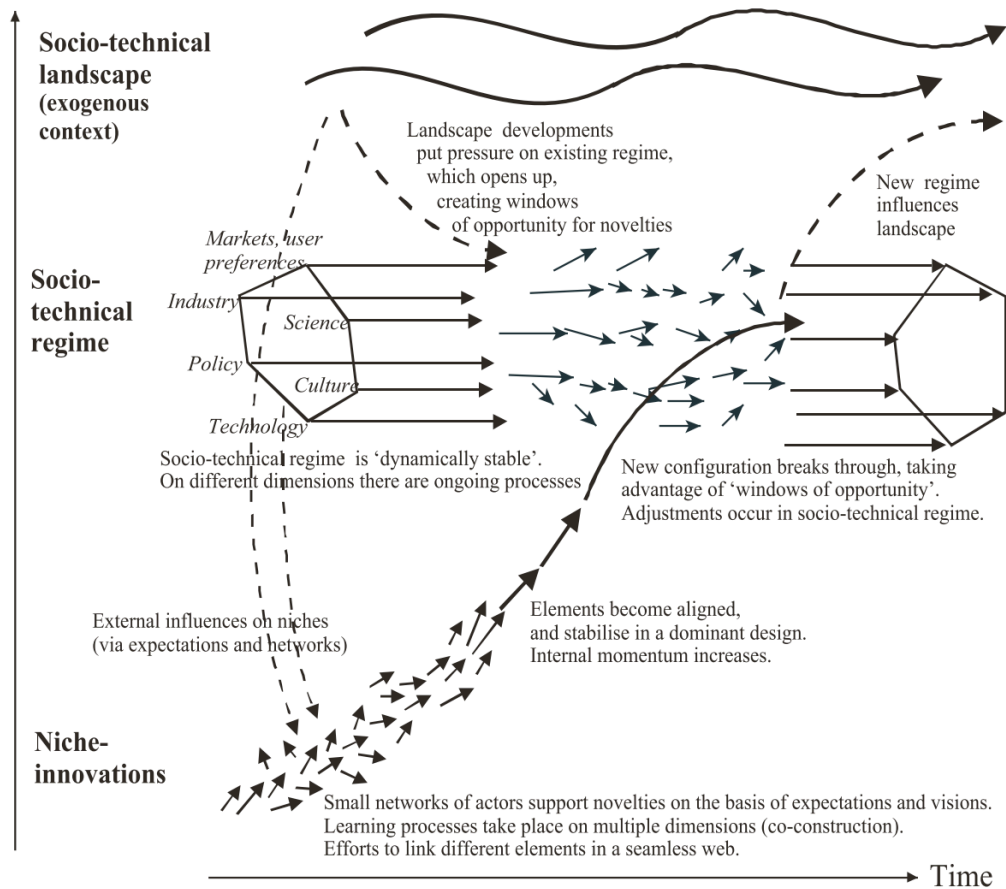


Figure 7 Multi-level perspective on socio-technical transitions (Geels and Schot, 2007).

The transition studies frameworks can be complemented by multiple theoretical approaches to specific characteristics of transitions, being them more general theories (evolutionary economic theory, actor network theory), or more focused theories (social construction of technology, constructive technology assessment, long waves, technology future studies, reflexive governance, and sociology of expectations) (Markard et al., 2012). Related research fields focused on mainly on environmental issues in transitions are sustainability science, ecological modernization, green management and corporate social responsibility, industrial ecology and eco-innovation (Markard et al., 2012).

5.2. PREPARING THE FIELD FOR CONCEPTUALIZING DEGROWTH-FOCUSED TRANSITIONS: WHAT IS THE CONTRIBUTION OF TRANSITION STUDIES?

One of the main assumptions in transition studies is that socio-technical systems are rigid and inert, and consequently innovation is usually incremental and radical change seen as an improbable event (Fuenfschilling and Binz, 2018). In a recent study, Vandeventer et al. (2019) argue that MLP can be used to explain a possible pathways for degrowth, a radical sustainability vision, thus entering with contradiction with this claim.

The authors argue that the degrowth position in relation to the capitalist-growth regime is being a radical niche innovation that is competing with it. The MLP conceptualizes niche innovations by being “innovative alternative models for the future with support from a growing movement of actors” (Vandeventer et al., 2019, p. 276), and thus it can be considered that these characteristics are present in the degrowth perspective and other alternative movements to the capitalist-growth regime. These authors consider that although the degrowth niche is still not well developed (in contrast to the established regime), it is dynamic and in progress, presenting potential for a synergetic relationship with other niches (e.g. sustainable development, green economy, steady-state economy, post-growth).

The work of Vandeventer et al. (2019) presents sound arguments to criticize the logic behind some MLP fundamental assumptions, such as the way niches are defined as being competitive or symbiotic to the dominant regime and consequently how they are able to influence it. According to the authors, MLP defines a successful niche as well-developed if it is able to penetrate the regime before its destabilization or, after the regime collapses, as the winner in a competition between several niches, and therefore the one that is going to replace the regime. The authors argue against this technological determinism by exposing that some alternative models which aim to influence the regime do not question the capitalist-growth system, and only want to influence its trajectory without any major transformations in its logic. On the other hand, the alternative models that criticize the dominant system can present fundamentally different proposals on how to transform the system, turning paradigms such as

degrowth and post-growth both opponents and competitors of the capitalist-growth regime.

After presenting their critiques to the MLP approach, Vandenventer et al. (2019) present an improved notion of MLP, considering a “pluriversal pathway for change of the capitalist-growth regime” (p.276) as a fifth socio-technical transition pathway (for the other four pathways see Geels and Schot, 2007). This different way to see transition pathways shares the notion of plurality of values present in the ecological economics research field: “niches represent different values and not necessarily each one of these aims at becoming hegemonic” (Vandenventer et al., 2019, p. 276), in contrast to the unilateral parallelism between value and profit in the capitalist-growth regime. The idealized resultant pluriversal regime would be dynamic and heterogeneous, constituted by degrowth and a variety of other micro-regimes that function in symbiosis and are adapted to local contexts.

Another important research work to build our argument is the “Deep Transitions framework” (Kanger and Schot, 2018; Schot and Kanger, 2018). Schot and Kanger (2018, p. 1045) define a Deep Transition as “a series of connected and sustained fundamental transformations of a wide range of socio-technical systems in a similar direction”. The authors argue that the overall transformation process occurs in multiple systems at the same time and has wave-type properties, taking centuries to unfold (Schot and Kanger, 2018). They argue that the long waves (or “Great Surges of Development”, a term with similar meaning used by Perez, 2002) broaden and deep the Deep Transition, but are not the Deep Transition in itself (Schot and Kanger, 2018). In figure 8 the authors illustrate the long-term change process, emphasising the long-term path dependency of societal transformation. They compare the concept to Karl Polanyi’s notion of “Great Transformation” (Polanyi, 1944), since it also refers to large-scale and long-term change in socio-technical systems. In Polanyi’s work, the practices of commodification of labour and nature, along with the disconnection of social values and the market, are historical exceptions imposed in the 18th and 19th centuries for the sake of protecting industrial growth (Paulson, 2016).

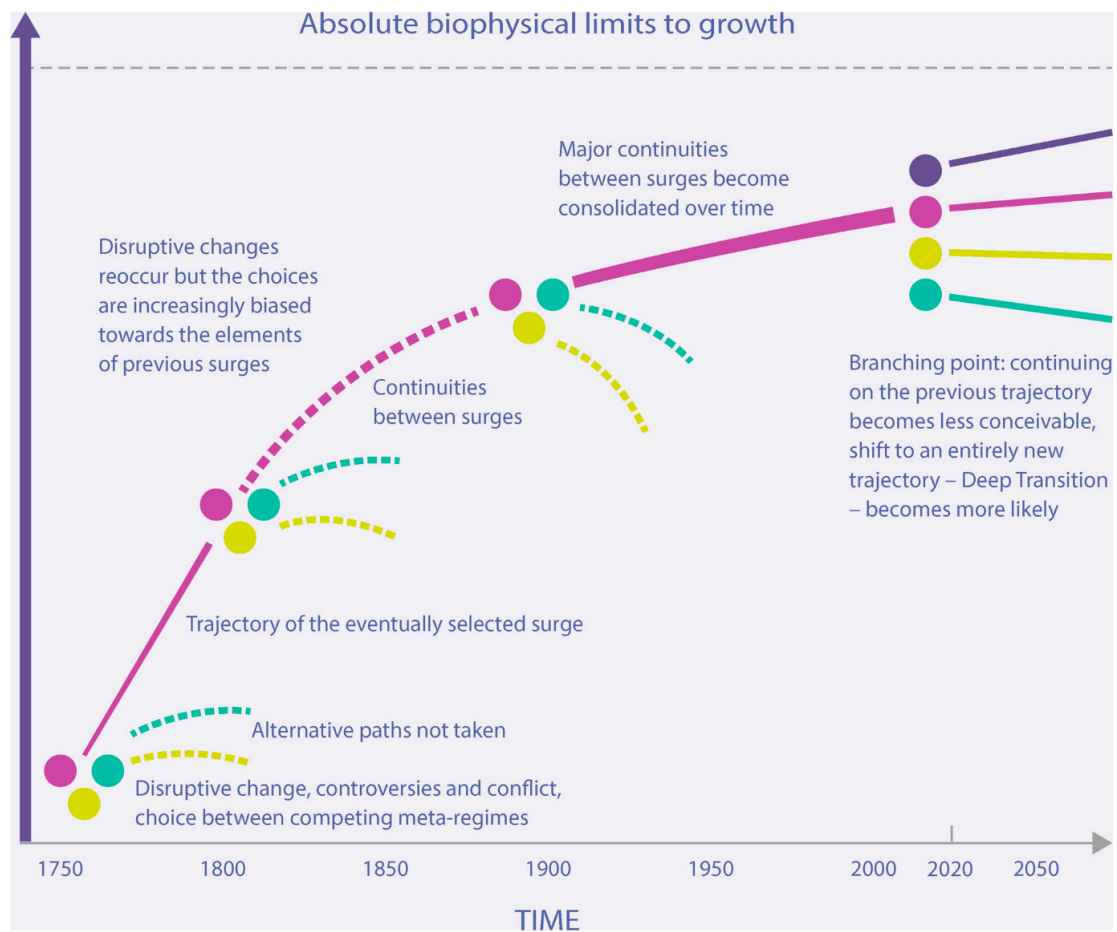


Figure 8 Cumulative effect of Great Surges of Development: A very long-term path dependency (Kanger and Schot, 2018)

This theory aims to show that there was a First Deep Transition in human history, characterized by the beginning of industrial modernity and built through successive great surges of development (Kanger and Schot, 2018). This process emerged due to the pressing issues of the pre-modern era, and it was very important to increase social well-being in some parts of the world and over the long-term (Kanger and Schot, 2018). Issues such as absolute poverty, life expectancy, infant mortality, access to high-quality food, clean water, cheap energy, mobility and communication services, social safety, etc. improved significantly due to industrial modernization (Kanger and Schot, 2018). However, some environmental and social problems were never solved but instead postponed or transferred to elsewhere (e.g. delocalization of polluting industries to developing countries) (Kanger and Schot, 2018).

The First Deep Transition has been reinforced ever since by dominant and long-lasting directions (with occasional shifts) and many different alternative models present in niches or single systems (Kanger and Schot, 2018). Examples of these long-lasting and dominant directions are mechanization, mass production coupled with individual consumption, increasing energy- and resource-intensity (linear production), and a growing ecological footprint (Kanger and Schot, 2018).

The authors argue that the focal social inequalities partially created by the various socio-technical systems are related to “differential access to socio-technical systems, differential gains from the system, and an uneven distribution of risks” (Kanger and Schot, 2018, p. 9) instead of being based on problems of income or wealth distribution. The combination of the long-term path dependency caused by the dominant and long-lasting directions and the contribution of the various socio-technical systems to the environmental and social crisis (called the double challenge) can explain, for these authors, the appearance of many niches that aimed to solve these problems but that eventually reinforced them. The authors give two very relevant examples that help to understand this paradox, which are the car-based mobility and the Information and Communication Technologies (ICT). The car, which was seen as a response to environmental issues in cities and to the isolation of rural communities, came to dominate the mobility systems of modern society and to contribute substantially to pollution, climate problems and created new types of socio-spatial inequality. As for the ICT, the authors show evidences on their impact on the rising of energy- and material-intensity of economic activities and also on the intensification of social inequalities. These examples help to illustrate what this framework tries to explain, which is that the many new niches are captured by the “dominant evolutionary logic of the First Deep Transition” and become aligned with it (Kanger and Schot, 2018, p. 9).

The authors believe that we might be facing in the future a Second Deep Transition, due to the emerging contestation and birth of niche innovation that aim their activities at solving the First Deep Transition problems (Schot and Kanger, 2018). However, the authors claim that this Second Deep Transition can take multiple forms, depending on the agency of the various actors that will be shaping the process, what means that this transition will not necessarily lead to the reduction of inequality or

tackle climate change (Schot and Kanger, 2018). A synthesis of the framework can be found in figure 9.

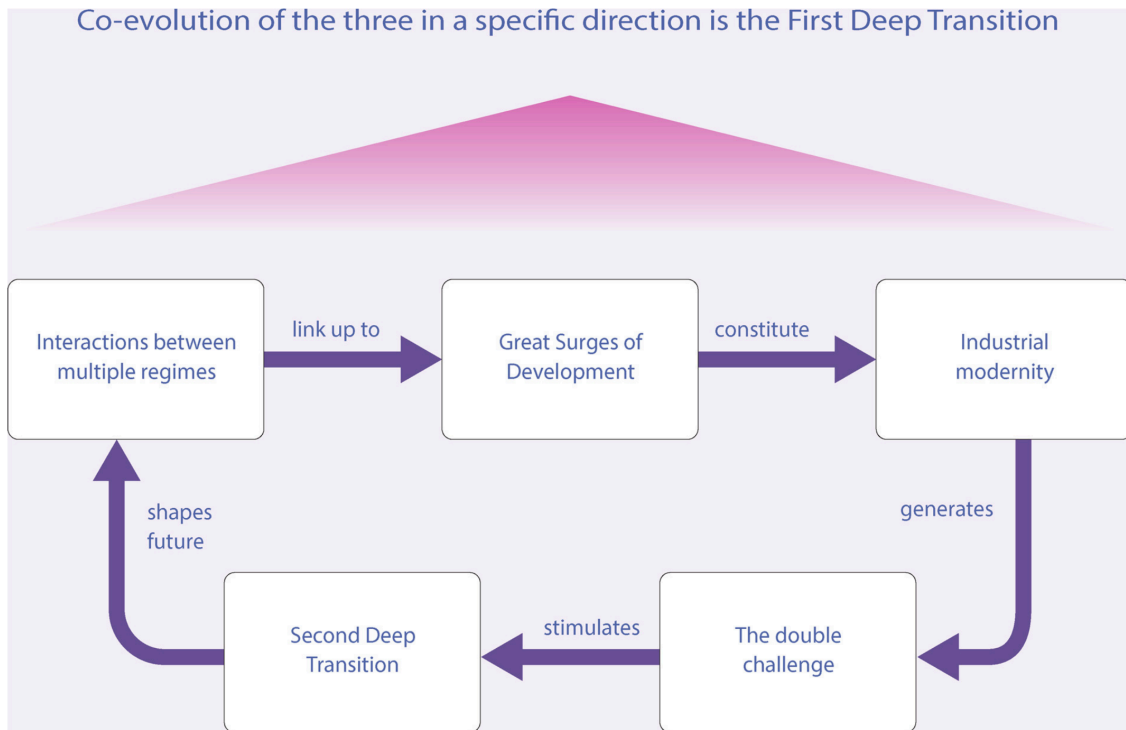


Figure 9 Deep Transitions Framework (Kanger and Schot, 2018)

To build this framework, the authors combined the MLP and the Techno-economic Paradigm theory (TEP) (see Freeman and Louçã, 2001), both perspectives that deal with long-term change but that individually are unable to explain Deep Transitions. For the authors, the main gap in this literature is “how individual socio-technical systems have historically become connected into complexes of systems, developed traction in particular directions, and how these complexes, in turn, have increasingly become part of the socio-material fabric of our economies, politics, cultural frameworks, social interactions and everyday practices” (Schot and Kanger, 2018, p. 1046).

Due to their theorization of how Deep Transitions unfold, the authors claim their lack of trust in the fact that the persistent social and environmental problems societies are facing can eventually be solved in the boundaries of the First Deep Transition (Schot and Kanger, 2018). This is a focal point to the degrowth argument, and thus the insights from the Deep Transition Framework seem useful to bring robustness to degrowth

arguments. To challenge the dominant regime based on neoliberal economics of growth it is crucial to focus not only alternative economic models but especially to oppose economic determinism (Fournier, 2008).

5.3. DEGROWTH-FOCUSED SOCIO-TECHNICAL TRANSITIONS TO SUSTAINABILITY: UNRAVELLING CONCEPTS AND BUILDING ACTION STRATEGIES

We consider that the different perspectives on sustainability transitions are not value-free, although it is rare to find published work in transition studies that clearly states which is the sustainability perspective that is being considered in the research. In this work it is made clear that degrowth is the sustainability lens being used. Building on the transition theories and perspectives reviewed in this chapter, we will now present our own vision on how a degrowth-focused socio-technical transitions to sustainability can unfold.

According to Demaria et al. (2013) there are three types of action strategies or “means to degrowth transformation” (Petridis et al., 2015). These can be implemented from local to global levels, and are (i) oppositional activism, (ii) building alternatives (creation of new institutions) and (iii) reformism (actions within existing institutions that enable change). Examples of oppositional activism include demonstrations, civil disobedience, direct action and protest songs. Examples of building alternatives, or as the Demaria et al. (2013) call “nowtopias” (referring to Carlsson, 2008), are alternatives built outside current institutions, such as cycling, reuse, vegetarianism or veganism, co-housing, agro-ecology, eco-villages, alternative banks or credit cooperatives, solidarity economy, consumer cooperatives, and decentralised renewable energy cooperatives. The third action strategy is the reformism, which according to the authors can coexist with the more radical revolutionary positions within degrowth scope. Examples of reforms that can be done inside current institutions without compromising degrowth goals are establishing a basic citizens’ income, elimination of debt-based money, protecting and strengthening of the commons, and maintaining some elements of the welfare state that provide social security, health and education public systems (Demaria et al., 2013).

Inspired by the work on the **pluriversal pathway for change of the capitalist-growth regime** (Vandeventer et al., 2019), the **Deep Transitions framework** (Kanger and Schot, 2018; Schot and Kanger, 2018) and the **means for degrowth transformation** (Demaria et al., 2013; Petridis et al., 2015), we argue that a socially just degrowth transition has to have ideally three main kick-off features:

- (i) A symbiotic ecosystem of bottom-up sustainable alternatives and movements that are not competing but working in harmony with each other, providing local/regional solutions that work for the specific contexts where they appear;
- (ii) A top-down pluralistic strategy at a national level that does not create barriers but instead creates a protected space for radical niche alternatives, which will be able to experiment and provide innovations that oppose the dominant economic determinism;
- (iii) A top-down regulation at national and international levels aligned with a post-growth vision for the future, which will be essential to boost major changes in the long-lasting dominant directions (e.g. mechanization, mass production and individual consumption, increasing energy- and resource-intensity) and reverse their consequent problems (e.g. climate change, scarcity of natural resources, violation of human rights, disconnection of social values and the market).

The Deep Transitions Framework helps to explain the complexity and interconnection of the persistent social and environmental problems over the very long-term, which is important to understand why and how the socio-technical systems created them. It also created a basis to argue that societies cannot solve the problems that arose due to the First Deep Transition with the same logic behind the dominant directionalities that feed their persistence. To challenge the dominant regime based on neoliberal economics of growth it is crucial to focus not only alternative economic models but especially to oppose economic determinism (Fournier, 2008). We argue that major changes need to have new vision behind it, a vision based on degrowth goals and other strong sustainability approaches. This new vision will help to steer the path to a Second Deep Transition in a socially just and ecologically balanced way.

The enriched MLP with the pluriversal pathway for change shows that transformations can come from different sustainability alternatives, meaning that different values and alternatives can be accommodated and work together to build a desired future sustainable regime. This would not create an hegemonic dominant regime (such as the capitalist-growth) but a set of micro-regimes (similar to the concept of metaregimes in Kanger and Schot, 2018) that would function in symbiosis and would be adapted to local contexts. We argue that multiple radical niche initiatives and regime degrowth-related reforms have the potential to start to insert “cracks” in the dominant regime. These degrowth-related transformations need to occur in the various multiple socio-technical systems that build the regimes.

The way to assess the contribution of degrowth niche innovations to regime transformation remains rather unexplored (Vandeventer et al., 2019). The way various degrowth and degrowth-related niche experiments can enter into synergy and push collectively for a transition is still also an open area for research. From the work done in Part II, we also consider that the more reformist perspective of degrowth – the degrowth-inspired changes inside the dominant regime – is an area still underexplored. Due to the time constraints for the development of this thesis, and in the impossibility to incorporate all the means to degrowth transformation, we are excluding from this analysis the contribution of the regime opposition movements towards degrowth transformations.

Following these research gaps, we present in the following section the development of a novel framework for assessing the contribution of degrowth niche innovations and reforms at regime level towards pushing a regime shift. The regime level is considered to be dominated by the capitalist-growth system, following the work of Vandeventer et al. (2019). At the niche level we consider bottom-up sustainability initiatives that explore radical innovations and try to push a strong sustainability transition (resonating with the work of Sekulova et al., 2017). In the spirit of the plurality of values, we consider a variety of degrowth-related innovations at the niche level (even

if they do not link their activities directly to the degrowth vision), such as permaculture, organic farming, and initiatives part of the Transition Network movement⁴.

We consider as landscape pressures to the regime factors such as geopolitical resource competition and peaks, decreasing marginal returns, immigration, climate change, continuing wars, population growth, cultural attitudes and shifts in social values (Vandeventer et al., 2019). However, we adhere to the assumption made for the Deep Transition Framework that landscape pressures can be both endogenous or exogenous to the transition process, i.e. the landscape can both influence and be influenced by the systems (Kanger and Schot, 2018). The authors defend this claim since the First Deep Transition has changed and continues to change the landscape (e.g. climate change, increasing reach of capitalism, hybridization of global culture) (Kanger and Schot, 2018).

⁴ More info about these initiatives at: <https://transitionnetwork.org/>

6. EXPLORING A NEW ANALYTICAL FRAMEWORK TO ASSESS THE CONTRIBUTION OF BOTTOM-UP AND TOP-DOWN INITIATIVES IN PUSHING A DEGROWTH TRANSITION: THE “DEGROWTH ASSESSMENT TOOLS”

6.1. INTRODUCTION

There is an identified need to use or develop new metrics to assess the progress of a degrowth transition, and measure what matters in this perspective, since the current ones are focused on a growth-based system (e.g. Alexander, 2013; Kallis et al., 2012). The first and only contribution to date for this specific need is the work of O’Neill (2015, 2012). The author has developed and tested the *Degrowth Accounts*, “a set of 16 biophysical and social indicators that are derived from Herman Daly’s definition of a steady-state economy and the social goals of the degrowth movement” (O’Neill, 2015, p. 1213), and applied them to approximately 180 countries over a 10-year period. This set of indicators can be used to measure the progress of countries at a macro level.

At a micro level, there is the work of Sekulova et al. (2017), that developed an analytical framework for assessing degrowth-related initiatives with the purpose of understanding their emergence and evolution. This framework was constructed based on literature and it was applied to a analyse in-depth six initiatives that exist in the Barcelona area (Spain). The data was collected through the performance of semi-structured interviews and participants-based observation. There is also a framework called ‘Matrix for Convivial Technology’ developed by Vetter (2018), which aims to assess technologies suitable for degrowth societies. The author presents the framework as a convivial tool itself, as it can be used by “degrowth-oriented groups to self-assess their work and products in a qualitative, context-sensitive and independent way” (Vetter, 2018, p. 1778).

The work by Domènech et al. (2013), for the comparative study of degrowth initiatives in the water sector, is also relevant. The authors argue that the “multi-criteria decision theory appears to be a promising tool to perform empirical evaluations of potential degrowth initiatives, as it seeks to modulate the influence of economic factors

considering other aspects such as environmental conservation or social equity” (Domènech et al., 2013, p. 46).

Other frameworks exist for assessing sustainability initiatives not specifically tied to the degrowth perspective. Seyfang and Haxeltine (2012) developed a study to understand how the Transition Towns movement in the UK contributes to processes of systemic change (in the context of sustainability, climate change, and peak oil). Antikainen et al. (2017) present a framework that has the main goals of assessing the success of the sustainability experiment and its sustainability performance, and apply it to ten sustainability experiments in Finland.

This chapter is structured in as follows. First, we present the importance and goals for building a new framework. Then, we present the methods used to build the *degrowth assessment tools*. This is followed by the presentation of results – the final format of the framework and the typology of different uses. The chapter is then closed with the main conclusions retrieved from this work.

6.2. EXPLORING A NEW ANALYTICAL FRAMEWORK FOR ASSESSING DEGROWTH TRANSITIONS

In Chapter 2 it was explored the question of how degrowth can be pushed in a top-down way by the state and/or in a bottom-up way by the civil society. In this part, it will be presented an analytical framework developed to facilitate the assessment of the contribution of the top-down and bottom-up actions to a degrowth transition, having a multi-level perspective in mind. This framework served as a basis to create the *degrowth assessment tools* (from now on called DGTools).

The main goal of this framework is to provide a multi-criteria tool for the strategic assessment of (i) bottom-up sustainability initiatives; and (ii) top-down regime-level reforms. We define bottom-up sustainability initiatives (from now on called only ‘sustainability initiatives’) as a comprehensive group of niche innovations that have a grassroots approach, which can be described as a “diverse set of activities in which networks of neighbours, community groups, and activists work with people to generate bottom-up solutions for sustainable developments; novel solutions that respond to the local situation and the interests and values of the communities involved; and where

those communities have control over the process and outcomes” (Smith and Stirling, 2018, p. 67). These solutions can be born due to “material and economic necessity, or motivated by social issues marginalized by the conventional innovation systems of states and markets” (Smith et al., 2017, p. 4). They can take multiple forms, such as being community-based (e.g. transitions initiatives, community composting schemes, urban gardens, food cooperatives), social enterprises and/or networks of activist. These initiatives are connected with one of the three action strategies for degrowth transition – “Building alternatives” (Demaria et al., 2013).

As for the top-down regime-level reforms, seen as the “Reformism” action strategy for degrowth transition (Demaria et al., 2013), we consider the sustainability policy instruments as the main object of research. These can be, for instance, policy packages (e.g. Green Tax Reform) or national strategies (e.g. National Strategy for Sustainable Development).

This analytic framework allows to evaluate the state and, consequently (if used along a time period) the progress of the sustainability initiatives towards the degrowth goals defined in Chapter 3. With the results, it is possible to perform a strategic planning of the future of the initiative and define long-term goals. This helps avoiding the action mostly based on daily demands and promotes an outcome-oriented planning.

In terms of the assessment of sustainability policies, the framework allows to understand until what point the policy is aligned with the degrowth goals. Currently, there is no knowledge about countries that openly embrace a voluntary degrowth path. However, this tool can allow to understand if some dimensions of degrowth are being included in the policies design. In the future, it might be a useful tool for policy-makers to perform *ex-ante* or *ex-post* policy assessments and identify what is missing. This knowledge can be used to design more coherent policy-mixes.

In the end, this strategic assessment of both sustainability initiatives and policies is valuable to understand their actual contribution to a degrowth transition at the regime level (sustainability policies -- the role of the state) and at the niche level (sustainability initiatives -- the role of civil society). This is a novel work that aims to contribute to the still scarce research and literature in degrowth assessment tools.

6.3. METHODS

6.3.1. STEP 1: SELECTING THE DEGROWTH ASSESSMENT CRITERIA

The DGTools were developed by using the degrowth proposals identified in the literature review presented in Chapter 3. The structuration of the degrowth perspective into 3 main goals, 15 topics and 75 degrowth proposals (Tables 5, 6 and 7) allowed to understand the multitude of dimensions and possible actions that a degrowth transition involves.

As it can be observed in Tables 5, 6 and 7, not all the degrowth proposals have the same number of citations in the academic literature, being ones much more cited than others. In this context, the proposals were ranked in order of the number of references in the literature to understand which of the proposals were the most cited. This ranking was used to choose the most important assessment criteria. Two different tests were made: the ranking of proposals in terms of total references (Figure 10) and another one excluding references from the same first author (Figure 11). The codes used for each proposal in Figures 1 and 2 are presented in Appendix III.

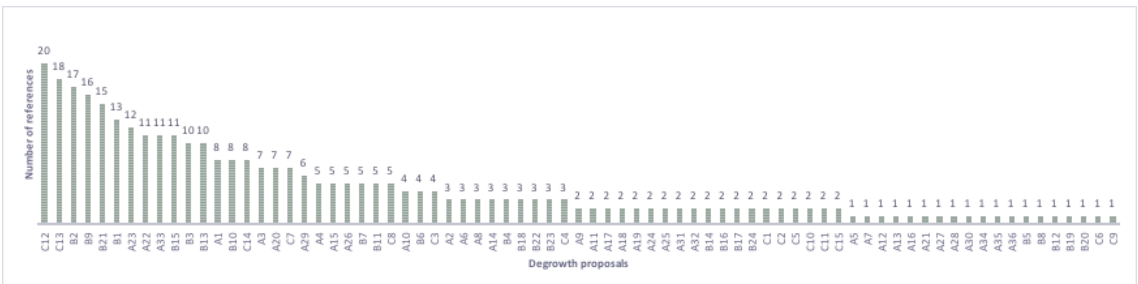


Figure 11 Number of total references per degrowth proposal

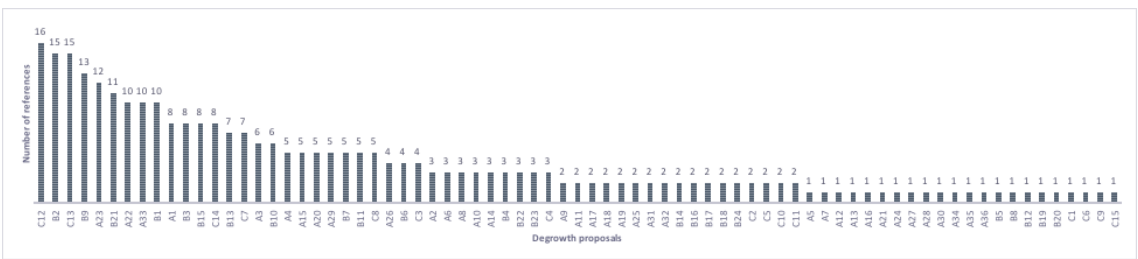


Figure 10 Number of references per degrowth proposal, excluding references from the same first author

Based on the results of the two tests, it was decided to use the second version since it made sense to only count one time a certain author's proposal due to a considerable number of articles from the same first authors. We consider this approach useful to decrease a bias in the results towards the authors that publish more in the research field. The proposals with more than five citations from different authors were used as basis to develop the assessment criteria, what resulted in a group of 24 proposals.

6.3.2. STEP 2: TURNING THE DEGROWTH PROPOSALS INTO A SET OF CRITERIA

The degrowth proposals were slightly adapted to become assessment criteria. Tables 10 and 11 present the selected degrowth proposals and the modifications done. It also presents the applicability of the criteria to the two proposed assessment contexts – sustainability initiatives and policy instruments.

Table 10 List of degrowth proposals, criteria and their applicability to different contexts

Goal	Degrowth proposal	Criteria	Asses. of sustainability initiatives	Assess. of policy instruments
Goal 1 Reduce the environmental impact of human activities	Reduce material consumption	Reduction in material consumption	X	X
	Reduce energy consumption	Reduction in energy consumption	X	X
	Create incentives for local production and consumption	Promotion of local production and consumption	X	X
	Promote changes in consumption patterns	Incentivization to more sustainable consumption patterns	X	X
	Limit/regulate advertising	Limitation/reduction of advertising	X	X
	Decrease the number of appliances and volume of goods used or consumed per household	Reduction of volume of goods used/consumed per household	X	X
	Promote organic farming/sustainable agriculture	Promotion of sustainable agriculture	X	X
	Put caps on resource use and extraction (tradable or non-tradable)	Reduction in resource use and extraction	X	X
	Invest in more renewable energy	Promotion of the use of renewable energy	X	X
Goal 2 Redistribute income and wealth both within and between countries	Promote community currencies, non-monetary exchange systems and alternative credit institutions	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	X	X
	Promote a fair redistribution of resources through redistributive policies of income and capital assets	Promotion of a fair redistribution of resources through redistributive policies of income and capital assets		X
	Promote work-sharing and job-sharing	Promotion of work-sharing	X	X
	Create a basic/citizen income	Creation of a basic/citizen income		X

Table 11 List of degrowth proposals, criteria and their applicability to different contexts (continuation)

Goal	Degrowth proposal	Criteria	Asses. of sustainability initiatives	Assess. of policy instruments
Goal 2 Redistribute income and wealth both within and between countries	Improve social security and investment in public goods to guarantee equal access to goods and services, to protect from poverty and exclusion	Improvement of social security and investment in public goods		X
	Create salary caps	Creation of salary caps		X
	Encourage the reform of corporation charters and new ownership patterns	Promotion of new ownership patterns based on sharing	X	X
	Implement redistributive taxation schemes	Implementation of redistributive taxation schemes		X
	Promote the recognition and management of common goods	Promotion of the recognition and management of common goods	X	X
	Promote the shift of costs from labour to capital	Promotion of the shift of costs from labour to capital		X
Goal 3 Promote the transitions from a materialistic to a convivial and participatory society	Reduce working hours	Reduction of working hours	X	X
	Promote frugal, downshifted lifestyles	Promotion of frugal, downshifted lifestyles	X	X
	Explore the value of unpaid and informal activity	Exploration of the valuation of unpaid and informal activity	X	X
	Decentralize and deepen democratic institutions	Decentralization and deepening of democratic institutions	X	X
	Promote alternative political systems and capabilities to provide them	Promotion of alternative political systems and capabilities to provide them	X	X

6.3.3. STEP 3: DEFINING THE SCALE OF ANALYSIS

The DGTools allow the rating of a sustainability initiative or policy across the 3 degrowth goals and the 24 criteria that comprise them. The scale of the analysis can be chosen according to the object of assessment. What is called a degrowth transition in this research is not a cohesive and well-defined movement. To assess the characteristics of such a movement requires a sensible and flexible approach.

6.3.3.1. ASSESSMENT OF BOTTOM-UP SUSTAINABILITY INITIATIVES (NICHE LEVEL)

The scale of scoring that was chosen to assess sustainability initiatives for each individual criterion was a five-point Likert scale:

- 1 – Not relevant
- 2 – Does not contribute and it is not planned, although relevant
- 3 – Does not contribute yet but it is planned
- 4 – Contributes but still not in full potential
- 5 – Contributes in full potential

Especially in the case of emergent, small-scale sustainability initiatives, it is important to present a generic and broadly defined qualitative scale, for allowing the accommodation of the different contexts and structures. This scale also allows to perform the assessment without requiring high data quality, what is also relevant when assessing small-scale initiatives that often are more focused on the socioecological experiment itself than on retrieving data.

6.3.3.2. ASSESSMENT OF TOP-DOWN POLICY INSTRUMENTS (REGIME LEVEL)

To assess policy instruments, the DGTools can be used as a checklist for assessing if the policy design was done in a way that contributes or not to the criteria. It can also be used with a range of potential contribution – low, moderate or high – a qualitative scale to be used having degrowth goals and perspective in mind.

A low potential for contribution means that a measure has a marginal potential to contribute to a criterion. It can be something that has a positive, but indirect effect in the criterion and is not very aligned with the degrowth perspective. An example would be measures that aim to incentivize people to buy more sustainable cars. If people choose electric cars in detriment of fuel-powered cars, this can be seen as a more sustainable behaviour. However, in a degrowth perspective, a measure to buy an individual car is not considered to be aligned with the essence of this vision. Whereas a measure that aimed at promoting the use of electric shared cars systems would be more aligned, and the promotion of the use of soft modes of transportation or collective transportation even more aligned with this perspective.

A moderate potential for contribution means that a measure has some potential to contribute to the criterion, in a direct or indirect way, especially if designed with a degrowth perspective in mind. An example would be to promote research on sustainable production and consumption systems. This measure would only be fully aligned (and thus have a high potential for contribution) with a degrowth perspective if this research was focused on downsizing these systems and not only on 'greening' the methods of production without touching the core of the problem: the profit-only oriented systems.

A high potential for contribution means that a measure that has a high potential for contribution to the criterion, due to promoting a direct effect on it and being aligned with the essence of the degrowth perspective. An example would be a measure that aimed at promoting the use of bikes in a city in a direct way, such as building the infrastructures and spreading sharing bike systems. This would aim to direct people's behaviour towards using the bike inside the city.

6.4. RESULTS: THE DEGROWTH ASSESSMENT TOOLS (DGTOOLS)

6.4.1. OVERVIEW OF THE FRAMEWORK

The criteria are included in this framework without a differentiation in terms of their relative importance. In spite of that, the degrowth goals can be differentiated as being more or less distant from the core of the degrowth perspective of a sustainable transition. Figure 12 aims to illustrate that, by having Goal 3 represented in the centre of the snail shell (being the snail a known symbol of the degrowth movement⁵), whilst Goals 2 and 1 are further away, respectively.

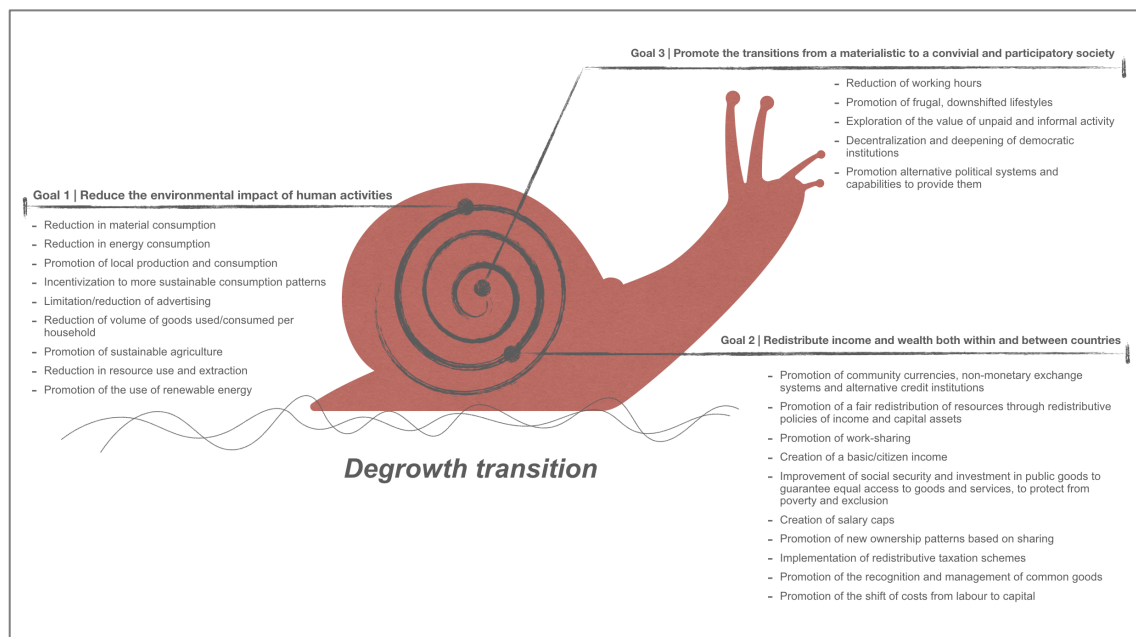


Figure 12 The Degrowth Assessment Framework represented inside the “degrowth snail”.

⁵ For more information about the degrowth snail, visit: <https://www.slowfood.com/the-wisdom-of-the-snail/>

6.4.2. TYPOLOGY OF POTENTIAL USES AND RECOMMENDATIONS FOR APPLICATION OF THE FRAMEWORK

The DGTools can be applied to multiple situations. Table 12 presents an overview of the possible applications, corresponding methods, potential uses and the indication of how to operationalize the application (or the indication of if it is not explored in this work).

Table 12 Typology of potential uses for the Degrowth Assessment Framework

Application	Method	Potential uses	Operationalization
Monitoring or self-assessment of initiatives	Perception survey according to criteria; no aggregation of criteria	To develop a strategy of continuous improvement of a project towards degrowth goals	Table 13
Sustainability assessment of public policy	Creation of a checklist based on the criteria	Do a strategic assessment of public policy in the design phase	Table 14
	Creation of a set of indicators based on criteria	Assess indicators and attribute goals to do periodic assessments	Not explored in this work
Diagnosis of needs for degrowth-specific policies/measures	Survey to degrowth initiatives at regional or national level according to criteria, comparative study and mapping	Diagnosis at regional and national levels of existent degrowth initiatives and identify what can be done to enhance them	Table 13 and mapping tools
Ranking	Multi-criteria analysis through weighting	To rank projects to decide how to allocate funding To rank degrowth initiatives / technologies to decide which one is more suitable to a certain context	Not explored in this work (see e.g. Domenèch et al., 2013)
Degrowth certification or label	Auditing scheme based in criteria and external evaluation by an independent entity	Create a degrowth symbol as a tool for differentiated information/marketing of sustainable products	Not explored in this work

The first application presented is the Monitoring or Self-assessment. For this, the scoring sheet (Table 13) can be used and no aggregation of the criteria is necessary. Here, a project or initiative promotor, for instance, can use the framework to develop a

monitoring of their activities and plan ahead for being more aligned with the degrowth goals.

The framework can also be used for assessing public policy (Table 14). If used to perform a strategic assessment, the criteria can be used as a check-list during the design phase. If used to monitor a degrowth-related policy, a set of indicators can be developed from the criteria. Ideally there should exist an attribution of goals according to the context of implementation, and then use the indicators to perform periodic assessments of the evolution of implementation.

The tools presented here are also appropriate to perform a diagnosis of needs for degrowth-specific policies/measures. By using the scoring sheet (Table 13) to assess multiple sustainability initiatives at regional or even national levels, it is possible to identify pitfalls or specific advantages of certain initiatives, aggregate them in clusters to understand if a certain region could benefit from having other types of initiatives to enhance a degrowth transition process, among other possibilities. Mapping the initiatives and/or clusters of initiatives helps to do a spatial planning of a degrowth transition. This diagnosis can be a useful tool to plan specific degrowth-related policies or to open funding opportunities for the creation of bottom-up initiatives in areas that are not being explored.

For ranking purposes, the criteria should be divided in required and optional, since there are some criteria that might be more important than others to reach a decision. This way, the optional criteria give extra points to the project in assessment without working as a disadvantage in terms of essential characteristics. The criteria have to be aggregated to make a ranking and so weights have also to be set, depending on the goal of the ranking exercise. Both criteria division and weights can be set in a participatory way, according to the context of the decision.

The criteria can also be adapted to create a degrowth certification or label, in comparison to other sustainability labels (e.g. Fair Trade, Organic Production, EU Ecolabel). For this, an auditing scheme based in criteria could be created and external evaluation by an independent entity should be incentivized.

Table 13 DGTtools – assessment of sustainability initiatives

	Contributes in full potential	Contributes but still not in full potential	Doesn't contribute yet, but it's planned	Doesn't contribute and it's not planned, although relevant	Not relevant
 GOAL 1 Reduce the environmental impact of human activities	Reduction in material consumption				
	Reduction in energy consumption				
	Promotion of local production and consumption				
	Incentivization to more sustainable consumption patterns				
	Limitation/reduction of advertising				
	Reduction of volume of goods used/consumed per household				
	Promotion of sustainable agriculture				
	Reduction in resource use and extraction				
	Promotion of the use of renewable energy				
	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions				
 GOAL 2 Redistribution of income and wealth both within and between countries	Promotion of work-sharing				
	Promotion of new ownership patterns based on sharing				
	Promotion of the recognition and management of common goods				
	Reduction of working hours				
 GOAL 3 Promote the transition from a materialistic to a convivial and participatory society	Promotion of frugal, downshifted lifestyles				
	Exploration of the value of unpaid and informal activity				
	Decentralization and deepening of democratic institutions				
	Promotion of alternative political systems and capabilities to provide them				

Table 14 DGTools – assessment of policy instruments

		Checklist		
		Low contribution	Moderate contribution	High contribution
 GOAL 1 Reduce the environmental impact of human activities	Reduction in material consumption			
	Reduction in energy consumption			
	Promotion of local production and consumption			
	Incentivization to more sustainable consumption patterns			
	Limitation/reduction of advertising			
	Reduction of volume of goods used/consumed per household			
	Promotion of sustainable agriculture			
	Reduction in resource use and extraction			
	Promotion of the use of renewable energy			
 GOAL 2 Redistribution of income and wealth both within and between countries	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions			
	Promotion of a fair redistribution of resources through redistributive policies of income and capital assets			
	Promotion of work-sharing			
	Creation of a basic/citizen income			
	Improvement of social security and investment in public goods to guarantee equal access to goods and services, to protect from poverty and exclusion			
	Creation of salary caps			
	Promotion of new ownership patterns based on sharing			
	Implementation of redistributive taxation schemes			
	Promotion of the recognition and management of common goods			
 GOAL 3 Promote the transition from a materialistic to a convivial and participatory society	Promotion of the shift of costs from labour to capital			
	Reduction of working hours			
	Promotion of frugal, downshifted lifestyles			
	Exploration of the value of unpaid and informal activity			
	Decentralization and deepening of democratic institutions			
	Promotion of alternative political systems and capabilities to provide them			

6.5. MAIN CONCLUSIONS

In Chapter 6, the framework will be tested recurring to case-studies. This test has provided new insights to the limitations and possible improvements to the framework's initial design, that are presented in the end of the next chapter.

It would also be important to do an update of the literature review performed in Chapter 3 and that was used as a basis for the design of the framework. Novel research might provide useful insights for the framework, as well as alter the most relevant criteria. This is an idea that will be considered for future research.

Some promising uses for the framework were identified but not explored in this research, namely the use of the framework for creating a set of indicators to assess policy and the use of the criteria as a basis for a certification scheme for degrowth-related production. This is also an avenue for future work based on the Degrowth Assessment Framework.

7. EXPLORING DEGROWTH TRANSITIONS IN A MULTI-LEVEL PERSPECTIVE IN THE PORTUGUESE CONTEXT

7.1. INTRODUCTION

We present in this chapter the first empirical analysis, to our knowledge, of the contribution of niche-level initiatives and regime-level reforms to degrowth goals for a sustainability transition. This analysis was done to test the Degrowth Assessment Framework developed in Chapter 6, and to provide insights to the following research questions:

- Recognizing the role of the state, how can public policies be a tool, at the regime level, to promote a degrowth transition?
- Recognizing the role of the citizens, how can bottom-up initiatives contribute, at the niche level, to promote a degrowth transition?
- How to rethink public policies in a growth-based regime to incentivize and support a degrowth transition in a multi-level perspective?

The objectives of the chapter are: (i) to test and refine the DGTools (developed in Chapter 6); (ii) to provide examples of the operationalization of the framework; (iii) to contribute for the advancement of knowledge about how to put degrowth perspective in practice; and (iv) to provide policy recommendations that facilitate the steering of a degrowth transition in a growth-based regime.

The chapter is divided in four sections. The first one presents the research design for this part of the work. The following two sections correspond to the two case studies performed: section 7.3 focuses on Sustainability initiatives in Portugal and section 7.4 focuses on the Portuguese Green Tax Reform process. These two sections are both divided in four subsections: description of the case study, methods, results and discussion. Section 7.5 wraps up the chapter presenting the main conclusions retrieved.

7.2. RESEARCH DESIGN

Due to the exploratory nature of research, an inductive research approach was used. This involved a two-case studies approach, one with multiple cases (A) and another with a single case (B). The case study approach is used primarily when “(1) the main research questions are “how” or “why” questions; (2) a researcher has little or no control over behavioural events; and (3) the focus of study is a contemporary (as opposed to entirely historical) phenomenon” (Yin, 2014, p. 35). It was considered that all these propositions were accurate for this research.

The two case studies defined to test the DGTools were: (A) sustainability initiatives in Portugal, to assess the potential of niche-level innovation; and (B) the Green Tax Reform (GTR) process in Portugal, to assess the potential of regime-level reforms.

From the literature review presented in Chapter 3, it is clear that degrowth proponents see a great potential in bottom-up initiatives to push a degrowth transition. As these grassroots projects are limited in terms of issues addressed and the population that they reach, for Case A we tried to identify all sustainability initiatives in Portugal that we could find, recurring to multiple databases. This allowed us to assess their contribution to degrowth goals both at a more localized level and at a national level, when seeing all of their contributions as a whole.

For Case B, a specific policy instrument had to be chosen. Among all the policy proposals that can be found in degrowth academic literature (see Chapter 3), the economic instruments (e.g. environmental taxes, subsidies, certificate trading) were chosen as the research object due to their high potential to induce massive behaviour change if designed and implemented with that goal. They are also important policy tools to explore the interconnectedness between bottom-up and top-down proposals in the context of a degrowth transition, since usually the agenda setting, design and implementation of economic instruments is done in a top-down perspective and often lacks proper monitoring of its effects.

The GTR, as a policy package, has the potential to follow a more holistic view of sustainability than other economic instruments, due to the range of issues that can be

combined. It is also a flexible policy tool, since it has the potential to be designed following the principal of fiscal neutrality, which can be used to reduce income taxes by increasing taxation on environmental bads, but it has also the potential to not follow that principle and the revenue from new taxes or removal of harmful subsidies can be used in favour of environmental protection or other purposes. As these kinds of reforms are usually projected by experts and subject to public consultation processes, there is a huge potential to deepen democracy in their design, another degrowth perspective goal. Also, the interdisciplinary collaboration setting that must be created to achieve the concretization of a GTR project is a plus for the pluriversal vision of sustainability explored here. Lastly, this is an instrument identified in the top ten policy proposals for a degrowth agenda by the leading research group in degrowth (Research & Degrowth, 2014), what echoes its potential importance in this field research.

By focusing only one case-study, it was possible to explore what was the process and what can be changed in the future so that the GTR goals contribute to a degrowth transition. Although case-studies can have the caveat of often not being representative enough to allow generalization (Jupp, 2006), the GTR processes have more than 30 years of implementation (Castelluci and Markandya, 2012) in various countries, and they often follow the same type of strategies, so it might be possible in the end to generalize the recommendations drawn from the Portuguese case.

The Portuguese context was chosen due to a number of reasons. Portugal has been very active in fostering social innovation⁶. According to a report published by The Economist, Portugal is classified in the 22nd place (out of 45) in the ranking of the Social Innovation Index, which measures the ability for social innovation (The Economist Intelligence Unit, 2016). Portugal is also identified in this report as one of the only seven countries that was actively implementing a national policy for social innovation⁷, at the

⁶ Social innovation “refers to any project or activity that is new, that meets a social need, that engages and mobilises its beneficiaries, and that to some extent transforms social relations by improving beneficiaries’ access to power and resources. (...) [It] can refer to new services and products, new practices, new processes, and new rules and regulations, as long as they meet a social need and their benefits accrue to society as a whole, rather than individuals” (The Economist Intelligence Unit, 2016, p. 8) and thus used in this context as another way to define innovation at the niche level.

⁷ More info at the website: <http://inovacaosocial.portugal2020.pt/>

time of the report. Secondly, Portugal is the Southern European country with the higher number of transition initiatives listed in the worldwide database Transition Network⁸, only surpassed by the UK (the far leading country, where this network was born), France, Germany and Belgium (see Table 15). As these grassroots initiatives appear as alternatives to the dominant regime, it is not surprising to find a rising number of initiatives in Portugal in the last few years, since the severe economic and financial crisis damaged many social structures in the country, and the society was pushed to find ways to increase their resilience (Sekulova et al., 2017).

Table 15 Number of initiatives registered in the Transition Network by EU member states

Country (EU 28)	Nº initiatives
United Kingdom	272
France	36
Germany	32
Belgium	29
Portugal	20
Spain	17
Ireland	11
Italy	8
Denmark	5
Netherlands	5
Austria	4
Sweden	4
Latvia	3
Romania	3
Croatia	2
Greece	2
Hungary	2
Slovenia	2
Estonia	1
Finland	1
Luxembourg	1
Poland	1
Slovakia	1
Bulgaria	0
Cyprus	0
Czech Republic	0
Lithuania	0
Malta	0

⁸ Disclaimer: it is possible that not every transition initiative is registered at the database, available at: <https://transitionnetwork.org/transition-near-me/>

7.3. CASE STUDY A (NICHE LEVEL): THE CONTRIBUTION OF SUSTAINABILITY INITIATIVES IN PORTUGAL TO A DEGROWTH TRANSITION

7.3.1. DESCRIPTION OF THE CASE STUDY

This section presents the first case study, which is a multiple case analysis of a group of sustainability initiatives in Portugal. The sustainability initiatives considered in this research have different kinds of activities that include the areas of: culture and education; economy and finance; land and nature management; organic production and/or commercialization of organic products; permaculture; health and spiritual wellbeing; transition movements; land use and community.

7.3.2. DATA COLLECTION

7.3.2.1. CONSTRUCTION OF THE ONLINE SURVEY

The scoring sheet (Chapter 6, Table 13) was adapted to an online survey, developed in Google Forms⁹. The choice of using an online survey was due to the high number of initiatives that were sampled, their geographical distribution, financial and time constraints of the research work.

The elements were translated to Portuguese. The complete survey is presented in Appendix IV. Apart from the elements of the scoring sheet, the survey also included an introductory text to explain briefly the work in which this survey was included, the main goals of the survey, characterization questions about the respondent and the initiative, and open questions after each degrowth goal scoring table so that the respondents could give examples of actions they have in place or planned to illustrate their answers.

⁹ About Google Forms[®]: <https://www.google.com/forms/about/>

7.3.2.2. SELECTION OF THE SUSTAINABILITY INITIATIVES

The sustainability initiatives were selected through the use of three online databases:

- Rede Convergir (<http://redeconvergir.net/>)
- Happy Cow (<http://www.happycow.net/>)
- Global Ecovillage Network (<http://ecovillage.org/projects/>)

Rede Convergir is a Portuguese network that gathers sustainability initiatives. In this platform it is possible to gather the names, contacts and some information about the initiatives. Happy Cow is a global network that certifies vegetarian and vegan friendly restaurants, stores and accommodations throughout the globe. This was used as a complement of the first database to include more for-profit initiatives in the sample. The Global Ecovillage Network (GEN) gathers ecovillages from all over the world in an online community. This third database was used as a check for ecovillages that might not be registered at *Rede Convergir* (mainly as some ecovillages are run by non-Portuguese speakers and *Rede Convergir* is in Portuguese). Both Happy Cow and GEN have a search engine that allows to filter the initiatives by country. In all three platforms the initiatives can register themselves or be registered by others. Transitions Network database was not used since the 20 Portuguese initiatives that are registered there are also registered in *Rede Convergir*.

The sample of initiatives to which the survey was sent corresponded to 395 initiatives, a number that already excludes the initiatives that appeared in more than one platform. All the responses were collected online except from one survey that was made in person, while visiting the project.

7.3.2.3. ANALYSIS OF RESULTS

The analysis of the results was done recurring to various aggregation levels, based on the NUTS¹⁰ regions (Figure 13). This aggregation was chosen for three main

¹⁰ NUTS is an acronym that stands for "Nomenclature of territorial units for statistical purposes", a hierarchical system that divides the territory into regions. The nomenclature is subdivided into 3 levels (NUTS I, NUTS II, NUTS III), defined according to population, administrative and geographical criteria (source: <https://www.pordata.pt/en/What+are+NUTS>).

reasons: the first reason is that this is a known statistical division, which can present an advantage if statistical data needs to be used; the second reason is that this way it is possible to have a more substantial group of initiatives together, since some districts only had one response; the third reason is that this level of aggregation can be useful to connect the results with public policies, since it is the existent disaggregation for the Operational Regional Programs for the strategy *Portugal 2020*.

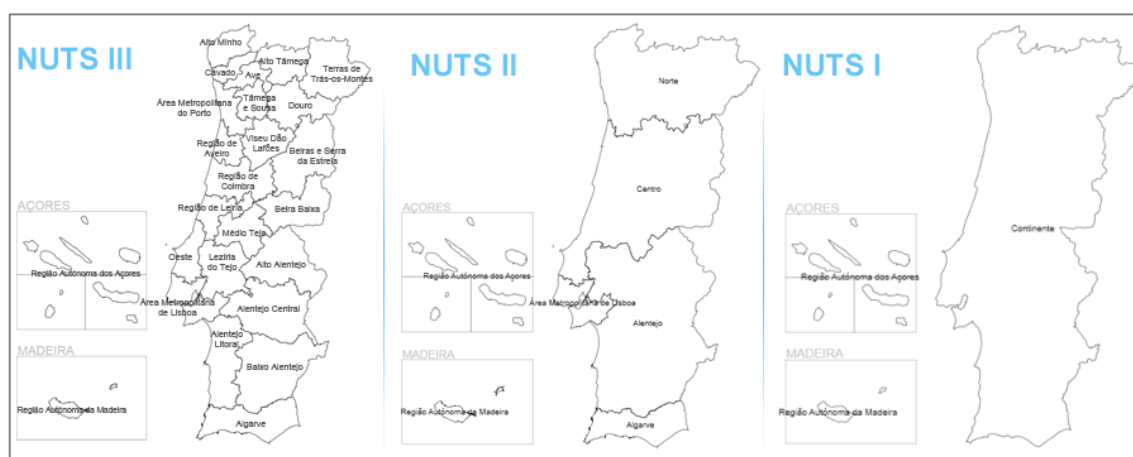


Figure 13 Portugal mainland and islands divided by NUTS I, II and III (source: <http://www.pordata.pt>)

For the characterization of the initiatives we used districts, a less aggregated level than NUTS III, for giving a better perspective on the distribution of initiatives throughout the country.

The results for the contribution of the initiatives for the 24 criteria inside the three goals were analysed in different ways. First, the results were aggregated for the whole country (NUTS I) and analysed in-depth by goal. Then, for doing a cluster analysis, the initiatives were aggregated by NUTS II regions: *Algarve*, *Alentejo*, *Lisboa*, *Centro* and *Norte* regions. This was decided to provide a more balanced analysis between regions, since there are ones that have a significantly higher number of responses than others. The open-ended answers that were inserted in the survey to provide examples of the contribution of the initiatives are presented also by region, being the full results presented in Appendix V.

Some data was added to the results from the online survey, which was the case for the type of organization (non-profit or for-profit organization) and the year of

foundation. This data was searched in the initiatives websites, social media profiles and through the databases used to do the sampling. These two dimensions were added since they can provide important information about the initiatives that was not asked in the survey.

7.3.3. RESULTS AND DISCUSSION OF FINDINGS

7.3.3.1. ANSWERS TO THE SURVEY

Table 16 presents the important numbers about the survey. Although 74 initiatives responded to the email sent, there was a total of 60 valid answers to the survey. This represents a response rate of 19,2% and a valid response rate of 16,2%.

Table 16 Summary from the responses of the survey

Total of initiatives sent	385
Total of valid initiatives (according to the responses)	371
Initiatives considered as out of scope	7
Initiatives that confirmed to be down	6
Repeated answers	1
Total of responses	74
Total of responses considered	60

7.3.3.2. CHARACTERIZATION OF THE INITIATIVES

Figure 14 shows the distribution of the responses in the country, aggregated by district. The responses covered 13 out of 18 Portuguese districts, with a significant degree of concentration in Lisbon (22) and Porto (10) areas.

Figure 15 shows the number of initiatives by year of foundation, as well as the accumulated value over the years. As it can be seen in this sample of initiatives, the numbers have been rising since the end of last century. The years that present a higher increase in number of initiatives so far are 2016 (12), 2011 (10), 2009 (6) and 2014 (6). This increase in the appearance of initiatives from 2009 on might be due to the severe economic and financial crisis that the country went through in those years, and the need for society to find ways to be more resilient to these exogenous shocks and find alternatives by starting their own business or starting projects to be auto-sufficient.

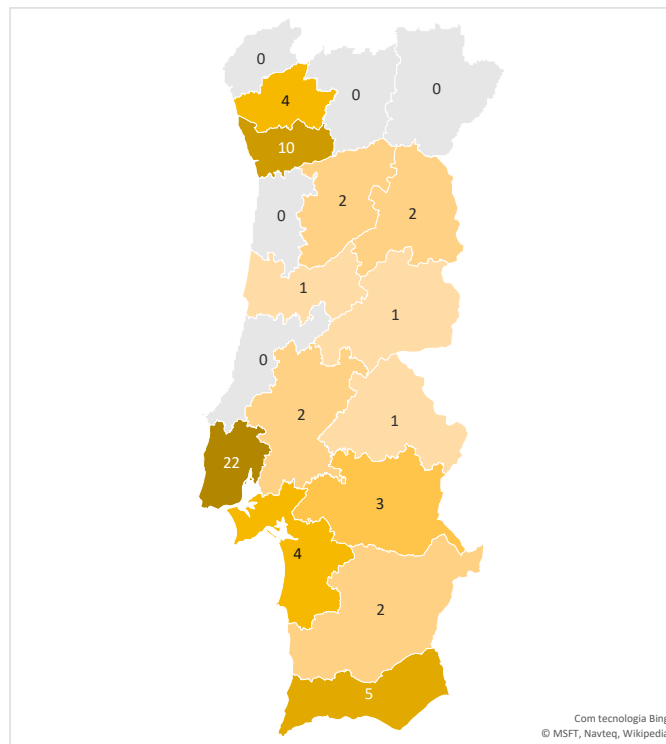


Figure 14 Distribution of the initiatives that responded, aggregated by district

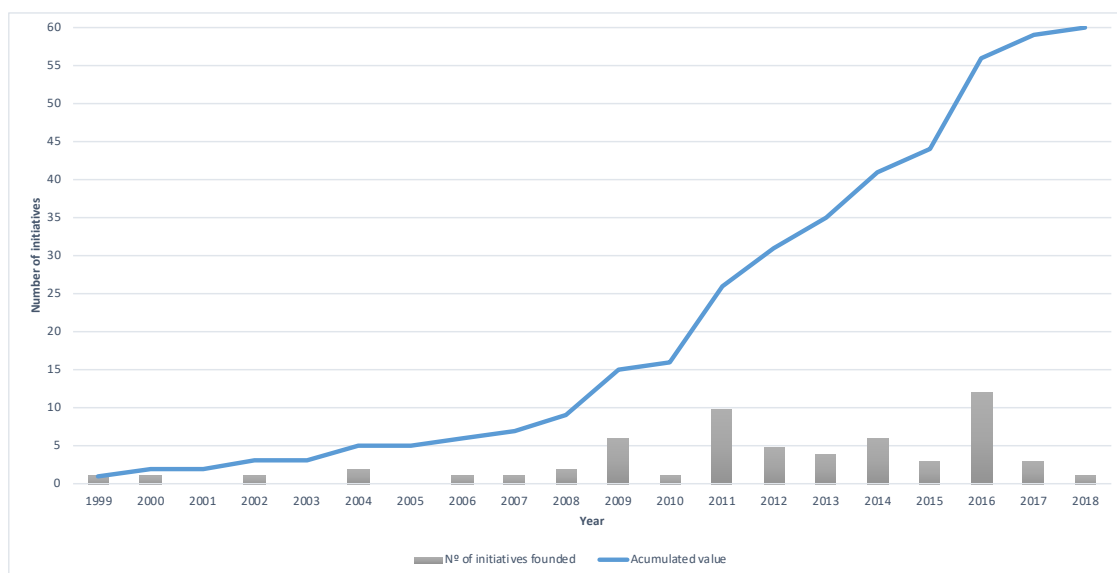


Figure 15 Emergence of the initiatives in Portugal between 1999 and 2018.

The initiatives were aggregated in eight types, which were Permaculture, Health and Spiritual well-being, Culture and education, Land use and Community, Land and Nature management, Transition, Economy and Finances, and Others. The results for the responses distribution along these types are presented in Figure 16. As most of the initiatives chose the category “Others”, the figure also shows the categories suggested by the respondents. Figure 17 shows the types of initiatives divided by NUTS II regions: Alentejo, Algarve, Centro, Lisbon, and Norte.

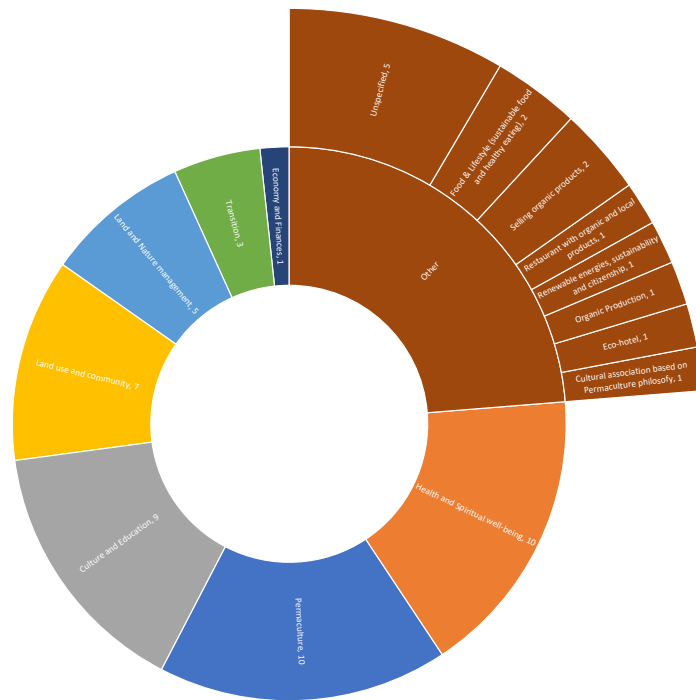


Figure 16 Total number by type of initiatives

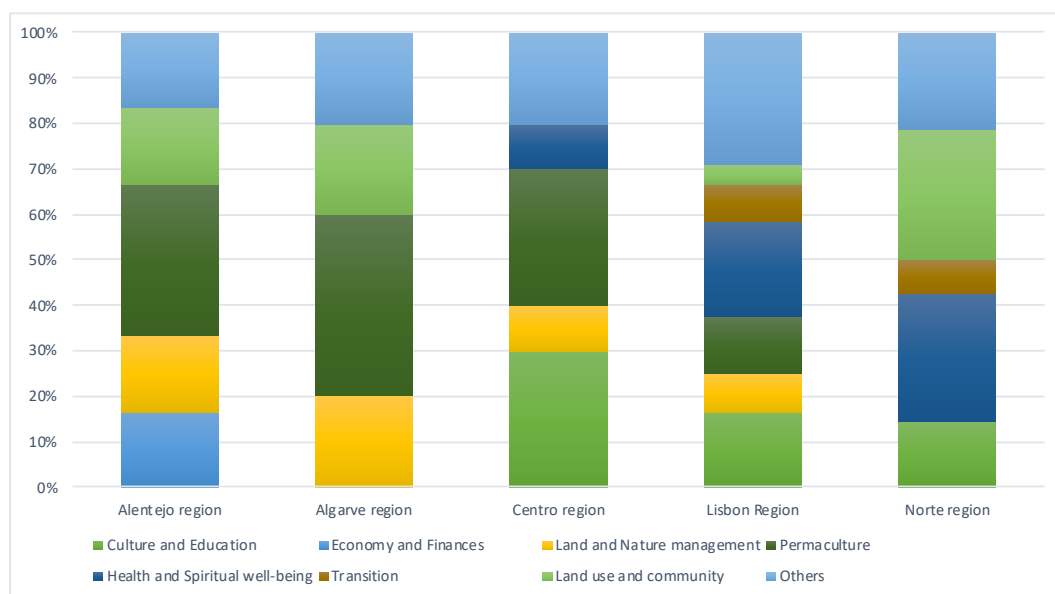


Figure 17 Types of initiatives divided by NUTS II regions

Figures 18 and 19 show an overview of the distribution of initiatives through coastal and interior zones, rural and urban areas, and also include one online only initiative. Most of the initiatives that replied to the survey are located in a coastal zone¹¹ of the country and in an urban context. This is not surprising since the number of initiatives in the Lisbon and Porto region were the highest. These are also the two areas of the country where the majority of population is concentrated.

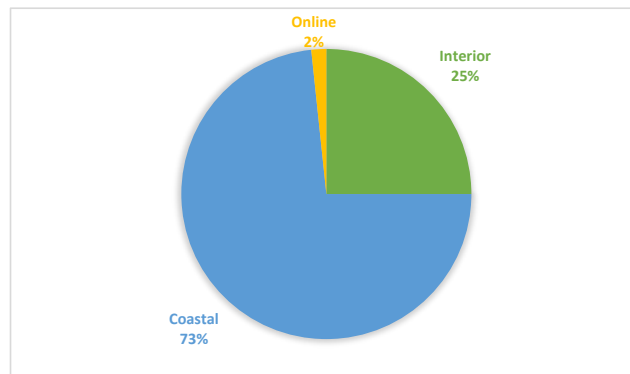


Figure 18 Overview of the distribution of initiatives through coastal and interior zones

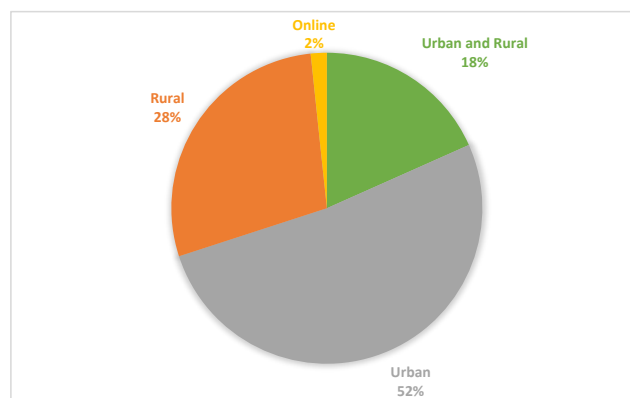


Figure 19 Overview of the distribution of initiatives through rural, urban-rural and urban areas

Next, we have the scale of operation of the initiatives, in Figure 20. As expected, the majority of the initiatives exercise their influence at the local level (43%). However,

¹¹ By coastal zone we mean the terrestrial area from the coastline to a maximum of 50km to the interior of the country, following the definition presented at: [https://www.infopedia.pt/\\$litoral](https://www.infopedia.pt/$litoral)

the number of initiatives that operate at regional, national and international levels are also significant, and very close to each other.

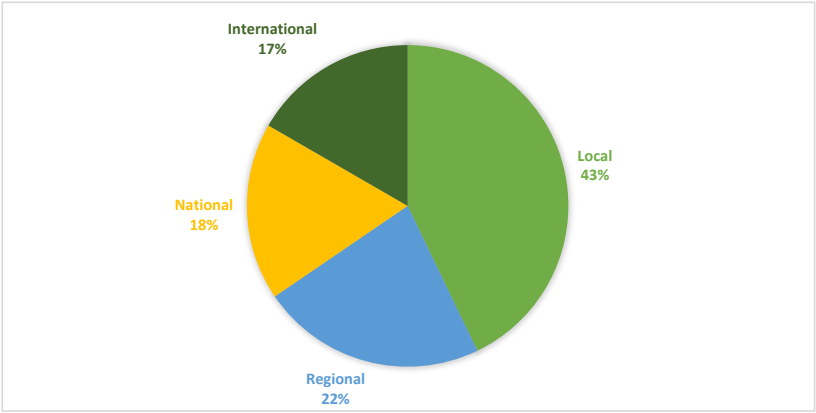


Figure 20 Scale of operation of the initiatives

As for the size of the initiatives (Figure 21), measured by the number of collaborators and the annual turnover/income (for-profit organizations) or the annual total balance (non-profit organizations). The large majority of the initiatives are at the micro level (83%), with some at small (15%) and medium levels (2%). The number of initiatives that replied were balanced between being non-profit organizations (47%) and for-profit organizations (53%), presented in Figure 22.

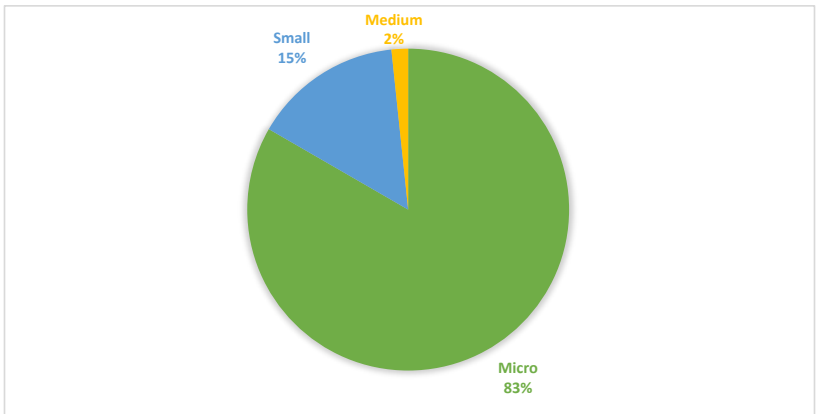


Figure 21 Size of the initiatives

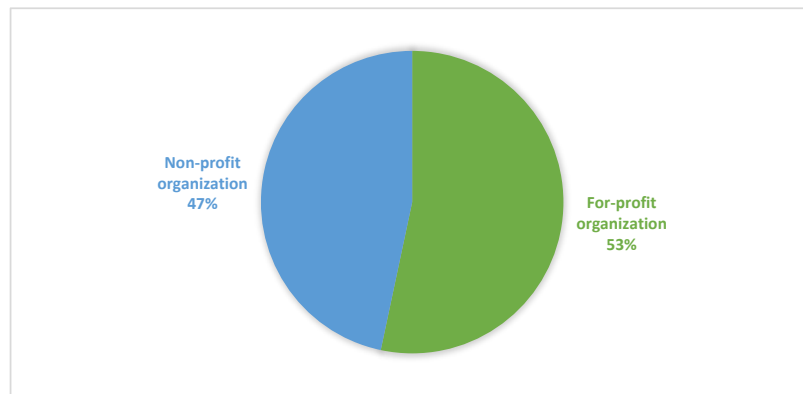


Figure 22 Type of organization

In the survey we also asked the types of services that the initiative offered and the types of products the initiative used and/or sell. The results are present in Figures 23 and 24. The more significant focus of these initiatives goes to offering courses and workshops and food production, whilst the most used/sold products are identified as being organic.

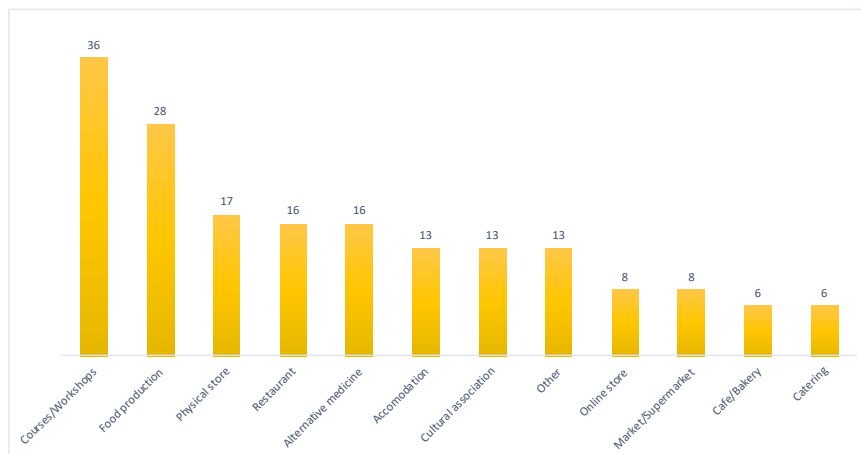


Figure 23 Types of services offered by the initiatives

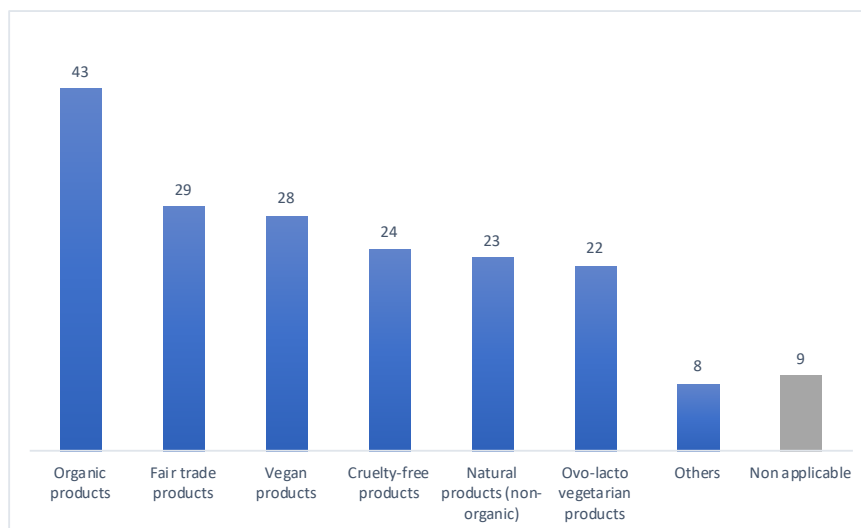


Figure 24 Types of products used and/or sold by the initiatives

The comparison between the type of initiative and its geographical location (rural vs urban) is presented in figure 25. It was also compared the type of initiative with the type of organization, presented in figure 26.

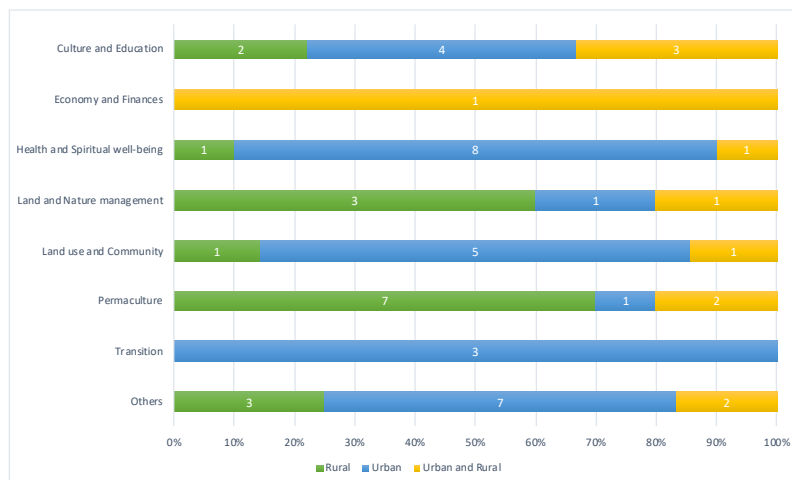


Figure 25 Type of initiative versus geographical location (rural vs urban)

It can be observed that the majority of health and spiritual types of initiatives are located in urban areas, what might be due to the accelerated and unfulfilling lifestyles that people experience in cities, leading to the need to find alternatives to improve well-being. The transition initiatives that responded are all located in urban areas, maybe since they are inspired by the Transition Towns movement and also due to the need of people in cities to enhance community living (that is common to be lost in an urban context) and to promote some sort of connection to the earth and food autonomy

(through for e.g. the development of urban gardens). This is also the case for land use and community initiatives. The initiatives marked as 'others' are also mainly located in urban areas, what is not surprising since they are mainly shops, cafes and restaurants, and so they are usually located where the market is bigger. As for permaculture initiatives and the land and nature management initiatives, the majority is located in rural areas, what is not surprising due to the nature of their activities. Culture and education initiatives are spread along the areas. There is only one economy and finances initiative, and it has both rural and urban activities.

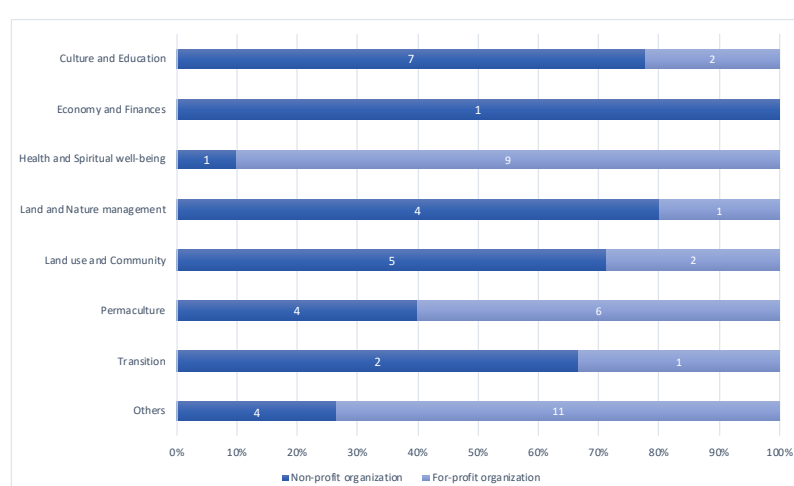


Figure 26 Type of initiative versus type of organization (profit vs non-profit)

The more market-oriented types of initiatives in this sample are marked as 'others' and health and spiritual well-being. From these ones, it was identified that they were either stores, cafes, restaurants, or other businesses with a strong connection to sustainability issues. The less market-oriented types of initiatives identified are related to culture and education, land and nature management and land use and community. These are the issues usually linked to common goods.

Some patterns were identified about the appearance of specific type of initiatives along the years (Figure 27). The oldest initiatives and that have been appearing spread along the years are the ones related to permaculture (1999 to 2016) and land and nature management (2000 to 2016). The newest type of initiatives are land use and community and transition initiatives (since 2011), along with the only initiative about economy and finances, which was founded in 2015.

Although health and spiritual well-being initiatives have been appearing since 2002, there is a clear boom in their number in 2016. Culture and education initiatives appeared between 2004 and 2014. The initiatives marked as ‘others’ have started to appear in 2006 and have been increasing in number since then. These initiatives are general stores, cafes and restaurants that might be using or selling mainly organic, fair trade, vegetarian and vegan products, a niche market that has been rising in these last few years in Portugal. These results illustrate the shift that has been occurring in terms of sustainability issues in this time period: the first initiatives were focused mainly on the protection of the environment and ecosystems, whereas the social aspects have been rising through the years, with a growing focus on community building and well-being.

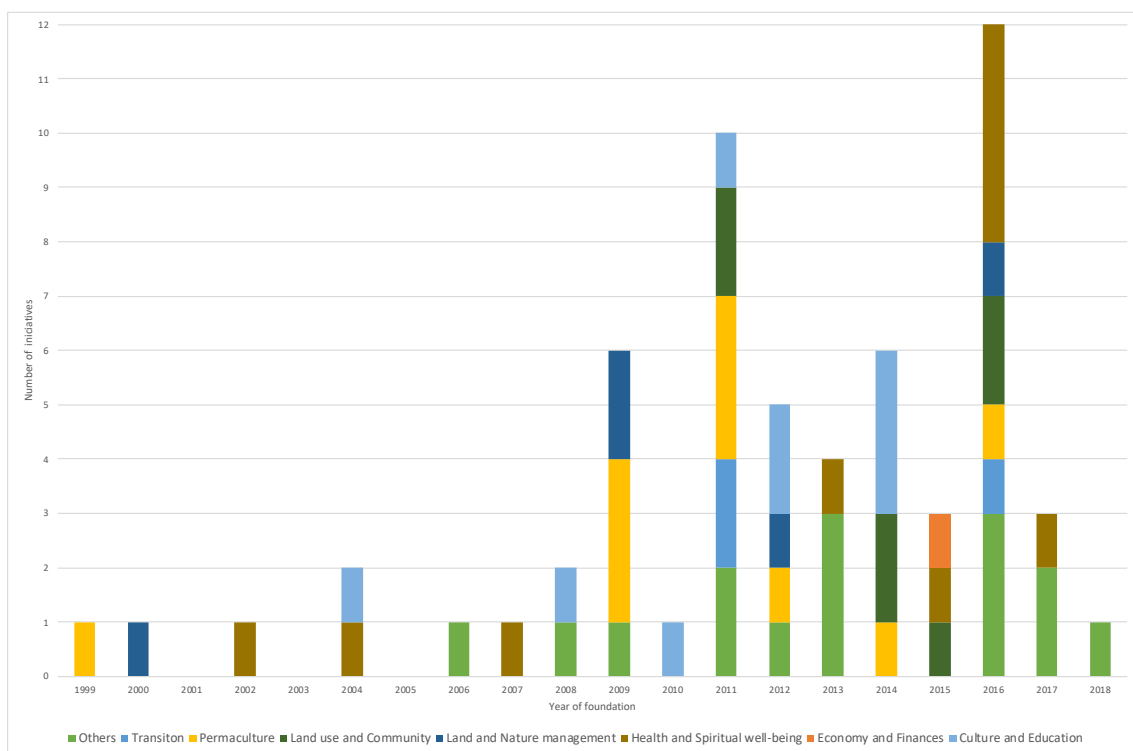


Figure 27 Number of initiatives founded by year and type

7.3.3.3. POTENTIAL OF REPLICABILITY

We also wanted to know the perception the respondents had regarding the potential of replicability of their initiatives. The results, in Figure 28, show that in their majority (68%), the proponents think that their initiatives have a high potential to be replicable elsewhere, while 20% consider that there is a moderate potential and 12% a low potential of replicability.

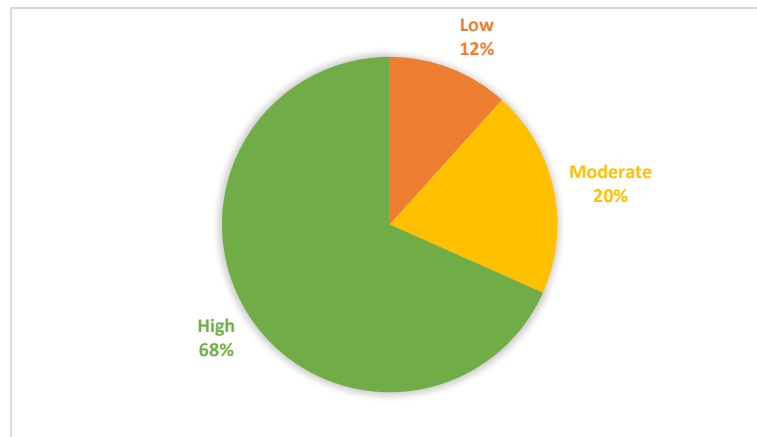


Figure 28 Potential of replicability of the initiatives, according to the respondents' perceptions

It was asked for the respondents to justify their answers about the replicability of their initiatives. Some of the answers indicate that there was a misperception about the question's objective. The misconceptions linked to a low replication potential were: the inexistence of similar initiatives (being this an indicator of their replicability); the fact of being a non-profit organization or not disseminating their results and thus not achieving a greater audience (here the initiative is being pointed as an agent that does not have the capacity to replicate itself); the idea that these projects cannot be replicated since they all have their own identity.

Other reasons more in tune with the objective of the questions were given for the low replication potential of the initiatives. In the case of a community of people that shares a living space, it was pointed out the need for having patience to manage conflicts, compromise and responsibility to be engaged with the initiative, and also the risk of people leaving the project for personal reasons. In the case of a project selling vegan products, the reason that was pointed out was that the Portuguese market is too small to have similar initiatives.

The reasons given for the medium replication potential were that: different contexts can implicate significant differences; the increasing tendency of people interested in organic and healthy food and products, but still being a niche; an idea can be easily replicated (e.g. a vegan cafe) but the details distinguish it from other similar projects (e.g. the materials used to build, the type of activities dynamized in the place, etc.).

As for the high potential of replicability, many respondents gave reasons that included the existence of many locations with similar socioeconomic and ecological contexts in which people can develop and implement innovative sustainability projects that respect traditional/cultural roots. It was mentioned that the ideas itself are highly replicable and the only necessary condition is the existence of enthusiastic people that want to collaborate with others and create projects (e.g. permaculture farms, community projects, transition movements). Many initiatives add to this that there is an effort to spread their message, to teach and to help others to start a similar projects.

Being part of international networks with the same objectives also seems to increase the replication potential of the initiatives, since the models are already tested and information about international experiences disseminated (e.g. Transitions Network, Zeitgeist Movement). Another reason mentioned was the high demand of the market currently for organic and vegan products, a reason brought up by initiatives that such as shops, restaurants, bakeries and cafes.

7.3.3.4. CONNECTION WITH OTHER INITIATIVES AND NETWORKS

It was also asked to the respondents to mention their connections with national and/or international networks. The mentioned networks were divided into national/international and also into themes, presented in Table 17. Not surprisingly, the networks that gather most initiatives together are the ones used as databases: *Rede Convergir* (40 out of 60 initiatives) and *Happy Cow* (21 out of 60 initiatives).

Table 17 National and international networks mentioned by the respondents

Themes \ Scale	International	National
Social forums and movements	European Alternatives, European Civic Forum, Stop TTIP	ESLIDER - Rede Nacional de Empreendedores Sociais e Líderes da Sociedade Civil
Volunteering	Helpx, WOOF	-
Permaculture and agroecology	Permaculture Global, Permies, Worldwide Permaculture Network, UK Permaculture Association, others non-specified, URGENCI	Various Portuguese networks of permaculture, REPAMAP - Rede Nacional das AMAP
Sustainability initiatives	Happy Cow, Transitions Network, ECOLISE, SIRClE, Regeneration Hub, RECONOMY	Rede Convergir, Transitions Portugal
Alternatives for community building	GO DEEP, The Venus Project, Zeitgeist Movement	Rede de Cooperativas Sociais
Education	-	REV – Rede Educação Viva, ACIRES XXI - Associação Círculos de Inovação (da Rede Educação Século XXI)
Nature conservation	Earth Guardians, European Land Conservation Network, Rewilding Europe	Plantar Portugal, Reflorestar Portugal
Sustainable tourism	Responsible Travel, Veggie Hotels	Rede Aldeias Pedagógicas
Others	Unite in Babylon International, Electromagnetic/Microwaves radiation associations	-

7.3.3.5. DEGROWTH ASSESSMENT – OVERVIEW FOR PORTUGAL

In Figure 29 it is possible to see an overview of the perceived contribution of all the sustainability initiatives that responded to the survey for degrowth goal 1 (DG1). In a first glimpse, the initiatives most relevant contribution to the criteria is on the *promotion of sustainable agriculture*. Then we have the *reduction in resource use and resource extraction*, followed by the *promotion of local production and consumption* and *incentivization to foster more sustainable consumption patterns*. Although there are still few initiatives that consider themselves contributing in full potential to the *reduction in*

material consumption, it is clearly the criterion (from the ones assessed) that presents the greatest effort from the majority of initiatives.

The main dimensions that initiatives responded that they have planned for the future or that are not planned but consider relevant are connected to energy: *promotion of renewable energy* and *reduction in energy consumption*. The two dimensions that pop up as having more distributed results and a higher number of initiatives marking them as not relevant are *limitation/reduction of advertising* and *reduction of number in volume of goods used/consumed per household*.

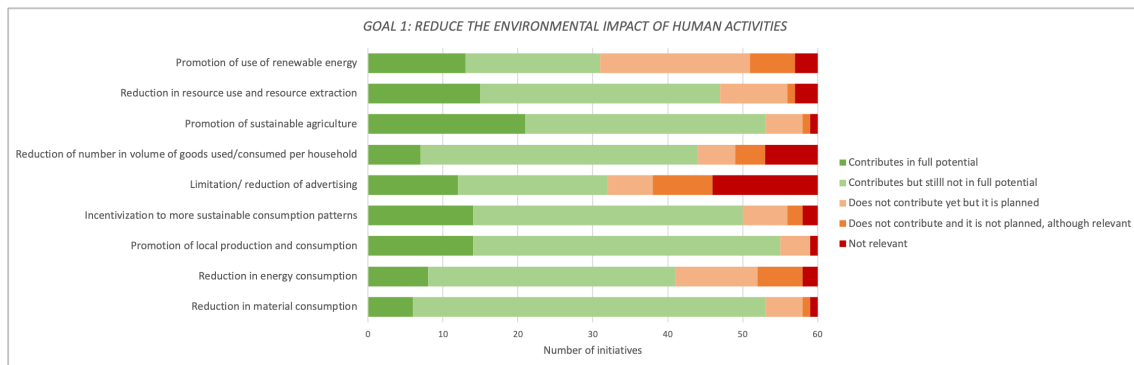


Figure 29 Results for the contribution of initiatives to Goal 1, aggregated for Portugal

In Figure 30 it is possible to see an overview of the perceived contribution of all the sustainability initiatives that responded to the survey for degrowth goal 2 (DG2). For this goal the results are more evenly distributed between the last four items on the scale. From the few initiatives that consider contributing in full potential to the criteria, the prevalent one is the *promotion of new ownership patterns based on sharing*. The criteria *promotion of the recognition and management of common goods* where most initiatives felt they were contributing although not still in full potential. As for future plans, the most promising criteria seems to be the *promotion of community currencies, non-monetary exchange systems and alternative credit institutions*. The criteria that was considered most irrelevant in this goal was the *promotion of work-sharing*.

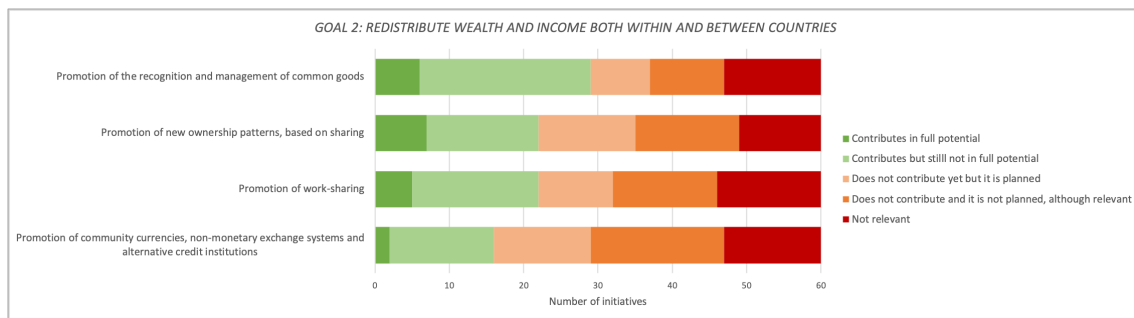


Figure 30 Results for the contribution of initiatives to Goal 2, aggregated for Portugal

In Figure 31 it is possible to see an overview of the perceived contribution of all the sustainability initiatives that responded to the survey for degrowth goal 3 (DG3). Both the *promotion of frugal, downshifted lifestyles* and the *exploration of the valuation of unpaid and informal activity* seem to be criteria that the respondent initiatives consider to contribute more, whether in the full potential or still in progress. The *promotion of alternative political systems and capabilities to provide them* and the *decentralization and deepening of democratic institutions* seem to be relevant and/or part of future plans for the initiatives, but also irrelevant for many others. The criterion considered most irrelevant was the *reduction of working hours*.

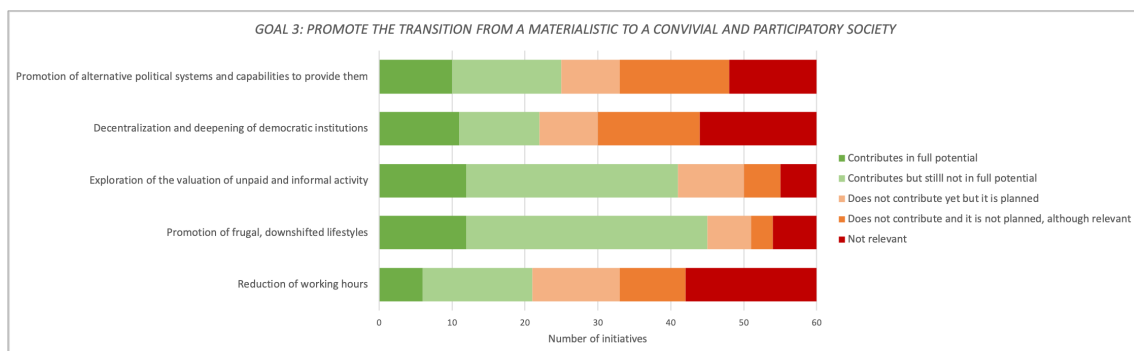


Figure 31 Results for the contribution of initiatives to Goal 3, aggregated for Portugal

7.3.3.6. DEGROWTH ASSESSMENT FOR ALENTEJO REGION

There are six initiatives (n=6) aggregated in the Alentejo region, and the results for this region are presented in Figures 32 (DG1), 33 (DG2) and 34 (DG3). Practical examples that the initiatives gave for the three goals can be found in Figure 35.

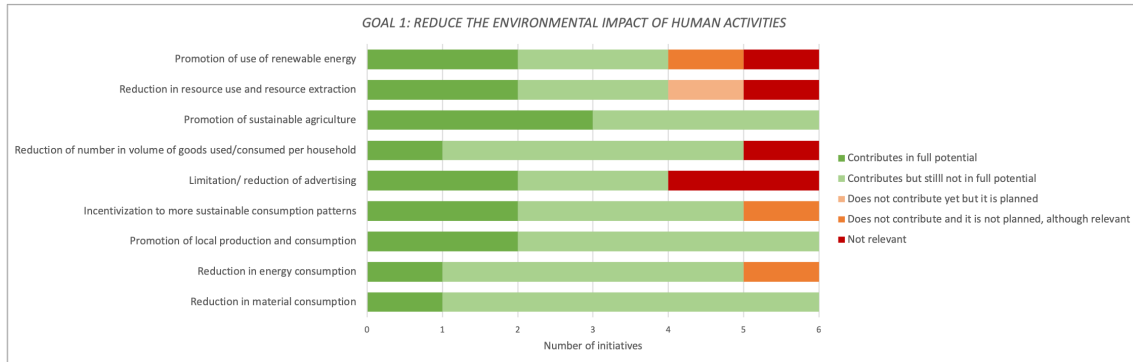


Figure 32 Results for the contribution of initiatives to Goal 1, aggregated for Alentejo region



Figure 33 Results for the contribution of initiatives to Goal 2, aggregated for Alentejo region

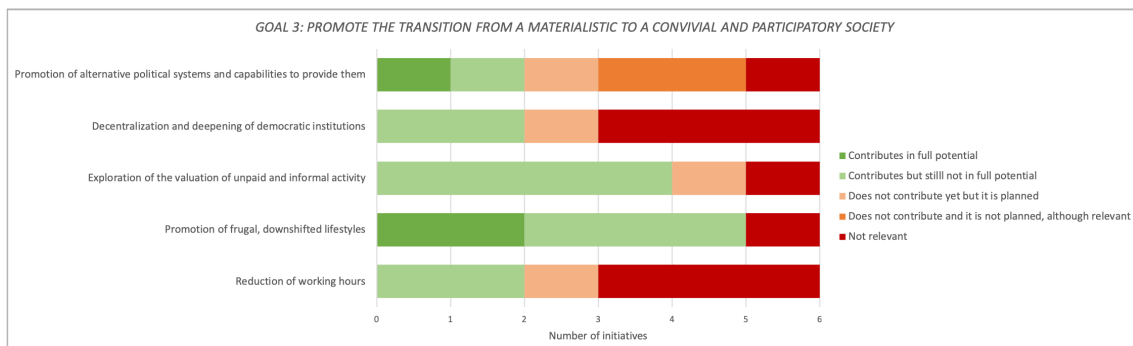


Figure 34 Results for the contribution of initiatives to Goal 3, aggregated for Alentejo region

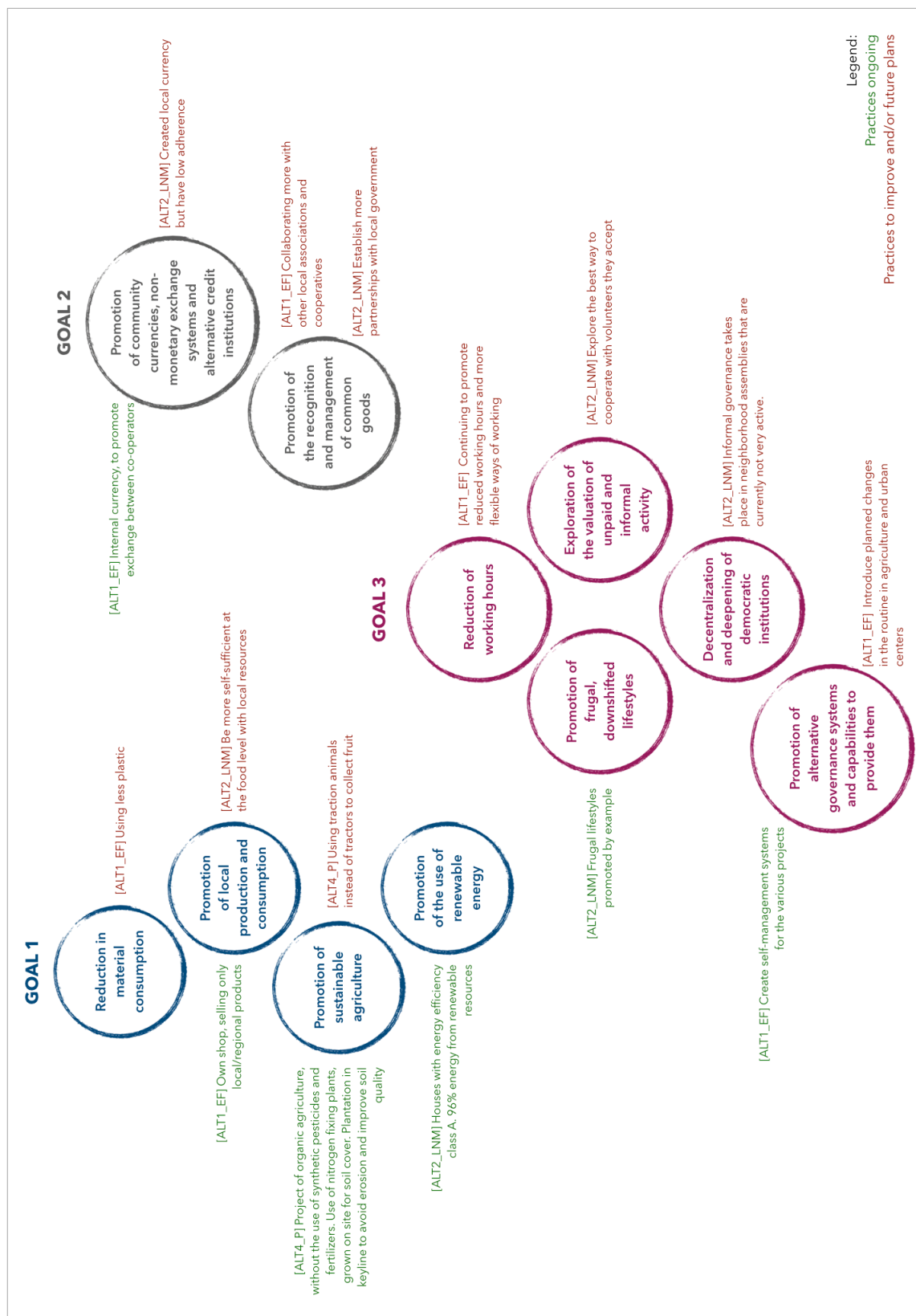


Figure 35 Practical examples from the initiatives' responses – Alentejo region

In the Alentejo region, DG1 is the goal where we can find the major contribution of the initiatives, being the *promotion of sustainable agriculture* the most prominent contribution. Examples of this contribution are preferring organic agriculture and choosing production techniques that avoid the use of chemicals (e.g. use of nitrogen fixing plants, plantation in keyline). Then we have also the *promotion of local production and consumption* and the *reduction in material consumption*. These three criteria have 100% of the initiatives contributing to them, whether in their full potential or in progress. Examples of this contribution are the opening of a shop with only local/regional products for the first criterion and preferring unpackaged items or with less plastic packaging for the second criterion.

The criteria *incentivization to more sustainable consumption patterns* and *reduction in energy consumption* are the next with a most relevant contribution, and also marked by one initiative as relevant but not implemented. In terms of efforts to reduce energy use, there is the example of the energy efficient houses of an initiative with a rural tourism area. Again, in this region, as in the overview for Portugal, the *limitation/reduction of advertising* is the criterion considered less relevant for the initiatives. In general, there is space for a fuller contribution of the initiatives in all the criteria in this goal.

The initiatives in this region are not contributing significantly for DG2, although most of them contribute or have something planned to contribute in the future. Examples of contribution to this goal are the efforts to use community currencies (with more or less success depending on the initiative) and the willingness to collaborate with other local associations.

In DG3 we can see that the criteria *reduction of working hours* and *decentralization and deepening of democratic institutions* are the ones that more initiatives find less relevant for them. The criterion with most contribution is the *promotion of frugal, downshifted lifestyles*, followed by the *exploration of the valuation of unpaid and informal activity*. The promotion of frugal lifestyles is pointed by an initiative as a natural consequence of their lifestyles, and that they promote it by giving the example. In terms of the valuation of informal work, most of the contribution is related to the acceptance of volunteers in the projects in exchange for goods/services.

7.3.3.7. DEGROWTH ASSESSMENT FOR ALGARVE REGION

There are five initiatives (n=5) aggregated in the Algarve region and the results for this region are presented in Figures 36 (DG1), 37 (DG2) and 38 (DG3). Practical examples that the initiatives gave for the three goals can be found in Figure 39.

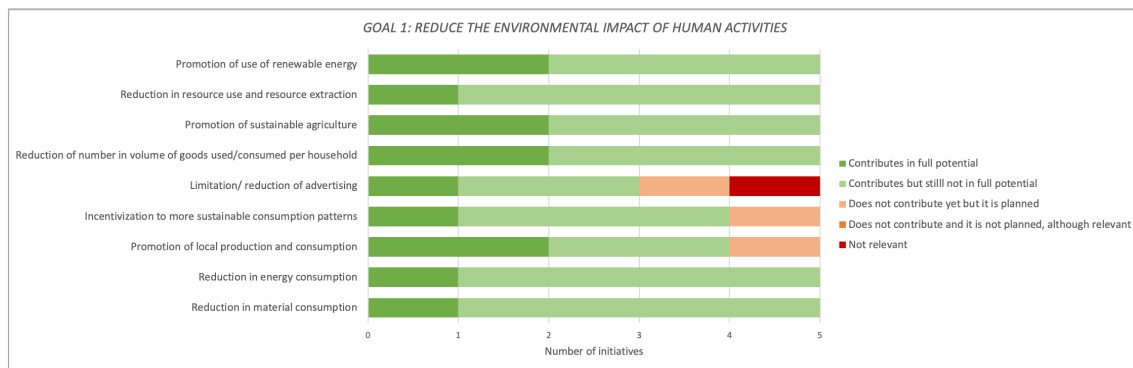


Figure 36 Results for the contribution of initiatives to Goal 1, aggregated for Algarve region



Figure 37 Results for the contribution of initiatives to Goal 2, aggregated for Algarve region

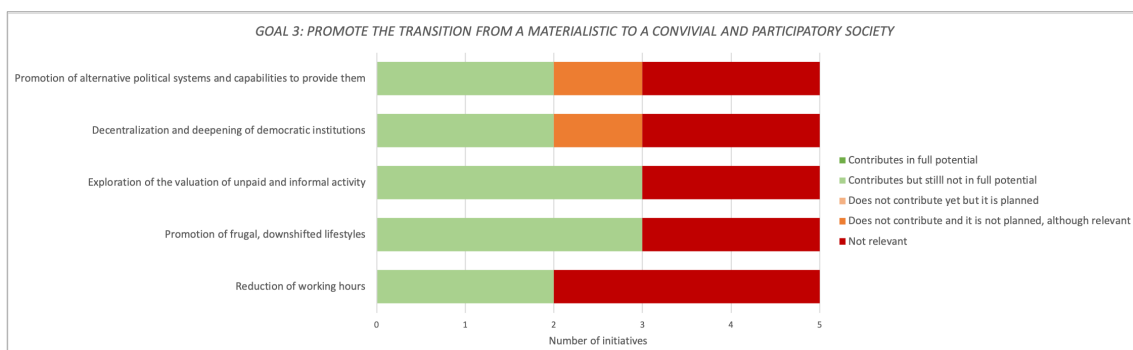


Figure 38 Results for the contribution of initiatives to Goal 3, aggregated for Algarve region

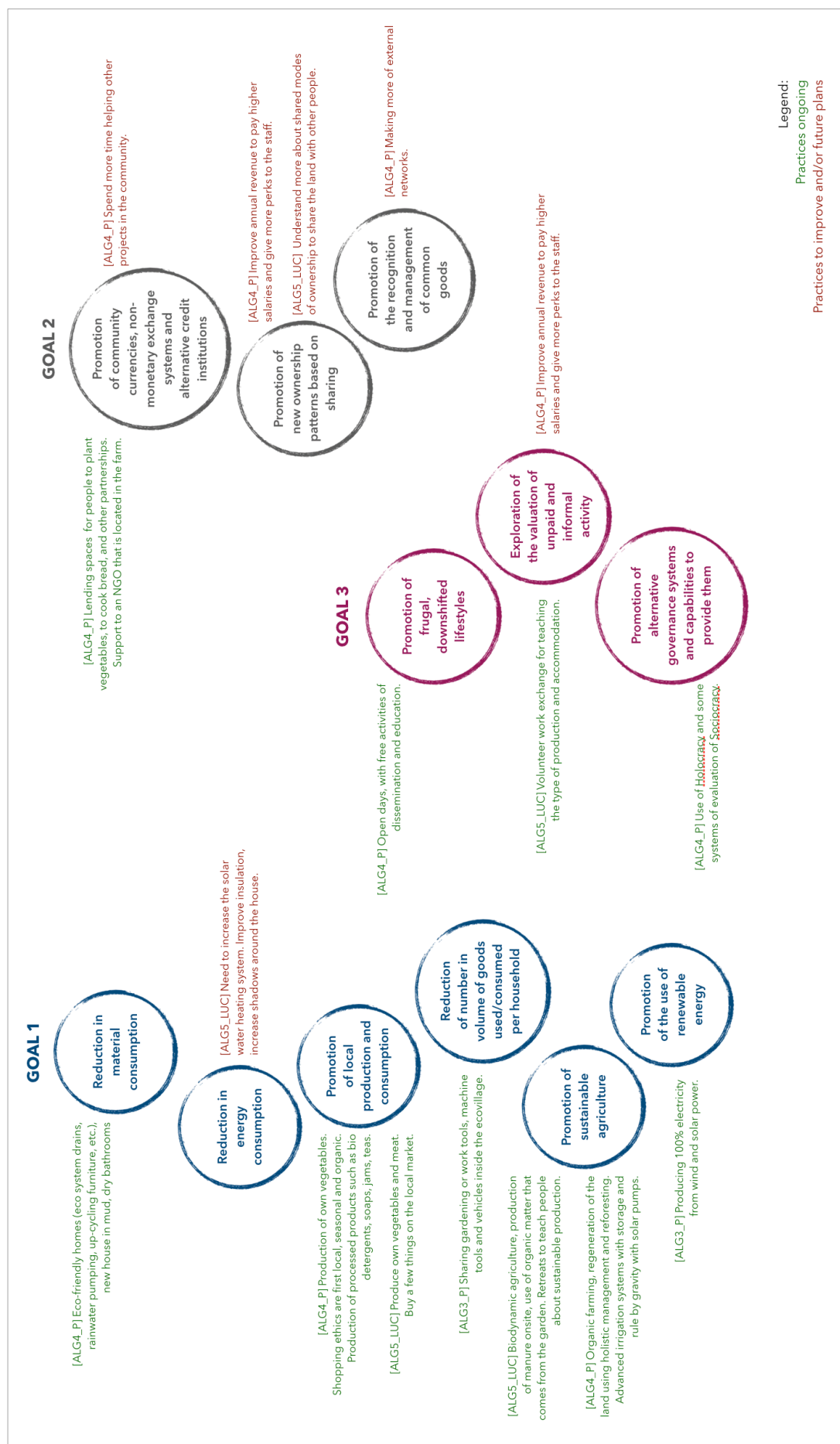


Figure 39 Practical examples from the initiatives' responses – Algarve region

In the Algarve region, DG1 is also the one with most contributions. All of the initiatives considered that they were contributing to six out of the nine criteria. The ones with a stronger contribution were the *promotion of use of renewable energy* (e.g. producing electricity with wind and solar panels), *promotion of sustainable agriculture* (e.g. regeneration of the land using holistic management and reforestation), *reduction of number in volume of goods used/consumed per household* (e.g. sharing gardening and work tools) and the *promotion of local production and consumption* (e.g. production of own vegetables). The criterion that has the least contributions is the *limitation/reduction of advertising*.

In this region, DG2 is also the one in which less initiatives feel that their activities contribute to it. The criterion that seems to have more potential for future contribution, based on the answers, is the *promotion of new ownership patterns based on sharing*. Examples that are already being practiced are having common spaces for vegetable production and cooking bread, among other communitarian practices.

As for DG3, some initiatives found the criteria irrelevant, and some considered that they contribute to them. The criteria with most contributions are the *exploration of the valuation of unpaid and informal activity* (e.g. exchanging volunteer work for accommodation and training), and the *promotion of frugal, downshifted lifestyles* (e.g. open days and free activities to get to know the work done in the initiative).

7.3.3.8. DEGROWTH ASSESSMENT FOR CENTRO REGION

There are ten initiatives (n=10) aggregated in the Centro region and the results for this region are presented in Figures 40 (DG1), 41 (DG2) and 42 (DG3). Practical examples that the initiatives gave for the three goals can be found in Figure 43.

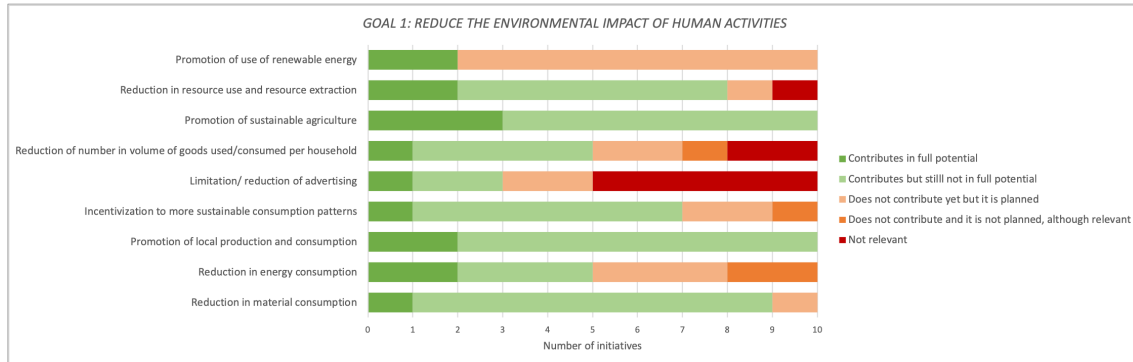


Figure 40 Results for the contribution of initiatives to Goal 1, aggregated for Centro region

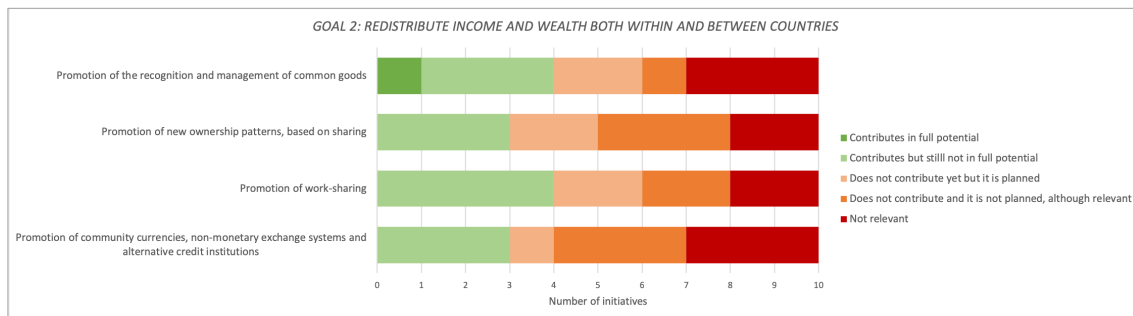


Figure 41 Results for the contribution of initiatives to Goal 2, aggregated for Centro region

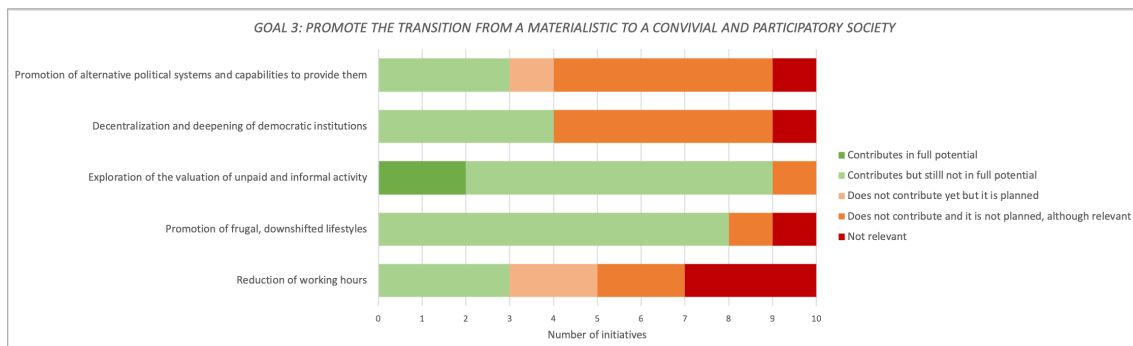


Figure 42 Results for the contribution of initiatives to Goal 3, aggregated for Centro region

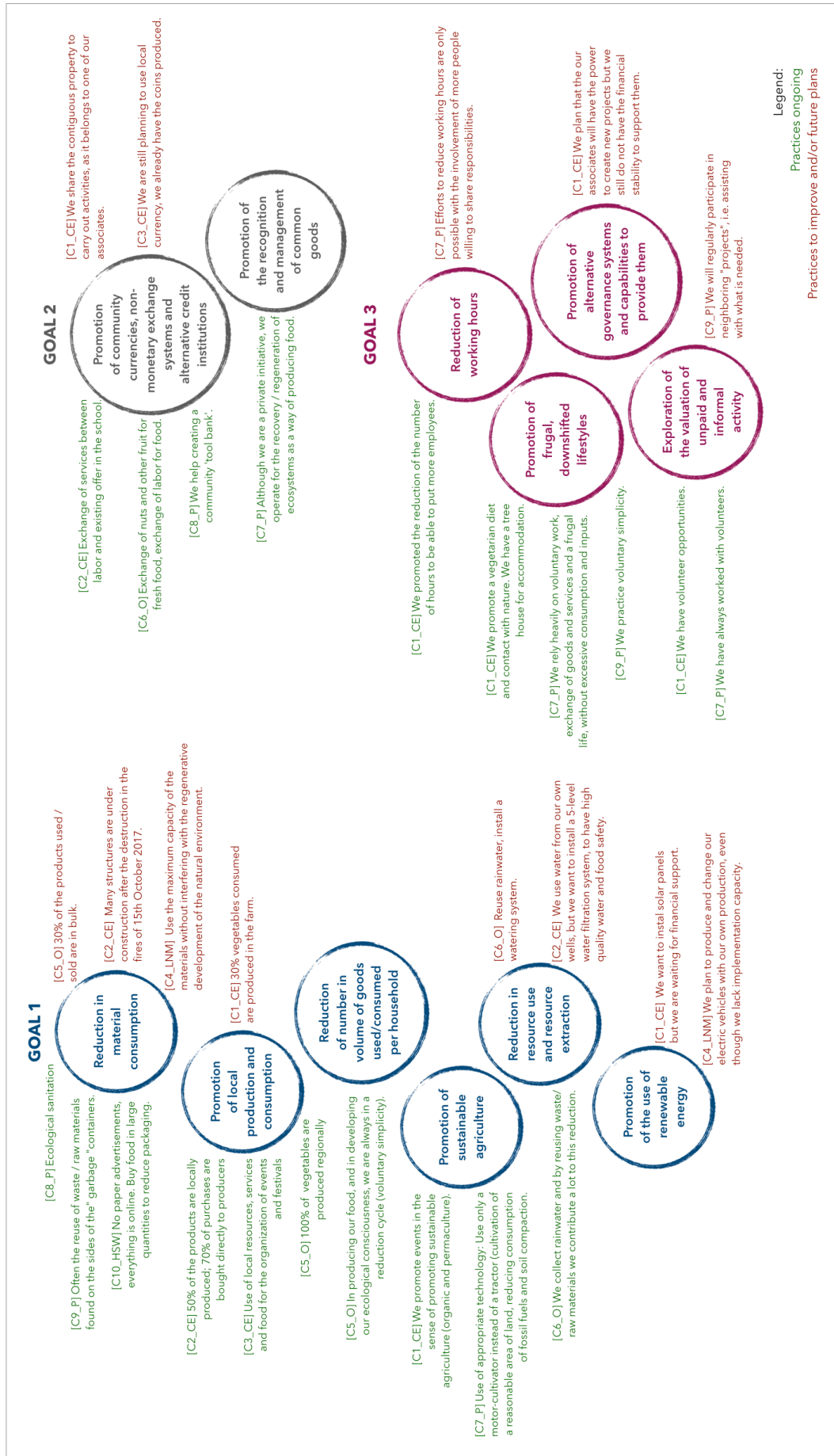


Figure 43 Practical examples from the initiatives' responses – Centro region

In the Centro region, DG1 has also the most contributions, although the results are offer more variety than in the two previous regions. This might be due to the higher number of responses. The criteria that have most contributions are the *promotion of sustainable agriculture* (e.g. use of appropriate and simpler technology for agricultural purposes) and the *promotion of local production and consumption* (e.g. use of local products and services for the organization of events). The criteria that have more potential to contribute in the future seem to be the *promotion of the use of renewable energy* (due to the high number of initiatives that claim that do not contribute but have plans for the future), as well as the *incentivization to more sustainable consumption patterns, reduction in energy consumption and reduction in material consumption*. Once more, the criterion that has the least contributions is the *limitation/reduction of advertising*.

DG2 is also the one with less contribution in this region, although it might have potential to be enhanced in all criteria. The future plans of some initiatives for this goal include to use a local currency as a way to promote the localization of consumption.

As for DG3, the criteria with most contributions are the *exploration of the valuation of unpaid and informal activity* (e.g. working with volunteers) and the *promotion of frugal, downshifted lifestyles* (e.g. living without excessive consumption, promoting a vegetarian diet and contact with nature). The other criteria have a great potential to be improved. From the examples the initiatives gave, some practices that could contribute to these criteria in the future were finding people to share the responsibilities in the initiative, allowing for a reduction in the working hours, giving more autonomy to people inside the initiative to create new projects, and participating more regularly in neighbouring projects.

7.3.3.10.DEGROWTH ASSESSMENT FOR LISBON REGION

There are twenty-four initiatives (n=24) aggregated in the Lisbon region and the results for this region are presented in Figures 44 (DG1), 45 (DG2) and 46 (DG3). Practical examples that the initiatives gave for the three goals can be found in Figure 47.

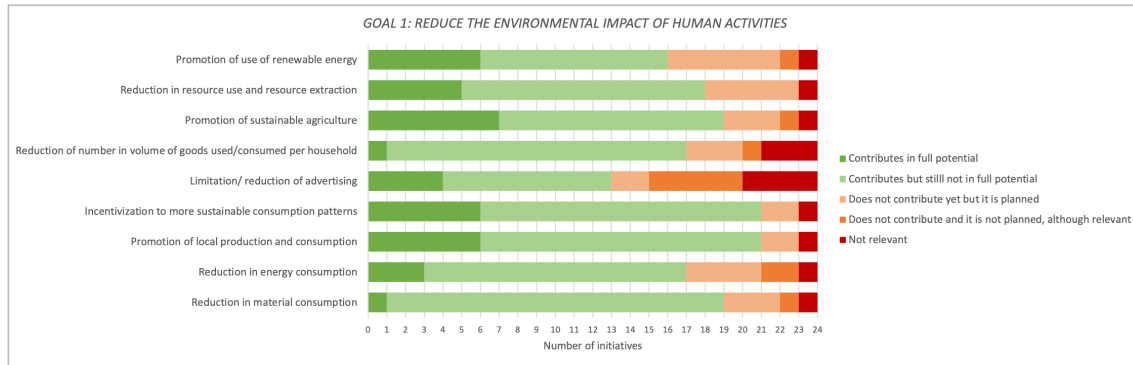


Figure 44 Results for the contribution of initiatives to Goal 1, aggregated for Lisbon region

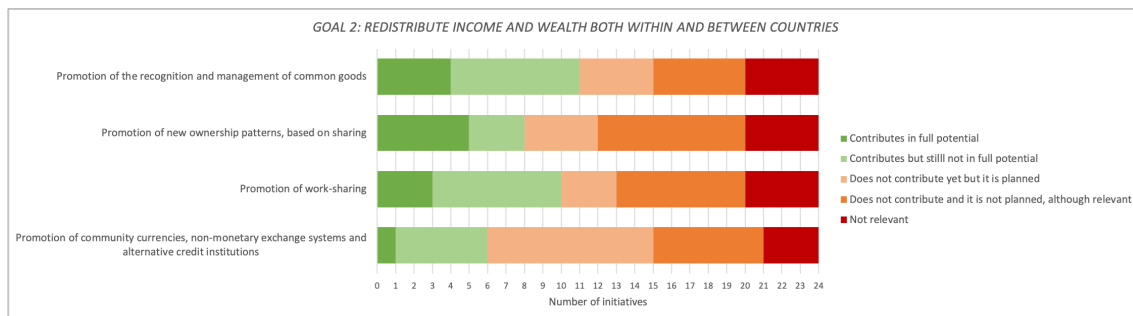


Figure 45 Results for the contribution of initiatives to Goal 2, aggregated for Lisbon region

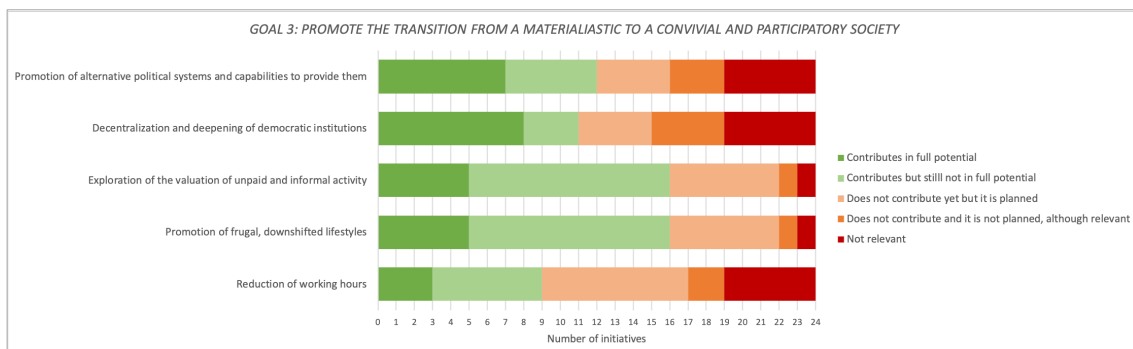


Figure 46 Results for the contribution of initiatives to Goal 3, aggregated for Lisbon region

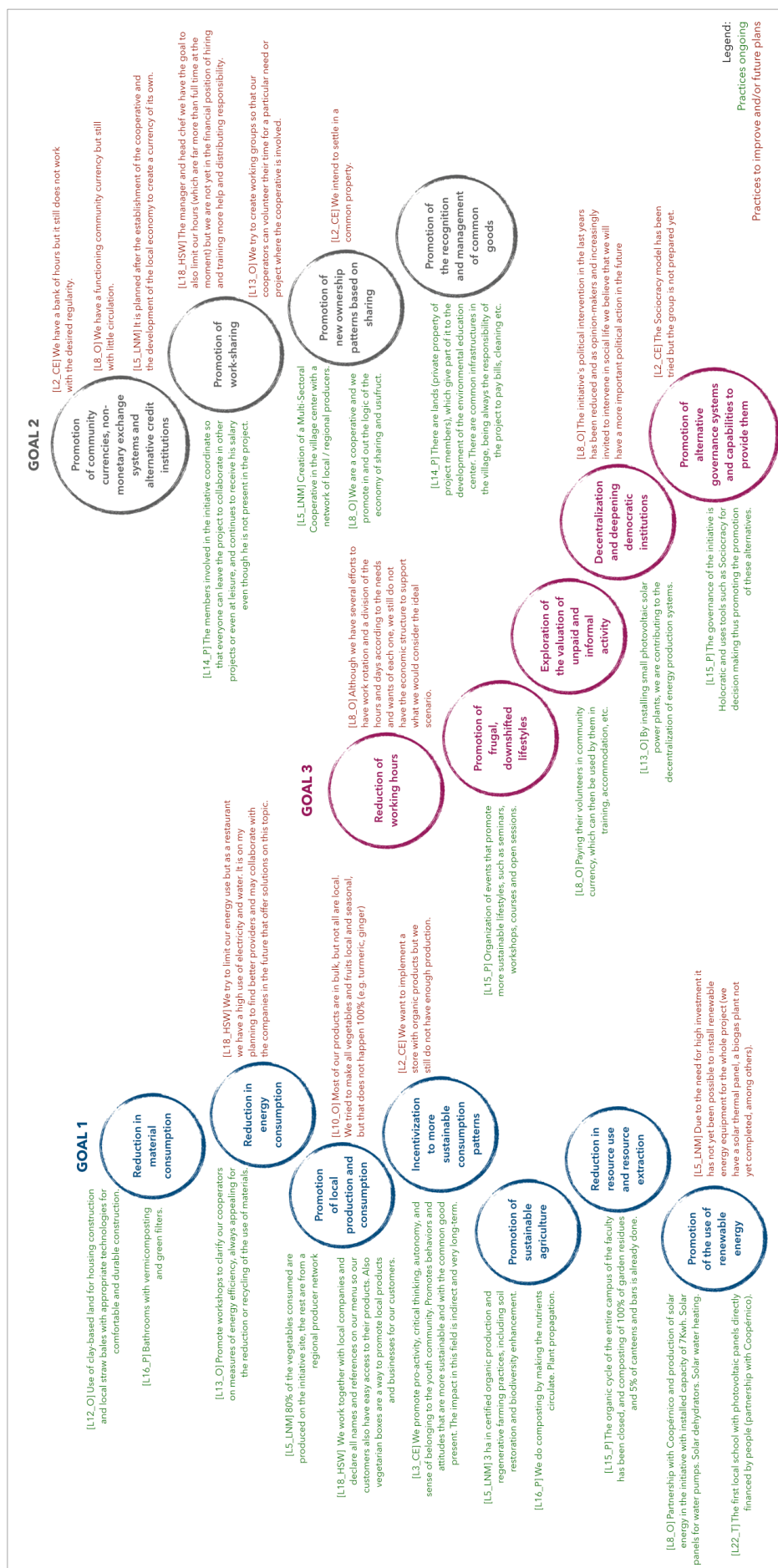


Figure 47 Practical examples from the initiatives' responses – Lisbon region

In the Lisbon region, DG1 continues to be the goal with most contributions. The criteria with most contributions are *incentivization to more sustainable consumption patterns* (e.g. promotion of proactivity, critical thinking, autonomy and sense of belonging to the youth community) and *promotion of local production and consumption* (e.g. collaborating with local companies and promoting their products). Limitation/reduction of advertising is again the criterion with less contributions but with potential for progress. Many initiatives have much space for improvement in the other criteria. An example is the criterion of *promotion of the use of renewable energy*, in which an initiative claimed that it is a high investment to install renewable energy equipment that provided electricity to the whole project.

The pattern continues in this region of DG2 being the goal with less contributions, but great space for improvement. Interesting examples provided by the initiatives are related to some alternative experiments being carried but that are not yet working at 100%, such as a bank of hours and community currencies. Good examples of practices already in place are the creation of a multi-sectoral cooperative with local/regional producers and the time management between members of an initiative that allow them to have flexible working hours.

DG3 in Lisbon region initiatives has also much space to improve. The criteria that have the most contributions are again to the *exploration of the valuation of unpaid and informal activity* (e.g. paying volunteers with the community currency) and the *promotion of frugal, downshifted lifestyles* (e.g. organization of events that promote more sustainable lifestyles). There are also examples of pursuing alternative governance systems, such as holocracy and sociocracy. Another interesting example is the mention of an initiative that installs small photovoltaic solar power plants, contributing this way for the decentralization of energy production systems. This example was given referring to their contribution to *decentralization and deepening of democratic institutions*.

7.3.3.11.DEGROWTH ASSESSMENT FOR NORTE REGION

There are fourteen initiatives (n=14) aggregated in the Norte region and the results for this region are presented in Figures 48 (DG1), 49 (DG2) and 50 (DG3). Practical examples that the initiatives gave for the three goals can be found in Figure 51.

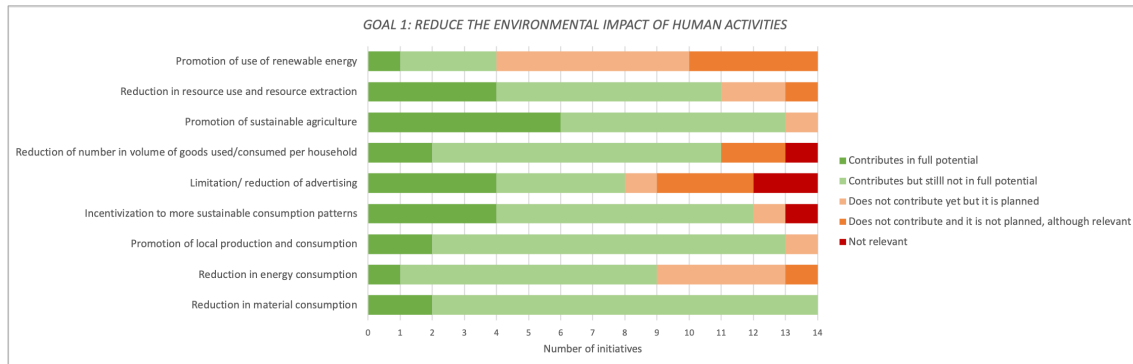


Figure 48 Results for the contribution of initiatives to Goal 1, aggregated for Norte region



Figure 49 Results for the contribution of initiatives to Goal 2, aggregated for Norte region

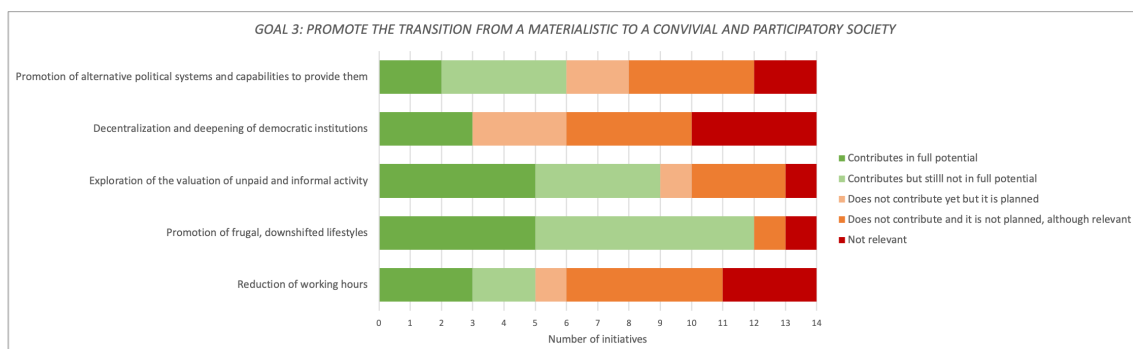


Figure 50 Results for the contribution of initiatives to Goal 3, aggregated for Norte region

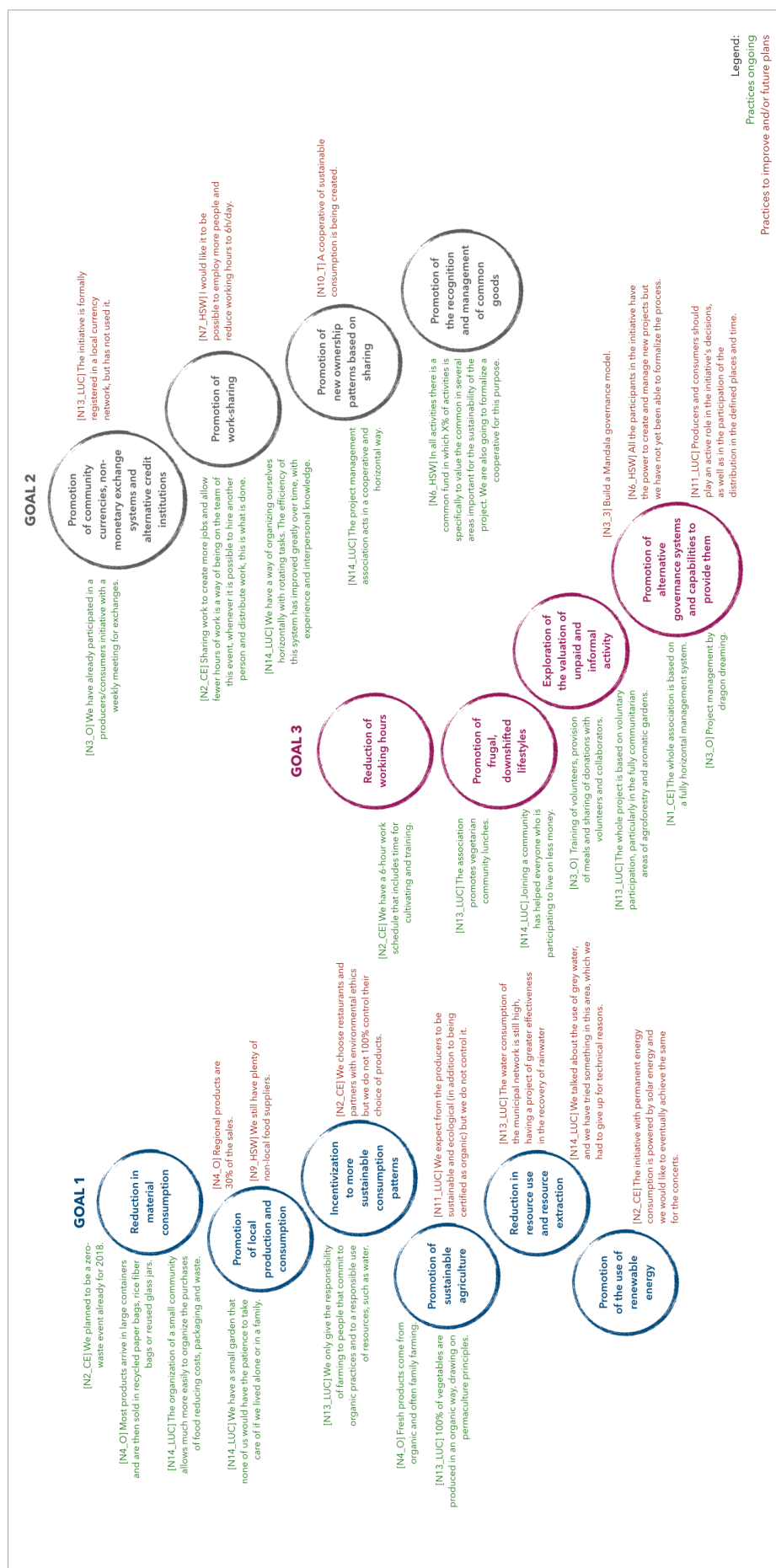


Figure 51 Practical examples from the initiatives' responses – Norte region

In the Norte region, DG1 is again the one where we can find the major contribution of the initiatives. 100% of the initiatives claim that they contribute to the criterion of *reduction in material consumption*, giving examples of zero waste practices, such as buying products in large quantities to avoid the extra packaging. Living in a community also is seen as a way to reduce material consumption, since purchases are organized more easily and allow to reduce waste. Then we have the criteria *promotion of sustainable agriculture* and *promotion of local production and consumption*. Examples of this contribution are cultivating or buying products from organic and small farms, in the case of the first one, and having a community garden. Limitation/reduction of advertising is again the criterion with less contributions.

Unsurprisingly, DG2 is also the one with less contributions from the initiatives in this region. The criterion with most contributions is the *promotion of the recognition and management of common goods*. An example of a practice that contributes to this is the creation of a common fund to be used for protecting the commons. Then we have the *promotion of new ownership patterns based on sharing*, illustrated with the example of an initiative that claims that the project management functions in a cooperative and horizontal way.

In DG3 it can be observed that the *promotion of frugal, downshifted lifestyles* is the criterion with most contributions. Examples of contributions are the promotion of vegetarian community lunches in one of the initiatives, and the communal living in general promoted by another initiative, claiming that this has had the effect of members being able to live with less money. The other criteria have much space to improve, and examples for future plans include building alternative governance models (Mandala model) and giving more autonomy for participants to create and manage new projects.

7.3.4. DISCUSSION OF FINDINGS

The results of the degrowth assessment show interesting patterns. It was observed at a national level that DG1 was the goal that got more contributions from the initiatives' practices, followed by DG3 and then DG2. The same was verified in every region, when analysing the disaggregated results. This finding points to the hypothesis that these initiatives start with the ecological concerns first or mature them easier than the other concerns. Within DG1, it was also observed that the criteria with a direct link to environmental impacts (e.g. reducing material consumption) have more contributions than the indirect ones (e.g. limitation/reduction of advertising). In a follow-up study, it would be interesting to understand which were the motivations for starting the initiatives and to understand if they have visions for the future related to the other goals.

Some of the open questions revealed that many practices or future plans of the sustainability initiatives in Portugal are well aligned with the degrowth perspective. Many examples emerged that showed the will of the initiatives to reduce material, energy and resource consumption in simpler ways, such as reusing waste, having dry toilets, using or selling products in bulk and even living in a small community. The sharing of spaces and developing tool banks are other indicators of an alignment with degrowth goals.

There were also many initiatives that already had, tested or were planning to have local currencies to promote the localization of the economy. It would be interesting to understand in a deeper way the impact that these currencies are having at the local level, and what are the factors for their success. This would be useful to help other initiatives that are not being able to implement the currencies successfully to understand why that is happening.

Other pattern observed was the fact that many of the initiatives already had in place a system of direct exchanges of help between people (usually farmers), while others show the will to spend more time in the future helping other projects in the community. This is also an indicator that the initiatives have this intrinsic will not only to do their own projects but help other people outside their boundaries. Other initiatives talk more widely about this openness to the exterior by claiming that they want to

exploit the potential of their networks or, for instance, to work more closely with local governments. One initiative identified that not having valued in the past the ties to the neighbourhood they lived in had consequences in the present social impact of the initiative.

Few initiatives claimed that they actively implemented a shorter working schedule, although some showed their interest in the subject. Some barriers were identified from the respondents' answers, such the difficulty to find people that want to share the responsibilities, the lack of time to train more people to distribute the responsibilities and the lack of economic structure to support having a higher work rotation and division of hours. One initiative said they work in terms of objectives and not in terms of hours, what can be a solution for the type of initiatives that have more flexibility to organize the work.

The lack of financial means was not an issue brought up very often in the answers. The initiatives that mentioned that issue mainly referred to the high costs of installing renewable energy systems and to not being able to offer more jobs.

Another interesting topic that was not very mentioned by the initiatives was related to the limitation/reduction of advertising. One respondent said: "the use of advertising is essential for our work because we are here creating the need to consume organic products". This issue might be common to many of the initiatives that responded. The problem with advertising in the degrowth debate is the creation of needs that people did not have, and that often are not sustainable. However, this response shows that the discourse of banning advertising is not clear, since it can be used to help niche sustainable markets to scale up. Although this criterion might need clarification, we consider important to keep it in mind, even for more sustainable products and services, since the rational here is not to substitute unnecessary unsustainable products for more sustainable ones.

The exploration of alternative governance systems that are more horizontal and aim at self-organization, such as holocracy and sociocracy models, is a characteristic that some initiatives in Portugal are already putting in practice or trying to implement. It would also be interesting to understand the results that these kinds of governance models are having and to identify the implementation barriers.

The use of the online survey presents the risk of misunderstanding of some of the criteria. Although some questions were clarified by email or phone, this was not the case for the majority of the respondents. A way to improve this would be to do the survey in person. On the other hand, doing a face-to-face survey about perceptions also carries the risk of influencing too much the answers with the clarification of the criteria. For more robust results, an independent analysis should be done by the researcher, based on interviews and observation of the practices.

7.4. CASE STUDY B (REGIME LEVEL): THE CONTRIBUTION OF THE GREEN TAX REFORM IN PORTUGAL TO A DEGROWTH TRANSITION

7.4.1. DESCRIPTION OF THE CASE STUDY

This section presents the second case study of the thesis, which is an in-depth analysis of the process of GTR in Portugal that occurred during 2014. The GTR process was chosen as an exemplification of a top-down instrument designed to promote behaviour change towards sustainability (MAOTE, 2014).

The GTR project in Portugal was based on the assumption of Fiscal Neutrality, which means that “the net increase in revenue must be used to reduce other taxes, notably on income” (CRFV, 2014a, p. 5). This intends to provide a triple dividend: “to protect the environment and to reduce dependence on foreign energy; to promote growth and employment; to contribute to fiscal responsibility and to reduce external imbalances” (CRFV, 2014a, p. 5).

The GTR commission was composed by ten people with different backgrounds, (law, accounting and public administration, environmental and ecological economics). The team working method was composed by: (i) to contact with experts, to understand the ‘state of the art’ in the scientific arena; (ii) to contact with international experiences, to do a benchmark of good practices; (iii) to do an informal pre-sounding of stakeholders; (iv) to do an impact assessment (technical report, mainly focused in environmental, economic and budget impacts); and (v) to send the document for public consultation, to get the formal feedback from the stakeholders (Vasconcelos, 2014).

The GTR projects are usually done by a committee of experts, nominated by the Government. This committee then works in groups and order specific studies to other

experts (if needed) to develop the GTR project proposal. This proposal is then made available to public consultation, and finished after that period, with the inclusion of the relevant proposals for changes. The final document is then discussed in parliament, voted, and passed into law.

In the Portuguese case, after the members of the GTR committee were officially appointed by the Government (officially in 7th February 2014, but have started working in the end of January), the process unfolded in five different stages (CRFV, 2014a):

- Stage 1 (29th January – 30th March 2014): Members of committee discuss and define the guiding principles of the reform.
- Stage 2 (30th March – 30th June 2014): Period for receiving feedback from a number of potentially interested parties in the reform. These entities were asked to give their opinion on which environmental aspects should be useful to improve or suppress in the Portuguese tax system.
- Stage 3 (30th June 2014): After a careful analysis of the contributions, the Reform Draft Project was delivered by the Committee to the Government.
- Stage 4 (15th July – 15th August 2014): Period of public consultation, with a total of 111 contributions of natural and legal persons.
- Stage 5 (15th September 2014): After analysing the public consultation contributions, the draft was modified and delivered by the Committee to the government.

The final project was subject to an independent assessment by the Government, being the final document approved by the parliament in 26th November 2014 and published as Law no. 82-D / 2014 of December 31, 2014 (CRFV, 2014a).

7.4.2. DATA COLLECTION

In this research, both the final project and the law of the GTR were analysed. This was done since there was a significant amount of proposals in the project that were changed or eliminated in the transposition to the law. However, these were plausible proposals for the Portuguese environmental and socioeconomic contexts, and so it was

considered that they could enrich the content of this study and translate into ideas for future GTR processes.

The GTR proposals and recommendations were retrieved from the GTR final project from the Commission for the GTR (CRFV, 2014b), and summarized in Tables 18 – 22. The GTR law measures were retrieved from the legal document (*Lei n.º 82-D/2014 de 31 de dezembro da Assembleia da República*) and summarized into Tables 23 and 24. Codes were attributed to the individual measures and then these codes were used to fill the Degrowth Assessment Framework checklist for policy instruments, available in Chapter 6 (Table 14).

Table 18 GTR project measures (with the code used), their description and goals

Category	Code	Measure	Description
Energy and emissions	P1	Carbon tax	Unit tax value is indexed to the previous year's carbon trading price that reflects the arithmetic average price of EU ETS.
	P2	Provision for reconstitution of the environment	Eliminate the polluter subsidy in the context of repairing the environmental damage of certain activities and going back to the legislative logic of the polluter-payer (i.e. eliminate harmful subsidies). Broaden the concept to other areas for justice reasons.
	P3	Fixation of the amortization period for wind and photovoltaic equipment	Amortization taxes for renewable energy equipment to potentiate the renewal and new investments.
	P4	Exemption of fuel tax for electricity	Exemption of fuel tax for electricity production and heat (cogeneration).
	R1	Carbon tax for CELE and ARCE sectors	Create a carbon tax as a part of fuel tax (ISP), in order to be applied to non-EUETS schemes and to ARCE sectors (<i>Acordos de Racionalização dos Consumos Energéticos</i>).
	R2	Creation of certificates for energy efficiency (white certificates)	Incentive to energy efficiency, giving the economic agents the freedom to choose how to improve efficiency in their sector.
	R3	Expenses with the reconstitution of fossil fuel deposits	Eliminating fiscal incentives to the reinvestment in fossil fuel exploration.
	R4	Tax environmental harmful goods	Taxing goods that have for e.g. poor energy or water efficiency, when a better substitute exists in the market.
	P5	Tax on aeroplane transport of passengers	Tax flights with origin in PT and destination outside Europe, and the opposite. Limit the exemption situations. Simplicity in the collection and administration of the tax.
Transports	P6	Introduce a limit value of purchase of electric passenger vehicles up to which they can be tax deductible (for companies and individuals)	Limit value of 62.500€. Incentive to less pollutant vehicles.

Table 19 GTR project measures (with the code used), their description and goals (continuation)

Category	Code	Measure	Description
Transports	P7	Introduce a limit value of purchase of hybrid plug-in passenger vehicles up to which they can be tax deductible (for companies and individuals)	Limit value of 50.000€. Incentive to less pollutant vehicles.
	P8	Increase the limit value of purchase of LPG and CNG passenger vehicles up to which they can be tax deductible (for companies and individuals)	Limit value of 37.500€. Incentive to less pollutant vehicles.
	P9	Reduce taxes for companies that purchase for LPG and CNG passenger vehicles	Reduction of 25%. Incentive to less pollutant vehicles.
	P10	Reduce taxes for companies that purchase hybrid plug-in passenger vehicles	Reduction of 50%. Incentive to less pollutant vehicles.
	P11	Collective public transportation vouchers	Changes in the labour taxes so that a part of the salary can be given to the employees as public transportation voucher, not subject to taxation.
	P12	Acquisition of collective public transportation vouchers by companies	Incentives to the companies buying vouchers and passes for public transportation.
	P13	Incentives for electric, LPG and CNG public transport vehicles	Incentive to the use of electricity for public transport vehicles. Eliminate the incentive for fossil fuels with the exemption of LPG and CNG.
	P14	Vehicle tax	Aggravating vehicle tax based on CO2 emissions.
	P15	Revision of CO2 limit for taxis	Change the limit of CO2 emissions of taxis from 175g/km to 160g/km in the context of maintaining a fiscal incentive.
	P16	Tax deduction on the purchase, manufacture or importation, leasing, use, conversion and repair of tourism cars	Deduction of the VAT in electric and hybrid plug-in tourism vehicles. Deduction of 50% of the VAT in LPG and CNG tourism vehicles.
	P17	Changes in vehicle tax and tax over vehicle circulation for electric, hybrid non-plug-in, hybrid plug-in, LPG and CNG passenger vehicles	Exemption of vehicle tax and tax over vehicle circulation for electric passenger vehicles. Reducing vehicle tax and tax over vehicle circulation for hybrid non-plug-in (60% taxation), hybrid plug-in (25% taxation), LPG and CNG (40% taxation) passenger vehicles.
	P18	Tax incentive to end-of-life vehicle renovation	Giving the possibility of the person receiving a public transport voucher (2000€) or using the incentive of buying a new vehicle less pollutant.
	P19	Incentive to buying, repairing and maintenance of bikes	Reducing VAT on repairing services. Tax incentives for collective buying of bikes from a company to their employees.
	P20	Incentive to car-sharing and bike-sharing	Incentives to companies that use these services for their employees.
	P21	Eliminate the tax on conversion of combustion motor vehicles to electric equipment	Incentive the renovation and conversion of combustion motor vehicles to electric equipment.

Table 20 GTR project measures (with the code used), their description and goals (continuation)

Category	Code	Measure	Description
Transports	R5	Congestion tax in big cities	Internalize private transport externalities (air pollution).
	R6	Progressive taxation of fuel	Eliminate in a progressive way the fiscal benefits for diesel fuel, to reach eventually the same taxes than other fuels.
	R7	Incentive to agricultural machines renovation	Creation of a subsidy that promotes the trade of old agricultural machines to more energy efficient ones.
	R8	Ecotax creation for nature leisure or tourism activities	Internalize environmental externalities of these activities outside appropriate places.
	R9	Incentive for bike commuters (for companies)	Widen the present transport subsidies given to employees to those who use bikes as mean of transportation.
	R10	Incentive to biofuels	Exemption of fuel tax in biofuels produced using other products or sub-products.
Water	P22-34 R12, 13, 14, 16	Amendment of water resources tax (TRH)	Aggravate water tax for dryer years and for water use in sensitive areas (P22, P28). Review exemptions to water tax (P23, P24, P34, R12). Incentive to reduce water losses along the network (P25). Incentive to use grey waters (P26). Incentive to efficient use of water in agriculture (P27). Giving more transparency to the use of the fund for the protection of water resources (P30). Reduction of water tax for companies certified by ISO 14001 or EMAS (P32). Review water tax for hydric powerplants so that environmental externalities are internalized (R13). Develop a study on harmful substances (nitrates and pesticides) so that they can be taxed with the water tax (internalizing externalities of irrigation) (R16).
	P35	Review incentives to new dams	Remove incentives from dams that are not contributing to the coverage of electricity.
	R11	Promote rainwater collection and use in buildings and create a certification for water efficiency in buildings	Review law to allow the use of rainwater in buildings. Reduction of property tax to certificate buildings.
	R15	Create a market for pollution licences	Study the potential launch of a pilot system of a market for pollution licences for the water resources.
	R17	Incentives for industries being connected to urban water management systems	Create incentives to connect industrial units to the public wastewater systems in the cases that the system has capacity and that the activity system does not have adequate systems.
	R18	Incentives to the construction of separative water systems	Create incentives to the construction and efficient operation of separative water systems.

Table 21 GTR project measures (with the code used), their description and goals (continuation)

Category	Code	Measure	Description
Water	R19	Amendment of VAT application in the water sector	Introduce an amendment for wastewater management systems always being taxed in VAT (reinterpretation of “water distribution” concept in the law).
Waste	P36	Tax on lightweight plastic bags	Creation of a tax on lightweight plastic bags (0,10€ per bag) with the goal to reduce their use to a max 35 bags per year per capita.
	P37	Amendment of VAT application in the waste sector	Introduce an amendment for urban waste management systems always being taxed in VAT.
			Incentives to recycling, reutilization or material substitution, to avoid landfilling waste (P39, P40, P44).
			Earmarking waste tax to promote improvements in the waste management (P41).
	P38-45	Amendment of waste management tax (TGR)	Reduction of residues tax for companies certified by ISO 14001 or EMAS (P42). Create minimum value for waste tax and removing exemptions (P43). Giving more transparency to the use of the revenue from the waste tax (P45).
Territory management	P46	Incentive to energy efficiency and to the use of rainwater and greywater	Reduction of the property tax.
	P47	Incentive to buildings destined for the production of renewable energy	Reduction of 50% of property tax.
	P48	Incentive to buildings destined to the public water supply, sanitation and urban waste management held by municipalities	Exemption of property tax.
	P49	Incentive to urban buildings subject to rehabilitation	Increase of the period of exemption of property tax.
	P50	Local corporate tax	Enforcement of this tax.
	P51	Determination of property tax (IMI) applicable to urban buildings	Review the property tax of new urban buildings.
	R20	Tax for buildings unoccupied over a year	Review the tax to be less harmful.
	R21	Municipal tax for tourists	Internalization of tourism negative externalities.
Forestry	P52-55 R22	Amendments in property tax for farm buildings	Increase property tax for abandoned rural properties (P52, P54, P55). Local authorities have to report situations, or else the revenue of those property taxes go to the National Emergence Fund (P52). Incentives to investment in forests (P53).

Table 22 GTR project measures (with the code used), their description and goals (continuation)

Category	Code	Measure	Description
Biodiversity	P56	Amendments in property tax for farm buildings	Incentives for farm buildings inside protected areas that provide ecosystem services.
	P57	Part of the resulting revenue of plastic bag tax will strengthen the Nature Conservation Fund and finance projects of classified areas in municipalities (NATURAL.PT program)	Earmarking part of the revenue from the plastic bag tax to the Nature Conservation Fund, due to the significant impact that plastic bags are having in the ecosystems.
	R23	Reinforce the ecological fiscal transfers mechanism	Improve the EFTs effectiveness by turning them a separate component of municipal budgets, increasing the value given to local governments, involve people in the revision of this instrument, giving more money to actions that improve ecosystem services.
	R24	Incentive to sustainable production and consumption	Incentives to more research in the food production and consumption industry to create in the future proposals to improve sustainability.
Others	P58	Incentive to the transparency of the management of environmental funds	Mandatory annual report.
	P59	Possibility of consignment of labour taxes to ENGOS	Incentive to ENGO.
	R25	Transfer the audio-visual tax to the service bill and turning its goals more transparent	No proposal.
General recommendations	RG1	Guarantee fiscal neutrality in future processes	To guarantee the desired effects of the efficient recycling of the revenue.
	RG2	Guarantee fiscal progressivity	To guarantee that future applications of the revenue from the GTR are used to compensate eventual regressive effects of some measures.
	RG3	Develop green accounting	To expand the environmental satellite-accounts and create conditions for the National Statistics office to create and update an integrated information system. To implement measures for improving the non-financial information reporting of the companies.
	RG4	Harmonize and publicize environmental information	To create an environmental portal that allowed citizens, researchers, companies and everyone interested to easily access reliable and updated data from a variety of sources (public administration). To implement adequate mechanisms for monitoring environmental performance of the relevant sectors, to understand the impact of current public policies and argue the need for their revision.
	RG5	Create tools for assessment and aid of decision-making that combine environmental, social, economic and budget aspects	To do a contract with universities and public laboratories for developing and using these tools.
	RG6	Review policies of sectorial regulations	To articulate the sectorial economic regulation with environmental national policies.
	RG7	Rationalize environmental funds	To review, organize and articulate the different existent environmental funds to potentiate their efficacy.

Table 23 GTR law measures (with the code used), their description and goals

Category	Measure	Description
A. Energy and transports	A1. Carbon tax	Unit tax value is indexed to the previous year's carbon trading price that reflects the arithmetic average price of EU ETS.
	A2. Vehicles tax	Aggravates vehicles tax for gasoline and diesel vehicles, based on CO2 emissions.
B. Public Transportation	B1. Incentives for electric vehicles	Incentives for electric, plug-in hybrid, LPG and CNG vehicles by increasing the maximum amount of depreciation acceptable as tax expenses and the reduction of separate tax rates on individuals' and companies' labour taxes. Exemption of taxes for conversion of vehicles to electric.
	B2. VAT deduction in electric tourism vehicles	VAT deduction in electrical tourism vehicles, plug-in hybrid, LPG and CNG applied to expenditure on purchase, manufacture or import, leasing and transformation of vehicles.
	B3. Incentive on bike-sharing and car-sharing	Incentives on the creation of bike-sharing and car-sharing systems in companies and to the acquisition of bicycle fleets by the increase of eligible costs of associated services and goods.
	B4. Tax incentive to end-of-life vehicle renovation	Tax incentives in the form of vehicle tax (ISV) return or by the assignment of an allowance, by purchasing a new electric or plug-in hybrid vehicle.
	B5. VAT deduction in bike reparation services	VAT deduction for services of repairing and maintenance of bikes.
C. Waste	C1. Tax on lightweight plastic bags	Lightweight plastic bags will be subject to a contribution of 8 cents + VAT. Additional measures: awareness campaigns to consumers; information on recycling bags; offering alternatives in the stores, at affordable prices.
	C2. Review of waste management fee	Reference value of 5.5€/ton in 2015 and gradually increasing to 11€/ton in 2020 for landfilling waste.
D. Territory and forestry	D1. Amendment of property tax (IMI) and IMT	Reduce by 50% the collection of property tax in buildings destined for the production of renewable energy and farm buildings built in classified areas that provide ecosystem services. Reduce up to 15% the collection of property tax in urban buildings energy efficient (certificate A or +; use of grey waters). IMI exemption for buildings destined to the public water supply, sanitation and urban waste management held by municipalities. IMI and IMT exemption for farm buildings that correspond to ZIF adherent forest areas or which are subject to forest management plans. IMI reduction for farm buildings integrated in land exchange.
	D2. Local corporate tax	In case more than 50% of a company's turnover results from the exploitation of natural resources (such as mining and energy production) in a single municipality, the local corporate tax revenues shall be allocated to this municipality and not to the one where the company has his official premises.
F. Net revenue to recycle in 2015	F1. Relief of personal labour taxation, especially for families with more children	Part of the logic chosen for the GTR.

Table 24 GTR law measures (with the code used), their description and goals (continuation)

Category	Measure	Description
E. Water	E1. Reduction of water tax	5% for or companies certified by ISO 14001 or EMAS (or other recognized certification scheme, for the use of public water and effluent treatment components. 25% to 40% for effluents treatment component when having good practices. 10% for efficient use of water in irrigation agriculture.
	E2. Aggravation of water tax	20% when effluents are sent to vulnerable water systems.
G. Others	G1. Possibility of consignment of labour tax to ENGOS	Measure to add ENGOS to the list of NGOs that have the possibility to receive 0,5% of the labour tax.
	G2. Mandatory reports on management of Funds (Permanent Forest Fund, Carbon Fund, Fund for protection of water systems, Fund for nature conservation, Fund for energy efficiency)	Measure for transparency improvement.

7.4.3. RESULTS

The degrowth assessment results are summarized in Table 24. The results point to an alignment between degrowth goals and GTR proposals and measures of around 50% for the GTR project and 29% for the GTR law. The degrowth goal more aligned with the GTR proposals and measures is Goal 1 – Reduce the environmental impact of human activities (7 criteria matched), followed by Goal 2 - Redistribution of income and wealth both within and between countries (3 criteria matched) and Goal 3 - Promote the transition from a materialistic to a convivial and participatory society (2 criteria matched).

Table 25 Results from the GTR degrowth assessment checklist

		GTR project			GTR law		
Potential of contribution		Low	Moderate	High	Low	Moderate	High
 GOAL 1 Reduce the environmental impact of human activities	Reduction in material consumption	P49		P36			C1
	Reduction in energy consumption		P46, R2				
	Promotion of local production and consumption			R24			
	Incentivization to more sustainable consumption patterns	P6, P7, P8, P9, P10, P18, P21, R5, R24	P14, P16, P17	P11, P12, P13, P19, P20, P36, R4, R9	B1, B2, B4	A2	B3, B5, C1
	Limitation/reduction of advertising						
	Reduction of volume of goods used/consumed per household						
	Promotion of sustainable agriculture	P27, R7		P56, R16, R24	E1		
	Reduction in resource use and extraction	P35	R15	P25, P26, P27, R3		E1	
	Promotion of the use of renewable energy			P3, P47		D1	
 GOAL 2 Redistribution of income and wealth both within and between countries	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions						
	Promotion of a fair redistribution of resources through redistributive policies of income and capital assets						
	Promotion of work-sharing						
	Creation of a basic/citizen income						
	Improvement of social security and investment in public goods to guarantee equal access to goods and services, to protect from poverty and exclusion						
	Creation of salary caps						
	Promotion of new ownership patterns based on sharing						
	Implementation of redistributive taxation schemes						
	Promotion of the recognition and management of common goods		P50	P52, P53, P54, P55, P56, P57, R23		D2	
 GOAL 3 Promote the transition from a materialistic to a convivial and participatory society	Promotion of the shift of costs from labour to capital			RG1			F1
	Reduction of working hours						
	Promotion of frugal, downshifted lifestyles						
	Exploration of the value of unpaid and informal activity			P59			G1
	Decentralization and deepening of democratic institutions	P30, P45, P58, R25	RG4		G2		
	Promotion of alternative political systems and capabilities to provide them						

7.4.3.1. GOAL 1: REDUCE THE ENVIRONMENTAL IMPACT OF HUMAN ACTIVITIES

The first degrowth criterion that made a match with GTR proposals was the “Reduction in material consumption”. It was considered that proposal P49, incentive to urban buildings subject to rehabilitation, contributes to the criterion by incentivizing rehabilitation of old buildings instead of constructing new ones. This was not included in the GTR law.

The proposal P46, incentive to energy efficiency and to the use of rainwater and greywater, and recommendation R2, creation of certificates for energy efficiency (white certificates), were considered contribute for the “Reduction in energy consumption”, since they incentivize energy efficiency. These were not included in the GTR law.

The recommendation R24, incentive to sustainable production and consumption, was considered to contribute for the “Promotion of local production and consumption”, since it encourages more research in the food production and consumption for improving its sustainability. If this research is, for instance, focused on the short cycles of production and consumption or on valuing local products, as a way to improve sustainability in the food sector, a future measure could contribute to this degrowth criterion.

The criterion “Incentivization to more sustainable consumption patterns” has matched with several proposals and recommendations from the GTR project and measures from the GTR law. Starting with the proposals P6 – P10, all connected to the creation of incentives for turning less pollutant vehicles cheaper to buy and use for companies and individuals (following a hierarchy of incentives more favourable of electric, followed by hybrid plug-in, and finally LPG/CNG passenger vehicles). Adding to these ones, we can find proposal P21, eliminating the tax on conversion of combustion motor vehicles to electric equipment’s. Proposals P6-P10 and P21 were aggregated in GTR law in measure B1, incentives for electric vehicles. Proposal P14, and correspondent measure A2, vehicle tax, is also included due to the signal it gives to consumers to prefer vehicles that emit less CO₂. Proposal P16, and corresponding measure B2, tax deduction on the purchase, manufacture or importation, leasing, use, conversion and repair of tourism cars, can also be considered an incentive to more sustainable consumption in the tourism sector. Next is proposal P18, tax incentive to end-of-life vehicle renovation,

and partly corresponding measure B4 in the GTR law, that gives the possibility to receive the vehicle tax from the old vehicle when exchanging it for an electric vehicle. In the proposal, it was also considered that the end-of-life vehicle could be exchanged by a public transportations voucher. Then we have proposal P19, incentive to buying, repairing and maintenance of bikes, and the partially corresponding measure B5 in the GTR law (VAT deduction in bike reparation services), are also considered to contribute to this criterion. Also, proposal P20, incentive to car-sharing and bike-sharing, and corresponding measure B3 in the GTR law, promotes using less the individual means of transportation.

The next match is proposal P36, and correspondent measure C1, which is the creation of a tax on lightweight plastic bags. This measure was introduced into the legislation with the following recommendations associated: a) to improve awareness and incentivize final consumers to use alternatives to plastic bags and reuse them; b) to promote practices of selective waste disposal of plastic bags that cannot be reused, to be recycled; c) to make available affordable alternatives to plastic bags.

Some other proposals and recommendations made in the GTR project that did not get to the GTR law were also considered to match with this criterion, namely: R4, tax environmental harmful goods, which is aimed at goods with, for example, low energy or water efficiency (when a better substitute is available in the market); P11, collective public transportation vouchers; P12, acquisition of collective public transportation vouchers by companies; P13, incentives for electric, LPG and CNG public transport vehicles; P17, changes in vehicle tax and tax over vehicle circulation for electric, hybrid non-plug-in, hybrid plug-in, LPG and CNG passenger vehicles; R5, congestion tax in big cities; R9, incentives for bike commuters (for companies); and R24, incentive to sustainable production and consumption, which is aimed at incentivizing research in the food production and consumption industry to improve its sustainability.

The next match is between the degrowth criterion “Promotion of sustainable agriculture” and the proposals P27, incentive to efficient use of water in agriculture and P32, reduction of water tax for companies certified by ISO 14001 or EMAS. These proposals were incorporated into measure E1 in the GTR law.

Other proposals and recommendations were included here and were not included in the GTR law: P56, amendments in property tax for farm buildings; R7, incentive to agricultural machines renovation; R16, develop a study on harmful substances (nitrates and pesticides) so that they can be taxed with the water tax (internalizing externalities of irrigation); and R24, incentive to sustainable production and consumption, which was considered to contribute to this criterion since its goal is to incentivize more research in the food production and consumption industry to create specific proposals in future GTR reforms to improve sustainability in these sectors.

The criterion “Reduction in resource use and extraction” can be matched to proposals P26, incentive to use grey waters, and P27, incentive to efficient use of water in agriculture, which were incorporated into measure E2 in the GTR law. Other proposals and recommendations were considered to contribute to this criteria, but they were not included in the GTR law: R3, eliminating fiscal incentives to the reinvestment in fossil fuel exploration; P25, incentive to reduce water losses along the network; P35, remove incentives from dams that are not contributing to the coverage of electricity; R15, create a market for pollution licences, since this recommendation focuses the need to study the potential launch of a pilot system of a market for pollution licences in the specific case of water resources.

The last match is the “Promotion of the use of renewable energy”, and it can be found in proposals P3, fixation of the amortization period for wind and photovoltaic equipment (to potentiate the renewal and new investments) and P47, incentive to buildings destined for the production of renewable energy (reduction of 50% of property tax). The proposal P47 was included in the GTR law inside measure D1, amendment of property tax (IMI) and IMT, since one of the items of this measure is to reduce by 50% the collection of property tax in buildings destined for the production of renewable energy and farm buildings built in classified areas that provide ecosystem services.

7.4.3.2. GOAL 2: REDISTRIBUTION OF INCOME AND WEALTH BOTH WITHIN AND BETWEEN COUNTRIES

The “Promotion of the recognition and management of common goods” is a criterion comprehensive enough to fit many different actions. Among the GTR project

proposals and recommendations, P50, enforcement of the local corporate tax, was the only one that we considered to match and that was incorporated into the GTR law as measure D2. This measure was considered since it has potential to be a way of the municipalities finance the management of common goods through the revenues from the local income tax, when applicable.

The following proposals and recommendations were considered to contribute to this criterion and were not incorporated into the GTR law: P52/54/55, increase property tax for abandoned rural properties; P53, incentives to investment in forests; P54, amendments in property tax for rural property; P56, incentives for farm buildings inside protected areas that provide ecosystem services; P57, part of the resulting revenue of plastic bag tax will strengthen the Nature Conservation Fund and finance projects of classified areas in municipalities (NATURAL.PT program); R23, reinforce the ecological fiscal transfers mechanism.

Diving into more detail, proposals P52 and P54 have different focuses, being them respectively the tax penalization for having abandoned rural properties with forest area, or with low property value and low-income owners. Proposal P55 aims to lower the effect of these two measures by proposing to increase the value of the technical exemption from which the property tax is charged. Proposal P53 intends to incentivize the use of abandoned rural property for agriculture, forestry or silvopastoral systems. The recommendation R23 aims to suggest changes in the way the Ecological Fiscal Transfers¹² are made, by separating them from other parts of the funds that the municipalities receive, by increasing its value, by improving the inclusion of stakeholders in the process, and by earmarking part of this fund for improving nature and biodiversity conservation at the local level.

The criterion “Promotion of the shift of costs from labour to capital” is found in the methodology and aims of the policy instrument. The fiscal neutrality principle determines that the fiscal changes proposed do not increase the tax revenues for the state, instead they are balanced out by the decrease of other taxes (CRFV, 2014b). By

¹² The Ecological Fiscal Transfer is a mechanism that allows to compensate local governments for spillover benefits, management costs or opportunity costs associated with conservation policies (see Santos et al., 2015)

applying this principle and defining that the taxes that should decrease are the labour taxes, the GTR is contributing to this criterion. This is also materialized in recommendation R1, to guarantee the fiscal neutrality in future GTR processes and in the GTR law measure F1, relief of personal labour taxation, especially for families with more children.

7.4.3.3. GOAL 3: PROMOTE THE TRANSITION FROM A MATERIALISTIC TO A CONVIVIAL AND PARTICIPATORY SOCIETY

The criterion “Exploration of the value of unpaid and informal activity” can be found in GTR project proposal P59, possibility of consignment of labour taxes to ENGOs, which was accepted and transposed to the GTR law as measure G1. This measure allows people, in a voluntary way, to consign 0,5% of the labour taxes to be attributed to the support of ENGOs, what in a way is a signal to support voluntary work in the field of environment.

Finally, the last criterion that has found a match in this GTR process was the “Decentralization and deepening of democratic institutions”. It was considered that the process of stakeholder consultation has contributed to the advancement of this criterion, since the GTR Commission contacted several entities that could be interested in presenting suggestions for the process and had meetings with the ones that requested, what enabled the possibility to include their concerns and suggestions in the GTR draft. Then, the GTR draft was available for public consultation for a period of time (one month), during which the Commission received 111 contributions, both from entities and individuals (CRFV, 2014b). The final GTR project has considered these contributions and all of them got an answer by the GTR Commission.

From the proposals and recommendations, we considered that P58, incentive to the transparency of the management of environmental funds, and P30, giving more transparency to the use of the fund for the protection of water resources, aggregated present in measure G2 from the GTR law, are essential steps to this criterion.

Also considered as contributors were: P45, giving more transparency to the use of the revenue from the waste tax; R25, transfer the audio-visual tax to the service bill and turning its goals more transparent; and RG4, harmonize and publicize

environmental information. P45 and R25 have the same rational as the first ones, to make governmental actions more transparent. As for RG4, it would have a parallel function that would be extremely important for keeping citizens, researchers and companies up to date relating to environmental information, and for monitoring the impact of these measures and other public policies.

7.4.4. DISCUSSION OF THE FINDINGS

The measures considered to have a higher potential in the GTR law for contribution were: B3 - Incentive on bike-sharing and car-sharing; B5 - VAT deduction in bike reparation services; C1 - Tax on lightweight plastic bags; F1 - Relief of personal labour taxation, especially for families with more children; G1 - Possibility of consignment of labour tax to ENGOs. Measures B3 and B5 are the two directly connected with a degrowth perspective, since they send a signal to the economic agent towards a preference for shared mobility systems (bikes and cars) and to the reparation of bikes. In these measures the economic agents that are being focused are mainly families and for-profit organizations, being the effect focused on the individual and collective level. This goes in line with degrowth proposals of redirecting investments away from infrastructure in fast and car-based models of transport to slow-modes (Alexander, 2013; Sekulova et al., 2013; Xue, 2014).

Measure C1 is an incentive to individuals (final consumers) mainly to use alternatives to plastic bags and reuse them, and to the industrial sector to make available affordable alternatives to plastic bags. This has the potential to change behaviours of individuals towards using less plastic and reusing it, and to direct innovation in the industry towards finding better alternatives to plastic. This way not only are we promoting strong sustainable consumption (Lorek and Fuchs, 2013) due to the reducing factor aimed, but also promoting innovation in the right direction (Pansera and Owen, 2016). Despite this contribution, this is one of the measures that could easily be turned into a more radical one, for instance by simply banning plastic bags and this way forcing more sustainable options, as it is already the case in many European countries.

Measure F1, the recycling of net revenue from the GTR measures being applied to the relief of personal labour taxation, is one part of the overall logic chosen for the GTR process. This is also a measure acclaimed by degrowth proponents as a step in the right direction, defending a logic of shifting costs from labour to capital (e.g. Kallis, 2013; Schneider et al., 2010; Tokic, 2012). Measure G1 gives a clear signal to the possibility of the tax payers to donate money indirectly to support the work of environmental NGOs, and thus it is considered as a form to value informal/volunteer work. From a degrowth perspective, the valuation of informal work is very important, since it helps to move into the direction of decommodification of work activity and it can have a significant role for individuals' well-being (Nierling, 2012).

There is a great potential of recapturing the GTR to gradually follow a degrowth perspective. Kallis (2015) proposed the following measures as part of a Green Tax Reform that would contribute to a degrowth transition: to implement an accounting system to transform progressively the tax system from being based mainly on work to be based on the use of energy and resources; to reduce the taxation on the lowest incomes and compensate the revenue loss with a carbon tax; to establish a 90% tax rate on the highest incomes; to create high income and capital taxes, to cease positional consumption and eliminate the incentives for excessive earnings; to tackle capital wealth through inheritance tax and high taxes on property that is not meant for use (e.g. 2nd or 3rd houses of individuals or on large estates). However, in a GTR process, these measures had to be assessed in the light of the national context.

Although preferring the use of the term “no-growth”, Jackson (2017, 2009) agrees with some of these degrowth-related proposals in his book “Prosperity without Growth”. The author mentions in his work that taxes on carbon or on resource use could be designed to be fiscally neutral, and in that way, taxpayers would be compensated through a reduction in labour taxes (Jackson, 2009). Despite there is some progress towards this principle in European countries, also seen in the Portuguese case focused here, the author considers that the progress towards a meaningful GTR remains very slow (Jackson, 2009). The author also mentions capital taxation and also more regulatory measures such as having minimum and maximum income levels, as a potential policy measures that a progressive state should engage with (Jackson, 2017).

The scoping interviews presented in Chapter 4 can also give some insights to the improvement of the GTR processes. The most important insight might be the one that every participant emphasised, which was the fact that economic instruments for behaviour change towards more sustainable societies cannot be seen in an isolated manner, they have to be seen as part of a much deeper and complex sociological process of change. Additionally, it is useful to recover the concept of “narratives of change” as an important tool for promoting change, since if people do not understand why taxes are being increased or created, the social acceptability of taxes might decrease. This argument is backed up by studies about obstacles to GTR processes (Dresner et al., 2006; Withana, 2015).

7.5. MAIN CONCLUSIONS

7.5.1. CASE A: SUSTAINABILITY INITIATIVES

Sustainability initiatives in Portugal are contributing to many degrowth criteria. Degrowth Goal 1 is the one that has more contributions, what demonstrated a high concern of the initiatives regarding ecological issues. Many practices are aligned with the degrowth collaborative and convivial perspective, for example the voluntary simplicity philosophy of living, the efforts to localize production and consumption, the direct exchange of goods and services, and the use of community currencies.

Further work on this topic could be done by analysing and observing the practices of the initiatives (visiting the locations and talking to members) and by understanding not only their contribution but also the main barriers (financial, technical, others) to enhance their contribution. It would also be important to explore how the degrowth-related niches could be more protected, who would protect them, how this protection should be transformed along the years and declines when the innovation enters the regime.

7.5.2. CASE B: GREEN TAX REFORM

There is still much room to grow in terms of transforming future GTR processes to be more aligned with degrowth goals. Although GTR is usually aligned with a Green

Growth perspective (MAOTE, 2014), the measures in the Portuguese case have the potential to contribute to various different degrowth criteria, as shown by the results.

The degrowth goal more aligned with the GTR proposals and measures is Goal 1 – Reduce the environmental impact of human activities, which is not very surprising since the environmental dimension is the most important in a process of this kind.

Some criteria have matches in the GTR proposals and/or measures, but it is not clear what is the relevance of their contribution without having goals for the criteria in mind. This can be seen, for instance, in the analysis of the criterion “Promotion of the recognition and management of common goods”, since many proposals could be fitted in this very open criterion.

Some potentially relevant proposals to promote a reduction in consumption, a core concern of the degrowth perspective, were not considered in the GTR law. It would be interesting to understand the reasons behind the acceptance or not of the GTR Commission proposals by the Portuguese state.

7.5.3. INSIGHTS FOR THE IMPROVEMENT OF THE DEGROWTH ASSESSMENT FRAMEWORK

From case study A, the main insights for the improvement of the degrowth assessment framework came from the method chosen for the data collection: the online survey. Although this method was crucial to have an overview of a higher number of initiatives, it gives a lower chance to extract data that would help to explain the results. The main lesson learned was that this method was good for a screening phase but that the study could be deepened recurring to interviews and observation of the initiatives' practices. This was also confirmed by the feedback received from some of the initiatives, which invited the author to visit them and learn more about their practices. Some respondents also showed some difficulties in rating their contributions. It was showed that the open answers were very important to understand both the alignment of the initiatives with the degrowth perspective and the way the respondents interpreted the questions. In their great majority, the initiatives that gave more information in the open answers seemed to be understanding what the criteria meant.

From case study B, the main insights for improvement were related to the limitation identified during the analysis of the data collected. After filling in the checklist comparing the proposals and measures from the Portuguese GTR, it was clear that some of the measures had a much higher potential for contribution to degrowth criteria than others. This led the author to add a scale to the checklist, composed by the levels low, moderate and high potential for contribution. This was particularly relevant since we were not expecting *a priori* that the GTR process was well aligned with the degrowth perspective, since it was developed with a (green) growth perspective in mind.

In sum, the degrowth assessment framework applied to the sustainability initiatives can be improved by adding more questions that are important to understand the context of the initiatives (e.g. adding a question about the motivations for their development) and if they had any enablers from public policies to appear. When applied to policy instruments, the framework can be improved by adding a scale to the checklist to provide a range of the contribution. In this work it was still possible to add that level of analysis since it would only mean to review the already collected data and rearrange it.

8. FINAL REFLECTIONS AND CONCLUSIONS

Debates around ecological and social limits to economic growth and new ways to deal with resource scarcity without compromising human wellbeing have re-emerged in the last few years, especially with the increasing calls for a degrowth approach. This work had the main theme of exploring degrowth theory and practice to tackle the multiple social, economic and environmental crisis modern societies are facing.

The main motivation for this research was to contribute for translating degrowth theory into pathways for concrete actions. We started by exploring the roots, principles and meanings of degrowth in academic literature. This led into an exploration about how to articulate bottom-up and top-down initiatives into a coherent framework for transition. Then, a group of degrowth scholars were interviewed, to discuss what might be the role of the state and the role of civil society in a degrowth transition, how to articulate values and structure different policy-making processes for being more inclusive and collaborative, and to a certain point how this transformation process makes democracies stronger. The following step was to explore some of the existent theories about sustainability transitions, to better explain a degrowth transition path in theory and to plan strategic actions. From these theories, the multi-level perspective was chosen as a conceptual basis. As degrowth requires deep changes in the fundamental structures of current society, this theory was adapted to this particular vision. The next step was to find a method for translating the contribution of the niche innovations (the bottom-up initiatives) and the regime reforms (top-down initiatives) to the regime shift in a degrowth direction. At this stage, the degrowth assessment tools (DGTools) were developed, based on the degrowth goals and proposals retrieved from the literature review. To test the framework, the assessment tools were applied to the Portuguese context, encompassing two case studies: Sustainability initiatives voluntarily created by civil society (bottom-up) and the Green Tax Reform process (top-down).

8.1. KEY FINDINGS: REVISITING THE RESEARCH QUESTIONS AND OBJECTIVES

Before giving the answers to the research questions, we will present four general messages that emerged from this work. The first message is that degrowth is not a homogenous vision for a sustainable future, it is the recognition of the plurality of values and legitimate viewpoints that share the overall or parts of the degrowth vision and goals. None of these particular values or viewpoints should be hegemonic in a regime-shift. The pathways to reach degrowth goals can be multiple, and one of the insights retrieved from the degrowth literature and interviews was that it is crucial that these paths are built collectively to be legitimate and effective. Exploring the way of functioning of democratic institutions, specially how people's viewpoints are articulated in the policy-making processes, is essential to understand what should change institutionally to promote this deep societal transformation.

The second message is that degrowth focus is on reducing the scale of human activities and increasing social justice, instead of increasing efficiency. Efficiency is treated marginally, it is only the last resort. In the literature there is a stronger focus of degrowth proposals towards the reduction of environmental impacts. The results from the assessment of the contribution of bottom-up initiatives in Portugal to the degrowth perspective showed that the sample of initiatives analysed had a strong contribution on reducing environmental impacts. The results of the assessment of the GTR process in Portugal pointed in the same direction; most of the degrowth proposals that corresponded to GTR proposals or measures were environmental-driven.

The third message is that Portuguese bottom-up initiatives are contributing to degrowth goals and are experimenting alternative ways to produce goods and services and to exchange them, even if they do not refer to themselves as degrowth initiatives. They are building resilience through pursuing self-sufficiency mainly in terms of food and energy systems. They are experimenting new ways of organization that are based on sharing (e.g. work burden, costs, risks) and that are more horizontal and equitable.

The fourth message is that top-down initiatives (in this case, economic instruments) can be tools to steer the economic system into a different direction, by giving signs towards a certain vision. The assessment of the Portuguese Green Tax Reform process showed that there is potential to provoke small changes in parts of the

system that can induce behaviour change towards degrowth, if designed with that vision (the process analysed was designed based on a (green) growth vision).

Now we will turn to the research questions that guided this work and provide answers to them individually for better clarity.

RQ #1: How can degrowth be conceptualized by the proposals for action found in the academic literature?

Different authors have attempted to describe degrowth from different starting points. Here, degrowth is described based on the proposals put forward for its implementation. In this context, degrowth may be understood as a process where material and energy consumption are reduced, and where incentives are created to encourage more local production. Exchange in a degrowth society would be facilitated by local currencies and non-monetary systems, with strong powers given to the state to redistribute income and wealth and provide public services. People living in a degrowth society would work shorter hours in paid employment, share jobs in many cases, and lead more frugal lifestyles overall. Although economic activity would be more localised in a degrowth society, the state would have an important role both to limit material and energy use and redistribute income and wealth.

If sustainable degrowth is to occur, however, then the articulation between bottom-up initiatives and top-down government action must be promoted and better understood. Also, there is a need to explore further how to foster democracy in the process of creating and implementing proposals. Degrowth proposals can complement each other, be conflicting, or even be redundant. It is therefore important to analyse which proposals may be translated into policy instruments, and in which sequence they should be implemented. The development of a degrowth policy mix is needed to encourage the beneficial interaction of complementary and synergetic proposals and minimise the negative effects of those that may conflict.

RQ #2: How does the democratization of policy-making processes can influence a degrowth transition?

It is not linear how a transition as radical as the degrowth perspective advocates will occur. Counting only on state interventions to achieve this transition will likely not

be enough or even desirable. Top-down public policy is acceptable in a degrowth perspective for certain issues that are very urgent to solve and can be seen in a centralized way (e.g. complex and global sustainability issues such as climate change mitigation measures that might require national and international level agreements and interventions). This transition might not occur in a planned and always democratic way, as it implies a deep transformation in social values and behaviours led by a multitude of actors at different scales in parallel. It is important to accept at a state level that the democratization of policy-making processes is always a process of trial and error, and multiple ways of public engagement have to be tested and systems have to be in place for people to provide feedback to always improve the methods used.

RQ #3: How to assess the contributions of bottom-up and top-down initiatives to a degrowth transition?

To assess the contribution of bottom-up and top-down initiatives to a degrowth transition, an assessment framework (DGTools) was developed based on the degrowth proposals and goals retrieved from the literature review. The DGTools allow the rating of a sustainability initiative or policy instrument across the three degrowth goals and the 24 criteria that comprise them. The scale of the analysis can be chosen according to the object of assessment.

The DGTools were tested in two case studies. The results showed that the framework was useful and appropriated to analyse the contribution of bottom-up and top-down initiatives to a degrowth transition at multiple levels. Some limitations were identified in the application of this framework, which can be addressed by future studies to improve the methods.

RQ #4.1: Recognizing the role of the state, how can top-down initiatives be a tool to advance a degrowth transition?

From the three types of action strategies for degrowth transformations (Demaria et al., 2013; Petridis et al., 2015), reformism can be a transition tool for some degrowth goals, especially the ones that might require top-down action.

The top-down initiative studied in depth was the Green Tax Reform process in Portugal. There is still much room to grow in terms of transforming future GTR processes

to be more aligned with degrowth goals. Although GTR is usually aligned with a green growth perspective (MAOTE, 2014), several measures in the Portuguese case have the potential to contribute to various different degrowth criteria, as shown by the results.

The degrowth goal more aligned with the GTR proposals and measures is Goal 1 – Reduce the environmental impact of human activities, which is not very surprising since the environmental dimension is the most important in a process of this kind. Some criteria have matched the GTR proposals and/or measures, but it is not clear what is the relevance of their contribution without having goals for the criteria in mind.

Some potentially relevant proposals to promote a reduction in consumption, a core concern of the degrowth perspective, were not considered in the final GTR law. It would be interesting to understand the reasons behind the acceptance or not of the GTR Commission proposals by the Portuguese Government and Parliament.

RQ #4.2: Recognizing the role of civil society, how can bottom-up initiatives contribute to advance a degrowth transition?

From the three types of action strategies for degrowth transformations (Demaria et al., 2013; Petridis et al., 2015), grassroots innovations are an important part of the building of alternative models for human's activities.

The bottom-up initiatives studied in depth were the sustainability initiatives voluntary created by civil society in Portugal. These initiatives are contributing to many degrowth criteria. Degrowth Goal 1 is the one that has more contributions, what demonstrated a high concern of the initiatives regarding ecological issues. Many practices are aligned with the degrowth collaborative and convivial perspective, for example the voluntary simplicity philosophy of living, the efforts to bring production and consumption closer and enhance local economies, the direct exchange of goods and services, and the use of community currencies.

RQ #4: How to rethink public policies developed in a (green) growth-based regime to incentivize and support a degrowth sustainability transition?

Ideas from the interviews and the empirical work developed allowed to build some hypothesis to answer to this research question. In a degrowth mindset, the

priorities for policy-making should be identified directly by citizens. Technical expertise should be used as an instrument to understand the viability of different solutions to the priorities identified. A parallel work has to be done to make people more willing to participate actively in political issues and to raise awareness to the unsustainable path of living, which can be done by showing examples of alternatives instead of prohibiting certain activities.

As it was showed with the analysis of the Green Tax Reform, there are measures with great potential to reform the current system, and to slowly transition into a degrowth mindset. However, power structures are strong, and as long as major economic interests have a more evident voice in policy-making than people, it will be difficult to change this path. Also in this matter, a stronger role of the state might be necessary to balance powers and voices. However, we acknowledge the complexity of the issue and we consider that the role of the state in a degrowth transition should continue to be further explored and discussed.

8.2. RELEVANCE OF THE RESEARCH RESULTS AND CONTRIBUTIONS

The research results are relevant for the degrowth academic debate. Advancements were made in terms of degrowth theory, by doing a critical analysis of proposals found in the literature, and by connecting degrowth vision with democracy literature and with transition studies literature.

Practitioners can also benefit from this work. The DGTools allow the bottom-up initiatives to perform changes in their practices based on the diagnosis done, since they are able to understand which criteria from the degrowth perspective are being developed or not in their activities. Support programs for bottom-up initiatives can be based on an improved version of the DGTools. The type of support has to be personalized to the initiatives' needs, but it might be financial, technical or providing facilitation of their activities.

The work has also relevance for policy-making. The degrowth assessment tool for policy instruments can be used to analyse other policies, policy packages or national strategies to explore how to reform those instruments bearing the degrowth goals in

mind. It is a practical instrument that can be used to promote that a growth-based system slowly turns into a degrowth system.

8.3. STRATEGIC RECOMMENDATIONS FOR PROMOTING A DEGROWTH TRANSITION WITH A MULTI-LEVEL PERSPECTIVE

To promote sustainability transitions is to promote a public good. Private actors have little incentives to promote it, risking themselves to free-rider problems and prisoner's dilemmas (Köhler et al., 2019). This means that public policy has a central role on shaping the directionality of transitions, and for that there is a need to provide normative statements about what are the end goals of a sustainability transition (Köhler et al., 2019).

In this work, we argued that degrowth goals should guide sustainability transitions. This should not compromise, though, the plurality of values and means in society that must be considered to accomplish these goals. Therefore, a socially just degrowth transition will have ideally three main kick-off features:

- A symbiotic ecosystem of bottom-up sustainable alternatives and movements that are not competing but working in harmony with each other, providing local/regional solutions that work for the specific contexts where they appear;
- A top-down pluralistic strategy at a national level that does not create barriers but instead creates a protected space for radical niche alternatives, which will be able to experiment and provide innovations that oppose the dominant economic determinism;
- A top-down regulation at national and international levels aligned with a post-growth vision for the future, which will be essential to boost major changes in the long-lasting dominant directions (e.g. mechanization, mass production and individual consumption, increasing energy- and resource-intensity) and reverse their consequent problems (e.g. climate change, scarcity of natural resources, violation of human rights, disconnection of social values and the market).

8.4. SUGGESTIONS FOR FUTURE RESEARCH

Some promising uses for the framework were identified but not explored in this research, namely the use of the framework for creating a set of indicators to assess policy and the use of the criteria as a basis for a certification scheme for degrowth-related production. It would also be important to do an update of the literature review performed in Chapter 3 and that was used as a basis for the design of the framework. Novel research might provide useful insights for the framework.

In the topic of bottom-up initiatives, it would be interesting to understand the motivations for starting the initiatives and to understand if they have visions for the future related to the other goals. Further work on this topic could be done by analysing and observing the practices of the initiatives (visiting the locations and talking to members) and by understanding not only their contribution but also the main barriers (financial, technical, others) to enhance their contribution. An interesting topic would be to explore the impact of technological tools in the empowerment of local sustainability initiatives, such as online networks for exchanging experience and knowledge.

It would also be valuable in the future to give more focus to the path of transition to degrowth, exploring how the degrowth-related niches could be more protected, who would protect them, how this protection should be transformed along the years and declines when the innovation enters the regime. For this, the first step would be to carry out a survey of dimensions that have potential to support or put obstacles to these initiatives. Smith and Stirling (2018) give some examples of these obstacles for community energy groups, which can be a good starting point for future research: how rules of access to electricity markets are designed to favour large-scale suppliers, where to sit a micro-hydro plant (ownership of land and resources), how to get a loan for the initiative (control of capital investment), how to win legitimacy (culture of expertise) and local and national political patronage.

This connects with the topic of top-down measures. It would be interesting to do interviews with practitioners in the policy-making arena to understand what are the constraints to change, in order to contribute to empirical research in this field. In parallel, a survey of policy documents should be carried out, to understand what type

of policies are already in place to promote grassroots innovations (or that have that potential).

Also in this context, the ideal that the degrowth movement is a way to rediscover the epistemological and theoretical grounds of democracy (Deriu, 2012) still needs to be further explored empirically. Smith and Stirling (2018, p. 69) claim that although the most powerful and important feature of grassroots innovation is “an insistent opening up of innovation agendas, institutions and practices”, this feature is rarely explored. Instead, there are usually weak attempts to insert these bottom-up ideas into existing systems and institutions for innovation (Smith and Stirling, 2018). The connections between the process of shared learning, reconstruction of social ties and collective transformation that the bottom-up degrowth-related initiatives promote and their impact on democracy and institutions is still a broad area in need of further research.

8.5. PERSONAL REFLECTION ABOUT THE PHD JOURNEY AND THE LEARNING PROCESS

This PhD journey was not easy, and it was not supposed to be, because no one changes when following a smooth path. Since the beginning I saw the PhD as not only an opportunity to get more knowledge and to give a contribution to degrowth research, but also as a way to develop research skills such as interpreting academic works and being able to do critical reviews, being able to present and argue the research conducted, connecting academic and practical experiences (to contribute with the research not only for science but also for the society), among other. I consider that this journey was full of opportunities to develop these skills and so I consider that the PhD made sense and fulfilled its role.

The work in the degrowth field of research is demanding, as there are more loose ends than certainties, and it needs real interdisciplinary work. This also made it very appealing to me as an early career researcher in ecological economics. I truly believe that interdisciplinary research is very important, since it is the best chance we have as researchers to give response to the complex social and environmental challenges humanity faces. However, I felt throughout the way that I obviously did not have enough knowledge in all the different research fields used in this work. This made it clear to me the importance of working inside a team of different skilled people and of opening the

work to society always. In this work, and as a PhD research is mainly individual, I tried to surpass this issue by discussing the work with my supervisors, taking courses on specific issues, submitting parts of the work to be discussed in conferences in different research fields (ecological economics, political science, transition studies, environmental management), discussing the work in progress with PhD, research team and department colleagues, and discussing the work with different experts along the way (researchers, practitioners and members of NGOs).

There were many ups and downs, in the research work and specially in my motivation to pursue it. I realised along the way that being a researcher is a lot like being a professional athlete, meaning that the psychological part is of the utmost importance. The PhD student faces great mind barriers, and I was no exception. In spite of that, I tried to maintain the focus that this was something I wanted to accomplish, and so I had to keep finding strategies to overcome these barriers. I consider that this also made me grow as a person and not only as a researcher, since the learning overflowed to my life as a whole.

In conclusion, there were many outcomes of the PhD research: the research work presented in this thesis and also the personal growth that it is not possible to fully explain nor to measure.

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APPENDICES

Appendix I: Interview script used for interviews with scholars

This interview is a way of collecting data for a PhD thesis project about the role of democratic institutions in enhancing a post-growth transition to sustainability. I am interested to investigate the trade-offs between environmental policy legitimacy and efficacy, as well as what are the main challenges to articulate the various sources of knowledge in the policy design processes in this context. I am performing a number of interviews to do a scoping on what are the main dimensions we should be looking at when designing policies for a democratic degrowth/post-growth transition. The idea is to explore the seeming controversy on advocating for a democratic degrowth/post-growth transition in a time of great social and ecological crisis, that need to be addressed urgently.

1. Democratization of policy design processes: different interactions between decision-makers and stakeholders

1.1. Working hypothesis:

Planning a democratic transition to a more ecological, convivial and participatory society needs different modes of designing policy, both due to path dependency issues and to social change goals. Having a collaborative setting in mind, especially with policies that have a national range, there are two great groups of stakeholders that should be addressed differently, to participate actively in a policy design process. The first group consists on specific experts (from the outside and/or inside the public administration institutions) for a given policy. The interaction between decision-makers and these experts might be one of direct collaboration in the policy design process, ideally occurring a power sharing of the final decision, thus this would not be an ordinary consultation group. The second group consists on the civil society in general, that will be affected in a positive or negative way by the given policy. The interaction with these stakeholders can occur in multiple manners, but due to its complexity, it might require different tools to facilitate the process (e.g. e-democracy tools). Besides having collaboration tools that allow a more direct power sharing in the processes, with this group it is important to establish a long-term commitment and relationship to increase their empowerment/autonomy (e.g. reforms in education systems, design of inclusive participation processes).

Q1: What are your thoughts about this argument?

1.2. Concrete questions:

Q2: Who should be involved the policy design process?

Q3: When and how the different groups enter in the process?

Q4: What are the challenges of a policy design process with these characteristics, in comparison to a more conventional, top-down and technocratic process?

2. Articulation between democratization of process and policy efficiency in terms of environmental protection and transition to sustainability.

2.1. Working hypothesis:

There is a seeming controversy between the urgency of intervention to tackle social and ecological crisis, and adjustment period institutions will need to have to change the way policy is designed. An inherent challenge appears in this context, which is how to articulate scientific, technical, political and common knowledge in the design of more democratic policies. Societal interests are very heterogeneous and often conflicting, not only between them but also with the scientific evidences that backup a certain policy. To this we must add the technical and political challenges that policy design faces. An articulation of these types of knowledge does not have to give the same weight to them, but deliberation processes at the scale discussed here are very costly, need time and usually very challenging, if not impossible.

Q5: What are your thoughts about this argument?

2.2. Concrete questions:

Q6: How could policy-makers validate and integrate in a more legitimate manner non-scientific knowledge in environmental policy?

Q6: How could policy-makers articulate and manage scientific, technical and common knowledge about an environmental issue?

Q7: Can you give examples of measures to make these processes more democratic, having in mind the common time constraints in policy-making?

Q8: Do you have good examples in mind of what governments are doing to improve this kind of collaboration processes?

3. Transition path – how to articulate between earlier and later outcomes of policy interventions?

3.1. Working hypothesis:

Degrowth's project for decolonizing the imaginary of growth can be considered a later outcome of policy interventions in the present. This is essentially what Serge Latouche argues when he defends the "eight Rs of degrowth": Reevaluate (shift values); Reconceptualize (e.g., wealth vs. poverty or scarcity vs. abundance); Restructure production beyond capitalism; Redistribute between North and South and within countries; Relocalize the economy; and Reduce, Recycle, and Reuse resources. A transition to such a different society should be facilitated not only by policy reforms, but also by reforms on how success of a certain intervention is assessed. This means that the success of a certain process cannot be assessed only by the later outcomes but firstly by the earlier outcomes it has. An example would be to understand if a certain intervention, such as creating decision-making commissions with an integrated governance approach, would lead to an increase in efficiency of certain policies in the short-term, and to a change in social values towards participation in the long-term.

Q9: What are your thoughts about this argument?

3.2. Concrete questions:

Q10: What is the importance you attribute to the following dimensions for fostering a **more democratic policy design** for a post-growth transition? (1 – less important to 5 – most important)

1) Inclusion of stakeholders	1	2	3	4	5
Diversity of institutions involved in the process					
Format and timing of public participation					
Influence of the participation on final decisions					
Capacity to increase the quality of decisions					

2) Control / accountability	1	2	3	4	5
Transparency of the process					
Access to information					

Justification of political decisions					
Acceptance of counterarguments to decisions by the policy-makers					

3) Deliberative quality	1	2	3	4	5
Barriers to participation					
Openness to competing discourses and arguments from citizens as well as elites					
Inclusion of public values, assumptions and preferences					

Q11: Can you give examples of additional dimensions to add to the previous ones?

Q12: What is the importance you attribute to the following challenges for fostering **more effective policies** for a post-growth transition? (1 – less important to 5 – most important)

Dimension	1	2	3	4	5
Right mix of policies/programs in place to address the environmental problem					
Compliance with rules, programs and policies adopted					
Relevant institutions and resources in place to reduce the problems					

Q13: Can you give examples of additional dimensions to add to the previous ones?

4. Economic instruments designed for a degrowth transition to a post-growth society – the potential of Green Tax Reform (GTR) inside a degrowth policy mix.

4.1. Working hypothesis:

Economic instruments, when designed accordingly, have great potential to change consumer/producer behaviors. GTR, as a process, can be an interesting tool to design those instruments in a holistic view of sustainability, due to the range of things that can be combined. Moreover, it has the potential to be designed following the principal of fiscal neutrality, what is beneficial to move from labour taxes to taxing environmental bads, or incentivizing through taxation or removal of subsidies a more sustainable behaviour. As these kinds of reforms are usually projected by experts and subject to public consultation processes, there is a huge potential to increase democracy in their design. Although GTR is usually aligned with a Green Growth perspective, its

goals and proposals in the Portuguese case align well with degrowth goals, and so there is a great potential of recapturing this reform with a degrowth perspective in mind.

Q14: What are your thoughts about this argument?

4.2. Concrete questions:

Q15: What is the importance you attribute to the following contextual dimensions for fostering a **more democratic and effective policy design of economic instruments** for a post-growth transition? (1 – less important to 5 – most important)

Dimension	1	2	3	4	5
Social acceptance of environmental problem addressed					
People's distrust on revenues investment					
Giving previous information about impacts of policy instrument					
Credibility of GTR proponents					
Structure of GTR Commission (plurality of expertise)					

Q16: Can you give examples of additional dimensions to add to the previous ones?

Appendix II: Letter of information and consent form for interviews

PARTICIPANT INFORMATION LETTER

28th February 2017

Dear Participant,

My name is Inês Cosme and I am a PhD researcher at CENSE - Center for Environmental and Sustainability Research, based at the University NOVA of Lisbon, Portugal. Thank you for agreeing to talk to me. This letter is to give you some more information about the research I am doing.

My PhD thesis project is about the role of democratic institutions in enhancing a post-growth transition to sustainability. I am interested to investigate the trade-offs between environmental policy legitimacy and efficacy, as well as what are the main challenges to articulate the various sources of knowledge in the policy design processes in this context. I am performing a number of interviews to do a scoping on what are the main dimensions we should be looking at when designing policies for a democratic degrowth/post-growth transition. The idea is to explore the seeming controversy on advocating for a democratic degrowth/post-growth transition in a time of great social and ecological crisis, that need to be addressed urgently.

I want you to know that all information will be handled confidential and anonymously. Recordings from interviews will be stored safely and are not going to be shared. I will not directly identify you in writing up/discussing my research and you will not be identifiable in my reporting of the research, unless you explicitly agree to be identified. The data will be used for the final thesis project to produce an article, hopefully for publication in an international scientific journal.

If you have any questions or comments about the research, please do not hesitate to contact me. Thank you very much for your time in taking part in this discussion, your contribution will be very valuable to advancing my research.

Sincerely,

Inês Cosme

Contacts:

Tel: +351 916435683

E-mail: inescosme@fct.unl.pt

CONSENT FORM

Please add a “X” next to the statements you agree with:

I confirm that I have read and understood the information letter dated 28 th February 2017 explaining the research project and I have had the opportunity to ask further questions about the project.	
I understand that my participation is voluntary and that I am free to withdraw at any time, as well as not replying to certain questions, without giving any reason and without there being negative consequences.	
I agree that my name can be identifiable in the research materials, in order to provide a list of interviewed people.	
I agree that the data collected during this interview will be used in relevant future research and publication in the final thesis project and in other types of scientific publication.	
I give my permission for the researcher to record the interview, for the sake of not losing important information for further data analysis, as long as recordings are stored safely and not shared by the researcher.	

Name of participant	
Participant's signature	
Date	

Name of interviewer	
Interviewer's signature	
Date	

Appendix III: Coding of degrowth proposals

Number of total references per degrowth proposal

Code	Degrowth proposal	Number of references
C12	Reduce working hours	20
C13	Promote frugal, downshifted lifestyles	18
B2	Promote community currencies, non-monetary exchange systems and alternative credit institutions	17
B9	Promote a fair redistribution of resources through redistributive policies of income and capital assets	16
B21	Promote work-sharing and job-sharing	15
B1	Create a basic/citizen income	13
A23	Reduce material consumption	12
A22	Reduce energy consumption	11
A33	Create incentives for local production and consumption	11
B15	Create salary caps	11
B3	Improve social security and investment in public goods to guarantee equal access to goods and services, to protect from poverty and exclusion	10
B13	Encourage the reform of corporation charters and new ownership patterns	10
A1	Promote changes in consumption patterns	8
B10	Implement redistributive taxation schemes	8
C14	Explore the value of unpaid and informal activity	8
A3	Limit/regulate advertising	7
A20	Put caps on resource use and extraction (tradable or non-tradable)	7
C7	Decentralize and deepen democratic institutions	7
A29	Invest in more renewable energy	6
A4	Decrease the number of appliances and volume of goods used or consumed per household	5
A15	Promote organic farming/sustainable agriculture	5
A26	Tax resource use	5
B7	Promote the recognition and management of common goods	5
B11	Promote the shift of costs from labour to capital	5
C8	Promote alternative political systems and capabilities to provide them	5
A10	Put caps on CO2 emissions, tradable or non-tradable	4
B6	Create a job guarantee	4
C3	Investment in the restoration e strenghtening of local communities	4
A2	Tax consumption	3
A6	Finance funds and projects for the conservation of biodiversity	3
A8	Redirect investments away from infrastructure in fast and car-based models of transport to slow-mode modes (e.g. public transport and bike lanes)	3
A14	Reduce production (large-scale, resource intensive)	3
B4	Decrease unemployment	3
B18	Put a price on environmental and social externalities	3
B22	Create more employment in key-sectors	3
B23	Provide sufficient work opportunities	3
C4	Strengthening common possession regimes and customary institutions through their formal recognition by external actors	3

Note: 'A' proposals – Goal 1; 'B' proposals – Goal 2; 'C' proposals – Goal 3.

Number of total references per degrowth proposal (continuation)

Code	Degrowth proposals	Number of references
A9	Create a moratorium on new infrastructure (e.g. nuclear plants, highways, dams)	2
A11	Tax environmental externalities	2
A17	Create regulatory bans for very harmful activities/technologies (e.g. nuclear energy)	2
A18	Make more green investments	2
A19	Promote eco-efficiency	2
A24	Create moratorium on resource use and extraction	2
A25	Make commitments to leave resources on the ground	2
A31	Promote strong social and environmental provisions in trade agreements	2
A32	Limit trade distances and volume	2
B14	Encourage the breaking and decentralization of banks and financial institutions	2
B16	Tax international capital movement	2
B17	Tighten the control on tax havens	2
B24	Encourage small, local enterprises	2
C1	Create funds to finance low economic cost-high welfare public investments	2
C2	Promote a value change	2
C5	Introduce and incentivise education on ecological/social limits and sustainability in various educational and training establishment	2
C10	Promote regeneration of fundamental democratic institutions to incorporate degrowth-related spatial, temporal and value dimensions	2
C11	Promote sharing living spaces (with shared chores)	2
C15	Devise new measures to track improvements in social welfare	2
A5	Promote in the restoration of ecosystems	1
A7	Promote the use of local sources of water (rainwater, greywater) to reduce dependence on large infrastructures and improve the quality of freshwater ecosystems	1
A12	Certification of organic farming including CO2 emission reduction goals	1
A13	Reduce waste generation	1
A16	Introduction of simpler technologies	1
A21	Tax the extraction of resources at origin	1
A27	Promote the use of local sources of rainwater and greywater	1
A28	Remove harmful subsidies for resource extraction	1
A30	Promote the compact city form of urban planning	1
A34	Reduce the number of scientific conferences	1
A35	Regulate tourism industry	1
A36	Promote voluntarily reductions in commerce and trade	1
B5	Turn banking into a public service	1
B8	Eliminate debt-based money	1
B12	Encourage the breaking of large corporations to avoid monopolies	1
B19	Preparation for long-term non-growth after the period of growth for developing countries	1
B20	Establish common but differentiated responsibilities of developed and developing countries	1
C6	Promote the preservation of ancient knowledge, language and techniques	1
C9	Create caps on political and electoral spending to allow equal participation chances	1

Note: 'A' proposals – Goal 1; 'B' proposals – Goal 2; 'C' proposals – Goal 3.

Number of references per degrowth proposal, excluding references from the same first author

Code	Degrowth proposal	Number of References
C12	Reduce working hours	16
B2	Promote community currencies, non-monetary exchange systems and alternative credit institutions	15
C13	Promote frugal, downshifted lifestyles	15
B9	Promote a fair redistribution of resources through redistributive policies of income and capital assets	13
A23	Reduce material consumption	12
B21	Promote work-sharing and job-sharing	11
A22	Reduce energy consumption	10
A33	Create incentives for local production and consumption	10
B1	Create a basic/citizen income	10
A1	Promote changes in consumption patterns	8
B3	Improve social security and investment in public goods to guarantee equal access to goods and services, to protect from poverty and exclusion	8
B15	Create salary caps	8
C14	Explore the value of unpaid and informal activity	8
B13	Encourage the reform of corporation charters and new ownership patterns	7
C7	Decentralize and deepen democratic institutions	7
A3	Limit/regulate advertising	6
B10	Implement redistributive taxation schemes	6
A4	Decrease the number of appliances and volume of goods used or consumed per household	5
A15	Promote organic farming/sustainable agriculture	5
A20	Put caps on resource use and extraction (tradable or non-tradable)	5
A29	Invest in more renewable energy	5
B7	Promote the recognition and management of common goods	5
B11	Promote the shift of costs from labour to capital	5
C8	Promote alternative political systems and capabilities to provide them	5
A26	Tax resource use	4
B6	Create a job guarantee	4
C3	Investment in the restoration e strengthening of local communities	4
A2	Tax consumption	3
A6	Finance funds and projects for the conservation of biodiversity	3
A8	Redirect investments away from infrastructure in fast and car-based models of transport to slow-mode ones (e.g. public transport and bike lanes)	3
A10	Put caps on CO2 emissions, tradable or non-tradable	3
A14	Reduce production (large-scale, resource intensive)	3
B4	Decrease unemployment	3
B22	Create more employment in key-sectors	3
B23	Provide sufficient work opportunities	3
C4	Strengthening common possession regimes and customary institutions through their formal recognition by external actors	3
A9	Create a moratorium on new infrastructure (e.g. nuclear plants, highways, dams)	2
A11	Tax environmental externalities	2
A17	Create regulatory bans for very harmful activities/technologies (e.g. nuclear energy)	2
A18	Make more green investments	2
A19	Promote eco-efficiency	2
A25	Make commitments to leave resources on the ground	2

Note: 'A' proposals – Goal 1; 'B' proposals – Goal 2; 'C' proposals – Goal 3.

Number of references per degrowth proposal, excluding references from the same first author (continuation)

Code	Degrowth proposal	Number of references
A31	Promote strong social and environmental provisions in trade agreements	2
A32	Limit trade distances and volume	2
B14	Encourage the breaking and decentralization of banks and financial institutions	2
B16	Tax international capital movement	2
B17	Tighten the control on tax havens	2
B18	Put a price on environmental and social externalities	2
B24	Encourage small, local enterprises	2
C2	Promote a value change	2
C5	Introduce and incentivise education on ecological/social limits and sustainability in various educational and training establishment	2
C10	Promote regeneration of fundamental democratic institutions to incorporate degrowth-related spatial, temporal and value dimensions	2
C11	Promote sharing living spaces (with shared chores)	2
A5	Promote in the restoration of ecosystems	1
A7	Promote the use of local sources of water (rainwater, greywater) to reduce dependence on large infrastructures and improve the quality of freshwater ecosystems	1
A12	Certification of organic farming including CO2 emission reduction goals	1
A13	Reduce waste generation	1
A16	Introduction of simpler technologies	1
A21	Tax the extraction of resources at origin	1
A24	Create moratorium on resource use and extraction	1
A27	Promote the use of local sources of rainwater and greywater	1
A28	Remove harmful subsidies for resource extraction	1
A30	Promote the compact city form of urban planning	1
A34	Reduce the number of scientific conferences	1
A35	Regulate tourism industry	1
A36	Promote voluntarily reductions in commerce and trade	1
B5	Turn banking into a public service	1
B8	Eliminate debt-based money	1
B12	Encourage the breaking of large corporations to avoid monopolies	1
B19	Preparation for long-term non-growth after the period of growth for developing countries	1
B20	Establish common but differentiated responsibilities of developed and developing countries	1
C1	Create funds to finance low economic cost-high welfare public investments	1
C6	Promote the preservation of ancient knowledge, language and techniques	1
C9	Create caps on political and electoral spending to allow equal participation chances	1
C15	Devise new measures to track improvements in social welfare	1

Note: 'A' proposals – Goal 1; 'B' proposals – Goal 2; 'C' proposals – Goal 3.

Appendix IV: Structure of online survey

Inquérito de avaliação de sustentabilidade - a visão do decrescimento sustentável

Este inquérito insere-se num trabalho de investigação para a elaboração de uma tese de doutoramento na área de Ambiente e Sustentabilidade na Faculdade de Ciências e Tecnologia da Universidade NOVA de Lisboa. Pretende-se testar um sistema de avaliação de iniciativas que têm como objetivo contribuir para uma transição para a sustentabilidade, adoptando-se o decrescimento sustentável como paradigma de sustentabilidade. Os objetivos principais do sistema de avaliação a desenvolver serão o de identificar em que medida a iniciativa contribui para os objetivos desta visão de sustentabilidade e propor recomendações para a sua melhoria contínua. Esta ferramenta servirá também para avaliar a nível regional e/ou nacional que iniciativas se complementam, e que valências não estão a ser ainda exploradas para promover uma transição para a sustentabilidade ao nível regional e nacional.

As respostas devem ser dadas de acordo com o que está implementado e/ou planeado na organização no presente momento. Quanto mais fiáveis forem as respostas, mais adaptadas vão ser as recomendações para o futuro. Garante-se o anonimato das respostas através do tratamento dos dados recolhidos de forma agregada e/ou anónima.

O tempo estimado de preenchimento é de 20 minutos. Muito obrigada desde já pela sua disponibilidade!

Em caso de dúvida no preenchimento do questionário ou para outras informações, por favor contacte-me:

Inês Cosme

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Parte I. Informação sobre a iniciativa de sustentabilidade

1. Nome da iniciativa:

2. Nome e contacto da pessoa responsável pelo preenchimento do inquérito:

3. Escala espacial a que a iniciativa atua (Marcar tudo o que for aplicável):

- ☐ Local
- ☐ Regional
- ☐ Nacional
- ☐ Internacional

4. Dimensão da organização:

- ☐ Micro (<10 colaboradores ; Volume de negócios anual/Receitas ou Balanço total anual <= a 2 milhões de euros)
- ☐ Pequena (<50 colaboradores ; Volume de negócios anual/Receitas ou Balanço total anual <= a 10 milhões de euros)
- ☐ Média (<250 colaboradores ; Volume de negócios anual/Receitas <= 50 milhões de euros ou Balanço total anual <= 43 milhões de euros)
- ☐ Grande (>250 colaboradores ; Volume de negócios anual/Receitas ou Balanço total anual > 50 milhões de euros)

5. Tipo de iniciativa:

- ☐ Cultura e Educação
- ☐ Gestão da Terra e da Natureza
- ☐ Uso da Terra e Comunidade
- ☐ Saúde e Bem-Estar Espiritual
- ☐ Permacultura
- ☐ Economia e Finanças
- ☐ Outra (qual?):

6. Tipo de serviços (escolher todos os que se aplicam):

- ☐ Alojamento
- ☐ Associação cultural
- ☐ Café / Padaria / Pastelaria
- ☐ Restaurante
- ☐ Catering
- ☐ Formação/Workshops
- ☐ Terapias alternativas
- ☐ Loja física
- ☐ Loja online
- ☐ Mercado / Supermercado
- ☐ Organização sem fins lucrativos
- ☐ Produção de alimentos
- ☐ Outra (qual?):

7. Tipo de produtos usados e/ou vendidos (escolher todos os que se aplicam):

- ☐ Produtos biológicos
- ☐ Produtos vegan
- ☐ Produtos ovo-lacto vegetarianos
- ☐ Produtos naturais, não biológicos
- ☐ Produtos não testados em animais
- ☐ Produtos de comércio justo
- ☐ Outra (qual?):

8. Como avalia o potencial de replicação do modelo da iniciativa noutros locais?

- ☐ Alto
- ☐ Médio
- ☐ Baixo

9. Justifique a sua escolha anterior:

10. Identifique as redes nacionais e internacionais em que a organização se insere (se aplicável):

Parte II.

Objetivo 1 | Redução dos impactes ambientais das atividades humanas

11. Como classifica a contribuição da iniciativa (dentro da escala espacial em que atua) em termos das seguintes dimensões?

	Contribui no potencial máximo	Contribui mas ainda não atingiu o potencial máximo	Ainda não contribui, mas está planeado	Não contribui nem está planeado, apesar de relevante	Não relevante
Redução do consumo de materiais	☐	☐	☐	☐	☐
Redução do consumo de energia	☐	☐	☐	☐	☐
Promoção do consumo e produção local	☐	☐	☐	☐	☐
Incentivos para criar padrões de consumo mais sustentáveis	☐	☐	☐	☐	☐
Limitação/redução de publicidade (com o fim de não criar necessidades de consumo previamente não existentes)	☐	☐	☐	☐	☐
Redução no volume de bens usados/consumidos por casa	☐	☐	☐	☐	☐
Promoção de agricultura sustentável	☐	☐	☐	☐	☐
Redução da extração e do uso de recursos naturais	☐	☐	☐	☐	☐
Promoção do uso de energias renováveis	☐	☐	☐	☐	☐

12. Dê exemplos concretos nos casos em que considera que a iniciativa contribui no seu potencial máximo para dada dimensão, se for possível com dados quantitativos (ex: "Promoção do consumo e produção local" - 100% dos produtos hortícolas utilizados na organização são produzidos localmente)

13. Dê exemplos concretos nos casos em que considera que a iniciativa contribui, mas ainda não no seu potencial máximo para dada dimensão, se for possível com dados

quantitativos (ex: "Redução do uso de materiais" - 50% dos produtos usados/vendidos são a granel)

14. Dê exemplos concretos de medidas que estão planeadas nos casos em que a iniciativa ainda não contribui para dada dimensão (ex: "Redução no volume de bens usados/consumidos por casa" - queremos montar no futuro um serviço de reparação dos produtos vendidos para aumentar o seu tempo de uso)

Objetivo 2 | Redistribuição de rendimentos e riqueza

15. Como classifica a contribuição da iniciativa (dentro da escala espacial em que atua) em termos das seguintes dimensões?

	Contribui no potencial máximo	Contribui mas ainda não atingiu o potencial máximo	Ainda não contribui, mas está planeado	Não contribui nem está planeado, apesar de relevante	Não relevante
Promoção de moedas locais, sistemas de trocas não monetários ou instituições de crédito alternativas	☐	☐	☐	☐	☐
Promoção da partilha de trabalho (de modo a criar mais emprego e permitir menos horas de trabalho)	☐	☐	☐	☐	☐
Promoção de novos modos de propriedade, baseados em sistemas de partilha (ex: cooperativas)	☐	☐	☐	☐	☐
Promoção do reconhecimento e gestão de bens comuns	☐	☐	☐	☐	☐

16. Dê exemplos concretos nos casos em que considera que a iniciativa contribui no seu potencial máximo para dada dimensão, se for possível com dados quantitativos (ex:

"Promoção de sistemas de trocas não monetários" - a organização permite a troca de bens por serviços de forma direta)

17. Dê exemplos concretos nos casos em que considera que a iniciativa contribui, mas ainda não no seu potencial máximo para dada dimensão, se for possível com dados quantitativos (ex: "Promoção do reconhecimento e gestão de bens comuns" - já promovemos iniciativas de plantação de árvores mas existem outras questões que ainda podemos explorar)

18. Dê exemplos concretos de medidas que estão planeadas nos casos em que a iniciativa ainda não contribui para dada dimensão (ex: "Promoção da partilha de trabalho" - planeamos que todos os colaboradores trabalhem menos horas, e consequentemente ganhem menos, para conseguirmos empregar mais pessoas no futuro)

Objetivo 3 | Promoção da transição de uma sociedade materialista para uma sociedade de convívio e participativa

	Contribui no potencial máximo	Contribui mas ainda não atingiu o potencial máximo	Ainda não contribui, mas está planeado	Não contribui nem está planeado, apesar de relevante	Não relevante
Esforço na redução do número de horas de trabalho	☐	☐	☐	☐	☐
Promoção de estilos de vida mais frugais	☐	☐	☐	☐	☐
Valorização das atividades voluntárias e informais	☐	☐	☐	☐	☐
Descentralização e aprofundamento das instituições democráticas	☐	☐	☐	☐	☐
Promoção de sistemas de governança alternativos e de formas de capacitação para os manter	☐	☐	☐	☐	☐

20. Dê exemplos concretos nos casos em que considera que a iniciativa contribui no seu potencial máximo para dada dimensão, se for possível com dados quantitativos (ex: "Valorização das atividades voluntárias e informais" - estamos na capacidade máxima de receber voluntários em troca de alimentação/alojamento)

21. Dê exemplos concretos nos casos em que considera que a iniciativa contribui, mas ainda não no seu potencial máximo para dada dimensão, se for possível com dados quantitativos (ex: "Promoção de sistemas de governança alternativos e de formas de capacitação" - todos os colaboradores têm o poder de criar e gerir novos projetos mas ainda não conseguimos criar cursos de capacitação para dinamizar o grupo)

22. Dê exemplos concretos de medidas que estão planeadas nos casos em que a iniciativa ainda não contribui para dada dimensão (ex: "Promoção de estilos de vida mais frugais" - Temos planeado fazer uma campanha nas redes sociais todos os Natais sobre como reduzir o materialismo nas épocas festivas)

Parte III. Comentários finais e/ou sugestões

23. Deixe aqui informação extra sobre a sua iniciativa ou sobre este inquérito, se assim o desejar.

Appendix V: Full results of the survey to sustainability initiatives

List of initiatives that participated in the survey

ADNbio Merceria Especializada	ITLaV - Iniciativa de Transição de Linda-a-Velha
Aldeia do Vale	Jardim dos Sentidos. Rest Vegetariano
AMAP - Associação para a manutenção da agricultura de proximidade	kunoleco
AMOR BIO	Lights One
Associação Mata Sustentável	Live With Earth
Associação Movimento Terra Solta	Lugar da Rocha
Associação Transumância e Natureza	Mentes Empreendedoras
bmacro	Outro Lado
Casa da floresta verdes anos	Oxigénio
Casa da Horta - Associação Cultural	Pão Nosso
CIDADE+	Pastelaria 6Sentidos
Cooperativa Integral Minga CRL	Projecto Dias Nas Árvores
Coopérnico	Quinta do Alecrim
Eco-Comunidades na Planície	Quinta do Vale
Ecoaldeia de Janas	Quinta Pedagógica
Ecovillage Terramada	Raw - Comida & Granel
Enraizar	SAMA SAMA - Crepe and juice bar
espaço compasso	Shangri-la
Famalicão em Transição	Soulfoodvegan
Foodprintz Cafe	Souto verde
Futuragora	Terra Alta
GOSTOSUPERIOR	Terrapalha Estúdio de Arquitectura
Green Beans - Mercado Vegan	Terras de Lyz - Escola de Desenvolvimento Humano e Espiritual
Herdade do Morgado	Vale da Lama, agro-turismo
Hibiscus - Loja de produtos Biológicos a Granel	Vale de Moses Yoga Retreat
HortaFCUL	Zen Vouga
Hortelã-Cafetaria Orgânica	Zona Um - Permacultura e Sustentabilidade

Data used for Figures 14 and 15

Region	Alentejo region	Algarve region	Centro region	Lisbon Region	Norte region	Portugal
Culture and Education	0	0	3	4	2	15
Economy and Finances	1	0	0	0	0	10
Land and Nature management	1	1	1	2	0	10
Permaculture	2	2	3	3	0	9
Health and Spiritual well-being	0	0	1	5	4	7
Transition	0	0	0	2	1	5
Land use and community	1	1	0	1	4	3
Others	1	1	2	7	3	1

Data used for Figures 24 to 41

GOAL 1: REDUCE THE ENVIRONMENTAL IMPACT OF HUMAN ACTIVITIES

PORTUGAL	Reduction in material consumption	Reduction in energy consumption	Promotion of local production and consumption	Incentivization to more sustainable consumption patterns	Limitation/ reduction of advertising	Reduction of number in volume of goods used/consumed per household	Promotion of sustainable agriculture	Reduction in resource use and resource extraction	Promotion of use of renewable energy
Contributes in full potential	6	8	14	14	12	7	21	15	13
Contributes but still not in full potential	47	33	41	36	20	37	32	32	18
Does not contribute yet but it is planned	5	11	4	6	6	5	5	9	20
Does not contribute and it is not planned, although relevant	1	6	0	2	8	4	1	1	6
Not relevant	1	2	1	2	14	7	1	3	3

ALENTEJO REGION	Reduction in material consumption	Reduction in energy consumption	Promotion of local production and consumption	Incentivization to more sustainable consumption patterns	Limitation/ reduction of advertising	Reduction of number in volume of goods used/consumed per household	Promotion of sustainable agriculture	Reduction in resource use and resource extraction	Promotion of use of renewable energy
Contributes in full potential	1	1	2	2	2	1	3	2	2
Contributes but still not in full potential	5	4	4	3	2	4	3	2	2
Does not contribute yet but it is planned	0	0	0	0	0	0	0	1	0
Does not contribute and it is not planned, although relevant	0	1	0	1	0	0	0	0	1
Not relevant	0	0	0	0	2	1	0	1	1

ALGARVE REGION	Reduction in material consumption	Reduction in energy consumption	Promotion of local production and consumption	Incentivization to more sustainable consumption patterns	Limitation/ reduction of advertising	Reduction of number in volume of goods used/consumed per household	Promotion of sustainable agriculture	Reduction in resource use and resource extraction	Promotion of use of renewable energy
Contributes in full potential	1	1	2	1	1	2	2	1	2
Contributes but still not in full potential	4	4	2	3	2	3	3	4	3
Does not contribute yet but it is planned	0	0	1	1	1	0	0	0	0
Does not contribute and it is not planned, although relevant	0	0	0	0	0	0	0	0	0
Not relevant	0	0	0	0	1	0	0	0	0

CENTRO REGION	Reduction in material consumption	Reduction in energy consumption	Promotion of local production and consumption	Incentivization to more sustainable consumption patterns	Limitation/ reduction of advertising	Reduction of number in volume of goods used/consumed per household	Promotion of sustainable agriculture	Reduction in resource use and resource extraction	Promotion of use of renewable energy
Contributes in full potential	1	2	2	1	1	1	3	2	2
Contributes but still not in full potential	8	3	8	6	2	4	7	6	0
Does not contribute yet but it is planned	1	3	0	2	2	2	0	1	8
Does not contribute and it is not planned, although relevant	0	2	0	1	0	1	0	0	0
Not relevant	0	0	0	0	5	2	0	1	0

LISBON REGION	Reduction in material consumption	Reduction in energy consumption	Promotion of local production and consumption	Incentivization to more sustainable consumption patterns	Limitation/ reduction of advertising	Reduction of number in volume of goods used/consumed per household	Promotion of sustainable agriculture	Reduction in resource use and resource extraction	Promotion of use of renewable energy
Contributes in full potential	1	3	6	6	4	1	7	5	6
Contributes but still not in full potential	18	14	15	15	9	16	12	13	10
Does not contribute yet but it is planned	3	4	2	2	2	3	3	5	6
Does not contribute and it is not planned, although relevant	1	2	0	0	5	1	1	0	1
Not relevant	1	1	1	1	4	3	1	1	1

NORTE REGION	Reduction in material consumption	Reduction in energy consumption	Promotion of local production and consumption	Incentivization to more sustainable consumption patterns	Limitation/ reduction of advertising	Reduction of number in volume of goods used/consumed per household	Promotion of sustainable agriculture	Reduction in resource use and resource extraction	Promotion of use of renewable energy
Contributes in full potential	2	1	2	4	4	2	6	4	1
Contributes but still not in full potential	12	8	11	8	4	9	7	7	3
Does not contribute yet but it is planned	0	4	1	1	1	0	1	2	6
Does not contribute and it is not planned, although relevant	0	1	0	0	3	2	0	1	4
Not relevant	0	0	0	1	2	1	0	0	0

GOAL 2: REDISTRIBUTE INCOME AND WEALTH BOTH WITHIN AND BETWEEN COUNTRIES

PORTUGAL	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	Promotion of work-sharing	Promotion of new ownership patterns, based on sharing	Promotion of the recognition and management of common goods
Contributes in full potential	2	5	7	6
Contributes but still not in full potential	14	17	15	23
Does not contribute yet but it is planned	13	10	13	8
Does not contribute and it is not planned, although relevant	18	14	14	10
Not relevant	13	14	11	13

ALENTEJO REGION	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	Promotion of work-sharing	Promotion of new ownership patterns based on sharing	Promotion of the recognition and management of common goods
Contributes in full potential	1	1	1	0
Contributes but still not in full potential	1	1	1	3
Does not contribute yet but it is planned	2	2	2	1
Does not contribute and it is not planned, although relevant	1	0	1	0
Not relevant	1	2	1	2

ALGARVE REGION	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	Promotion of work-sharing	Promotion of new ownership patterns, based on sharing	Promotion of the recognition and management of common goods
Contributes in full potential	0	0	0	0
Contributes but still not in full potential	2	2	2	2
Does not contribute yet but it is planned	0	0	2	1
Does not contribute and it is not planned, although relevant	1	1	0	1
Not relevant	2	2	1	1

CENTRO REGION	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	Promotion of work-sharing	Promotion of new ownership patterns, based on sharing	Promotion of the recognition and management of common goods
Contributes in full potential	0	0	0	1
Contributes but still not in full potential	3	4	3	3
Does not contribute yet but it is planned	1	2	2	2
Does not contribute and it is not planned, although relevant	3	2	3	1
Not relevant	3	2	2	3

LISBON REGION	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	Promotion of work-sharing	Promotion of new ownership patterns, based on sharing	Promotion of the recognition and management of common goods
Contributes in full potential	1	3	5	4
Contributes but still not in full potential	5	7	3	7
Does not contribute yet but it is planned	9	3	4	4
Does not contribute and it is not planned, although relevant	6	7	8	5
Not relevant	3	4	4	4

NORTE REGION	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	Promotion of work-sharing	Promotion of new ownership patterns, based on sharing	Promotion of the recognition and management of common goods
Contributes in full potential	0	1	1	1
Contributes but still not in full potential	3	3	6	8
Does not contribute yet but it is planned	1	2	3	0
Does not contribute and it is not planned, although relevant	7	4	2	3
Not relevant	3	4	2	2

GOAL 3: PROMOTE THE TRANSITION FROM A MATERIALISTIC TO A CONVIVIAL AND PARTICIPATORY SOCIETY

PORTUGAL	Reduction of working hours	Promotion of frugal, downshifted lifestyles	Exploration of the valuation of unpaid and informal activity	Decentralization and deepening of democratic institutions	Promotion of alternative political systems and capabilities to provide them
Contributes in full potential	6	12	12	11	10
Contributes but still not in full potential	15	33	29	11	15
Does not contribute yet but it is planned	12	6	9	8	8
Does not contribute and it is not planned, although relevant	9	3	5	14	15
Not relevant	18	6	5	16	12

ALENTEJO REGION	Reduction of working hours	Promotion of frugal, downshifted lifestyles	Exploration of the valuation of unpaid and informal activity	Decentralization and deepening of democratic institutions	Promotion of alternative political systems and capabilities to provide them
Contributes in full potential	0	2	0	0	1
Contributes but still not in full potential	2	3	4	2	1
Does not contribute yet but it is planned	1	0	1	1	1
Does not contribute and it is not planned, although relevant	0	0	0	0	2
Not relevant	3	1	1	3	1

ALGARVE REGION	Reduction of working hours	Promotion of frugal, downshifted lifestyles	Exploration of the valuation of unpaid and informal activity	Decentralization and deepening of democratic institutions	Promotion of alternative political systems and capabilities to provide them
Contributes in full potential	0	0	0	0	0
Contributes but still not in full potential	2	3	3	2	2
Does not contribute yet but it is planned	0	0	0	0	0
Does not contribute and it is not planned, although relevant	0	0	0	1	1
Not relevant	3	2	2	2	2

CENTRO REGION	Reduction of working hours	Promotion of frugal, downshifted lifestyles	Exploration of the valuation of unpaid and informal activity	Decentralization and deepening of democratic institutions	Promotion of alternative political systems and capabilities to provide them
Contributes in full potential	0	0	2	0	0
Contributes but still not in full potential	3	8	7	4	3
Does not contribute yet but it is planned	2	0	0	0	1
Does not contribute and it is not planned, although relevant	2	1	1	5	5
Not relevant	3	1	0	1	1

LISBON REGION	Reduction of working hours	Promotion of frugal, downshifted lifestyles	Exploration of the valuation of unpaid and informal activity	Decentralization and deepening of democratic institutions	Promotion of alternative political systems and capabilities to provide them
Contributes in full potential	3	5	5	8	7
Contributes but still not in full potential	6	11	11	3	5
Does not contribute yet but it is planned	8	6	6	4	4
Does not contribute and it is not planned, although relevant	2	1	1	4	3
Not relevant	5	1	1	5	5

NORTE REGION	Reduction of working hours	Promotion of frugal, downshifted lifestyles	Exploration of the valuation of unpaid and informal activity	Decentralization and deepening of democratic institutions	Promotion of alternative political systems and capabilities to provide them
Contributes in full potential	3	5	5	3	2
Contributes but still not in full potential	2	7	4	0	4
Does not contribute yet but it is planned	1	0	1	3	2
Does not contribute and it is not planned, although relevant	5	1	3	4	4
Not relevant	3	1	1	4	2

Data from open answers (organized by region and coded to protect the anonymity of respondents)

	ALENTEJO REGION	Contribution full potential achieved		Contribution still not in full potential		Future plans for contribution	
	Assessment criteria	COD	Practical examples	COD	Practical examples	COD	Practical examples
GOAL 1	Reduction in material consumption			ALT1_EF	We use less plastic and unpackaged products, but some remain.		
	Reduction in energy consumption						
	Promotion of local production and consumption	ALT1_EF	Being a shop for local products (from the district or region).	ALT2_LNM	It is still not possible to be self-sufficient at the food level only with local resources.		
	Incentivization to more sustainable consumption patterns						
	Limitation/reduction of advertising						
	Reduction of number in volume of goods used/consumed per household						
	Promotion of sustainable agriculture	ALT4_P	Project of organic agriculture, without the use of synthetic pesticides and fertilizers. Use of nitrogen fixing plants, grown on site for soil cover. Plantation in keyline to avoid erosion and improve soil quality.				
	Reduction in resource use and resource extraction						
	Promotion of use of renewable energy	ALT2_LNM	Houses with energy efficiency class A / 96% of energy from renewable sources.	ALT4_P	The whole irrigation system works with solar energy. The use of the tractor to collect fruit is still done in motor vehicles, and the use of traction animals is planned for this purpose.		

GOAL 2	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	ALT1 – EF	The cooperative has an internal currency that promotes exchange between co-operators. We organize weekly exchanges of help (<i>ajudadas</i>).			ALT2 – LNM	We have already tried to implement local currency but have not yet found adherence.
	Promotion of work-sharing						
	Promotion of new ownership patterns based on sharing						
	Promotion of the recognition and management of common goods			ALT1 – EF ALT3 – O	We are collaborating with other local associations and cooperatives, but more can be done. It is necessary to have more partnerships with Town Councils and Town Halls		
GOAL 3	Reduction of working hours			ALT1 – EF	We try to reduce working hours and more flexible ways of working.		
	Promotion of frugal, downshifted lifestyles	ALT2 – LNM	Frugal lifestyles can only be promoted by example, otherwise it is just a farce. In our case it is a practice.				
	Exploration of the valuation of unpaid and informal activity			ALT2 – LNM	We accept voluntary work, but we have not yet found the best way to cooperate with helpers.		
	Decentralization and deepening of democratic institutions					ALT2 – LNM	Informal governance takes place in neighbourhood assemblies that are currently not very active.
	Promotion of alternative governance systems and capabilities to provide them	ALT1 – EF	We create self-management systems for the various projects.	ALT3 – O	We must organize more routine moments in which something is done directly linked to the changes we want to promote in both agriculture and urban centres.		

	ALGARVE REGION	Contribution full potential achieved		Contribution still not in full potential		Future plans for contribution	
	Assessment criteria	COD	Practical examples	COD	Practical examples	COD	Practical examples
GOAL 1	Reduction in material consumption	ALG4 _P	We have eco-friendly homes (eco system drains, rainwater pumping, upcycling furniture, etc.), new house in mud, dry bathrooms	ALG4 _P	We want to end up with normal beer and only use that returns the bottles.		
	Reduction in energy consumption			ALG4 _P ALG5 _LUC	The appliances we buy are either class A or AA or AAA. We plan to reduce electricity use in 2018. Need to increase the solar water heating system.	ALG5 _LUC	To decrease energy use, we want to improve insulation, increase shadows in the home.
	Promotion of local production and consumption	ALG4 _P ALG5 _LUC	We produce some of our vegetables and we will increase production a lot in 2018, our shopping ethics are first local, seasonal and organic. Self-sufficient in almost everything from vegetables and meat. Buy very few things and the local market.	ALG4 _P	In our eco resort we also produce our BIO detergents, made by us and soaps, and we make our jams, teas, ... processed.		
	Incentivization to more sustainable consumption patterns			ALG5 _LUC	Airbnb people are inspired by the local practices.		
	Limitation/ reduction of advertising						
	Reduction of number in volume of goods used/consumed per household	ALG3 _P ALG5 _LUC	Our gardening or work tools, machine tools are always in common in our ecovillage, often also vehicles. Electrical appliances that they have are to keep fermented products for sale and little else.				

	Promotion of sustainable agriculture	ALG4_P	We measure in kilos our waste and compost and we also give rest to the chickens. In the regeneration of the lands we use Holistic management and plant many trees this year ... we have advanced irrigation systems with storage and rule by gravity with solar pumps.	ALG4_P	We will plant 112 trees in the month of November and many other shrubs. Our farm does not use chemicals ... it's bio.		
		ALG5_LUC	Biodynamic agriculture, production of manure on the site, use of organic matter (plant, cut and leaves on the spot, canes already eaten by the cow or wood that is, is cut into splinters and placed around other plants).	ALG5_LUC	We make retreats to teach people about sustainable production.		
	Reduction in resource use and resource extraction			ALG3_P	We recycle 100% of our paper-cardboard, recycle about 80% of the textiles, use the land a lot in our constructions, recycle 100% of our wastewater etc.		
				ALG4_P	We catch all the water from the eco resort's home. it's impossible in Portugal to use 80% of the rainwater. We plan to reduce water use in 2018.		
	Promotion of use of renewable energy	ALG3_P	We produce 100% of our energy with solar and wind power.				
		ALG4_P	We have solar panels.				

GOAL 2	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	ALG4_P	We lend spaces for people to plant their vegetables. We lend our oven to a person to cook their bread. We have these kinds of partnerships. We have in our farm an NGO- non-profit association to which we give all kind of support.	ALG4_P	Spend more time helping other projects in the community.		
	Promotion of work-sharing						
	Promotion of new ownership patterns based on sharing					ALG4_P ALG5_LUC	We wanted to pay higher salaries and offer more perks. We want to have a higher annual revenue to be able to help our staff more. We are studying and getting information about other initiatives on new modes of ownership, to realize how you can get more people to live in the place, to solve the problem of property ownership being only mine.
	Promotion of the recognition and management of common goods			ALG4_P	Making more of external networks.		
GOAL 3	Reduction of working hours						
	Promotion of frugal, downshifted lifestyles			ALG4_P	We have days open to the local population, with free activities of dissemination and education.		

	Exploration of the valuation of unpaid and informal activity			ALG4_P	We do not use volunteers at this time. As a company and by law, we cannot use volunteers. We learned this...		
				ALG5_LUC	Volunteer exchange for teaching the type of production and accommodation.		
	Decentralization and deepening of democratic institutions			ALG4_P	We also created with our partners a "backbone organization".		
	Promotion of alternative governance systems and capabilities to provide them			ALG4_P	We use holocracy and some systems of evaluation of sociocracy. We want to further deepen these systems and others in our governance system.		

	CENTRO REGION	Contribution full potential achieved		Contribution still not in full potential		Future plans for contribution	
	Assessment criteria	COD	Practical examples	COD	Practical examples	COD	Practical examples
GOAL 1	Reduction in material consumption	C8_P	Development of ecological sanitation now approved by local council.	C1_CE	50% of the wood used in heating comes from the farm.		
		C10_HS W	We don't print paper advertisements. Everything is online.	C2_CE	Many structures are still under construction. When they are complete, the use of materials will be greatly reduced. Now we must begin again after the destruction in the fires of October 15 to 16.		
				C4_LN M	We try to use the maximum capacity of the materials without interfering with the regenerative development of the natural environment.		
				C5_O	30% of the products used / sold are in bulk.		
				C9_P	Often the reuse of waste / raw materials found on the sides of the "garbage" containers.		
				C10_HS W	Buy food in as large quantities as possible to reduce the packaging impact.		
	Reduction in energy consumption					C6_O	Set up heat recuperators, improve the thermal efficiency of houses.
	Promotion of local production and consumption	C2_CE	50% of the products are locally produced; 70% of purchases are from direct producers	C1_CE	30% of the vegetables consumed are produced on the farm.	C9_P	We want to develop studies on technologies for self-sufficiency.
		C3_CE	Use of local resources, services and food for the organization of events and festivals	C4_LN M	Whenever we can, we promote local commerce and all associated initiatives.		

		C5_0	100% of the vegetables used are produced regionally.	C9_P	Acquisition of some essential goods from local producers (often friends).		
	Incentivization to more sustainable consumption patterns			C9_P	We are always promoting more conscious habits to others, but the task has not been easy.	C5_O	There is still much work to be done to create more sustainable consumption patterns, packaging reuse, conscious, responsible and sustainable consumption.
	Limitation/reduction of advertising			C1_CE	80% of advertising is done over the internet.	C7_P	The use of advertising is essential for our work because we are here creating the need to consume organic products. Here, what can happen is that we do not use agencies, or third parties, but rather make use of the internet and physical media (paper for brochures) and doing the work of image and content ourselves.
	Reduction of number in volume of goods used/consumed per household			C9_P	In producing our food, and in developing our ecological consciousness, we are always in a reduction cycle (voluntary simplicity).		

	Promotion of sustainable agriculture			C1_CE We promote events in the sense of promoting sustainable agriculture (organic and permaculture). C7_P We feed 20-30 families exclusively with organic products, the result of a continuous work of awareness to our form of production, the benefits of biological and networking with other organic producers. In the near future, we expect to double the number of families covered and to encourage the emergence of other small organic producers. At the moment we have a producer in the process of certification by us fomented and other interested. Appropriate technology: We have chosen to use only a motor-cultivator instead of a tractor. A versatile, cheaper and lighter tool than a tractor that allows the cultivation of a reasonable area of land but reducing the consumption of fossil fuels and soil compaction. The cultivator is 5X lighter than a small tractor. because it is lighter it does not compact the soil and reduces the need to reuse it, thus also reducing fuel consumption.		
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	Reduction in resource use and resource extraction	C4_LNM	The creation of spaces for nature limits the use of extraction and enhances its regeneration.	C1_CE	80% of the water used mainly comes from an artesian well.	C6_O	Reuse rainwater, install a watering system.
				C2_CE	50% of the water used comes from the use of rainfall.		
				C6_O	We use water from our own wells, but we want to install a 5-level water filtration system, to have high quality water and food safety.		
				C9_P	We collect rainwater and by reusing waste / raw materials we contribute a lot to this reduction.		
				C10_HSW	Recycling 95%. We make tons of manure every year with dry toilet sawdust and all the leftovers from the kitchen.		
	Promotion of use of renewable energy			C10_HSW	We already have water heating systems with thermodynamic panels.	C1_CE	We want to install solar panels, but we are waiting for financial support.
						C4_LNM	We plan to produce and change our electric vehicles with our own production, even though we lack implementation capacity
						C9_P	It is our will, to be self-sufficient in energy, and water.

GOAL 2	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	C2_CE C3_CE	Exchange of services between labour and existing offer in the school. Sharing goods and dynamizing the local economy.	C1_CE C3_CE C6_O C8_P C9_P	We promote exchange of services. We are still planning to use local currency, we already have the coins produced. Exchange of nuts and other fruit for fresh food, exchange of labour for food. We help creating a community 'tool bank'. Many more community initiatives are planned after the October 15-16 fires that destroyed many homes and livelihoods there. Just to give an example ... we recently exchanged quinces (which we have surplus) for table grapes (which a friend and neighbour have surplus).	C1_CE	We share the contiguous property to carry out activities, as it belongs to one of our associates.
	Promotion of work-sharing					C3_CE C6_O C7_P	We plan to create jobs in the future Attract volunteers to start a garden. The promotion of job sharing and even the introduction of other people to the project is one of the most complicated things, as very few people are interested in sharing responsibility for the venture. You could say that very few people are

						capable of generating self-employment in Portugal. It is a relevant issue, but one in which we are unable to advance through deep cultural issues.
	Promotion of new ownership patterns based on sharing			C4_LNM	Forest Intervention Zones (ZIFs) for the cooperative management of forest areas with a view to their environmental conservation and sustainability in the use of resources and exploitation.	
	Promotion of the recognition and management of common goods	C7_P	Although we are a private initiative, we operate for the recovery / regeneration of ecosystems as a way of producing food.			C4_LNM Public natural parks are not yet possible to do by the current national legal framework.
GOAL 3	Reduction of working hours			C1_CE	We promoted the reduction of the number of hours to be able to put more employees.	
	Promotion of frugal, downshifted lifestyles			C1_CE C6_O C9_P	We promote vegetarian eating and contact with nature. We have a tree house for accommodation. We rely heavily on voluntary work, exchange of goods and services and a frugal life, without excessive consumption and inputs. We practice voluntary simplicity.	
	Exploration of the valuation of unpaid and informal activity	C7_P	We have always worked with volunteers.	C1_CE C7_P	We have volunteer opportunities. Efforts to reduce working hours are only possible with the involvement of more people willing to share	

			C9_P	responsibilities. We will regularly participate in neighbouring "projects", i.e. assisting with what is needed.		
	Decentralization and deepening of democratic institutions		C9_P	The "project" interacts with local development associations.	C9_P	We work with others in the area to create a comprehensive rural development plan for the region. This is not yet complete.
	Promotion of alternative governance systems and capabilities to provide them		C9_P	We make and support all alternative wills to the <i>status quo</i> . An example: We support a local alternative education project.	C1_CE	We plan that our associates will have the power to create new projects, but we still do not have the financial stability to support them.

	LISBON REGION	Contribution full potential achieved		Contribution still not in full potential		Future plans for contribution	
	Assessment criteria	COD	Practical examples	COD	Practical examples	COD	Practical examples
GOAL 1	Reduction in material consumption	L12_O L16_P	Use of clay-based land for housing construction and local straw bales with appropriate technologies for comfortable and durable construction. Bathrooms with vermicomposting and green filters.	L5_LN M L9_O L10_O L12_O L18_HS W L19_HS W L21_HS W	Reuse and recovery of many end-of-life materials; reuse of organic materials for soil reclamation or natural construction. 70% of used products are in bulk. Most of our products are in bulk, but not all are local. The constructions still require some industrial materials. We buy mainly in bulk but our take away ware is still not completely compostable / plastic free. Encourage the customer to reuse the packaging. 70% of used products are sold in bulk.		
	Reduction in energy consumption	L16_P	Heaters with low consumption of wood fuel.	L12_O L13_O	The constructions may require small energy inputs for air conditioning. We promote workshops to clarify our co-operators on measures of energy efficiency, always appealing for the reduction or recycling of the use of materials.	L18_HS W	I think this all goes into the direction of the cafe's energy consume and I have to say that I did not have the time yet to do a lot of research on this topic in terms of energy providers etc. We try to limit our energy use (turning off lights, having automatic lights in the public bathroom etc.) but as a restaurant we

						have a high use of electricity and water. It is on my planning to find better providers and may collaborate with the companies in the future that offer solutions on this topic.
					L22_T	Implementation of green corridors to enhance smooth mobility.
Promotion of local production and consumption	L5_LN M	80% of the vegetables consumed are produced on the initiative site, the rest are from a regional producer network.	L1_CE	Production of vegetables in the school. We do not plant enough for the school group.		
	L9_O	Use of only organic and local/regional products.	L10_O	We tried to make all vegetables and fruits local and seasonal, but that does not happen 100%, ginger and turmeric, for example, do not even exist here.		
	L15_P	Every week we promote and make a soup made with locally grown products. We promote and facilitate a delivery point for a CSA in the faculty.	L14_P	About 70% of the food consumed in the village are local. 70% of cleaning products are made by the project. we have agricultural production that at present can only suppress 60% of the needs of the training centre but suppresses the necessities of the residents to 80%.		
	L18_HSW	We promote the use of local products using mainly local ingredients (in bulk). We work together with local companies and declare all names and references on our menu, so our customers also have easy access to their products. Also, vegetarian boxes are a way to promote local products and businesses for our customers.	L16_P	We are far from producing all the food we need		
			L22_T	CSA group with approx. 10 families, 200 families to purchase local vegetables and directly from the producer (PROVE).		

	Incentivization to more sustainable consumption patterns	L3_CE L18_HSW L19_HSW L16_P	It promotes pro-activity, critical thinking, autonomy, and sense of belonging to the youth community. In this sense it promotes behaviours and attitudes that are more sustainable and with the common good present. The impact in this field is indirect and very long-term. We offer fruit and vegetable boxes to our customers from our organic permaculture producer. The prices of the boxes are much more affordable, since the products are seasonal and local. Consumption of seasonal products. Food dehydration.			L2_CE	We want to implement a store with organic products, but we still do not have enough production.
	Limitation/reduction of advertising						
	Reduction of number in volume of goods used/ consumed per household					L14_P	Sharing of machines and tools at the local level.
	Promotion of sustainable agriculture	L5_LNM L18_HSW L21_HSW L16_P	3 ha in certified organic production and regenerative farming practices, including soil restoration and biodiversity enhancement. Our main producer is a permaculture farmer. Promotion of organic agriculture. We compost by making the			L13_O L22_T	We have not yet promoted sustainable agriculture, but we plan in the future to hold workshops that include this matter with our co-operators engaged in this activity. Collective composting points.

			nutrients circulate. Plant propagation.				
Reduction in resource use and resource extraction				L2_CE L15_P	Rainwater harvesting for irrigation and educational activities. 100% of the spaces occupied by the initiative (or where we had projects, e.g. schools) changed the irrigation system to drip irrigation, with improvement of organic matter in the soil, suitable plantations, and real-time monitoring systems. The great majority of the created projects reused the materials. The organic cycle of the entire campus of the faculty has been closed, and composting of 100% of garden residues and 5% of canteens and bars is already done.		
Promotion of use of renewable energy	L8_O L16_P L13_O	Partnership with <i>Coopérnico</i> and production of solar energy in the initiative site with installed capacity of 7Kwh. Solar panels for water pumps. Solar dehydrators. Solar water heating. Own photovoltaic energy production. When we install a small solar photovoltaic power plant, we always contact installers who are in the installation area to promote the local economy.	L3_CE L5_LNM L22_T	Many students promote the use of renewable energies, school gardens, etc. Due to the need for high investment and the scale of the project to be significant and with several structures / objectives it has not yet been possible to install renewable energy equipment for the whole project in its entirety (we have a solar thermal panel, a biogas plant not yet completed, among others). The first local school with photovoltaic panels directly financed by people (by <i>Coopérnico</i>).	L14_P L22_T	Planning to use renewable energies and sharing with neighbours of the village. Schools and other public buildings with solar panels.	

GOAL 2	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	L1_CE	Markets for fund raising.	L2_CE	We have a bank of hours, but it still does not work with the desired regularity.	L5_LNM	It is planned after the establishment of the cooperative and the development of the local economy to create a currency of its own.
				L3_CE	Through volunteering and citizen participation, the young people support the causes and work in which they believe. This indirectly creates in the young the habit of non-financial transactions. From there we can move on to other models of exchanges.	L14_P	Exchange of services by consultancy services, training actions, plants, seeds etc.
				L8_O	We have a functioning community currency but still with little circulation.	L15_P	A coin system is planned / dreamed up to promote sharing among the various project partners.
						L22_T	Bank of hours at the initiative, introduction of local currency.
	Promotion of work-sharing			L14_P	The members involved in the initiative coordinate so that everyone can leave the project to collaborate in other projects or even at leisure and continues to receive his salary even though he is not present in the project. Volunteering in the project is designed according to the characteristics of the volunteer.	L6_LNM	Managing work while crucial to our mission has not been the main focus.
				L18_HSW	We are a restaurant, we have several employers in part-time, apart from management most of my employer's work 4 shifts of 7h a week. The manager and head chef we have the goal to also limit our hours (which are far more than full time at the moment), but we are not yet in the financial position of hiring and training more help and distributing responsibility.	L13_O	We try to create working groups so that our co-operators can volunteer their time for a particular need or project where the cooperative is involved.

	Promotion of new ownership patterns based on sharing	L5_LNM	This year we inaugurated the creation of a Multi-Sectoral Cooperative in the village centre with a network of local / regional producers.	L22_T	Creation of 'Vizinhar' cooperative, coop for local development.	L2_CE	We intend to settle in a common property.
		L8_O	We are a cooperative and we promote in and out the logic of the economy of sharing and usufruct.				
		L13_O	The production of our plants in the future can be exchanged for solar coins that will be divided among the investing members.				
	Promotion of the recognition and management of common goods	L15_P	The community gardens from the initiative are spaces for total sharing of both work and products.	L3_CE	Through volunteering and citizen participation, the young people support the causes and work in which they believe. Young people are engaged in activities that promote the recognition and management of common property.	L3_CE	Greater involvement in political life by representing young people in local power.
				L6_LNM	Education and information about resource-based economy.		
				L13_O	In order to promote energy efficiency we have acquired three smart meters that are shared among the various members so that everyone can use them for a month and realize which areas of their dwelling are the most energy consuming. In this way, we promote the management not only of common goods but also intelligent		

				L14_P	consumption. There are lands (private property of project members), which give part of it to the development of the environmental education centre. There are common infrastructures in the village, being always the responsibility of the project to pay bills, cleaning etc.		
GOAL 3	Reduction of working hours	L1_CE	Not accumulating too many hours of work.	L8_O	Although we have several efforts to have work rotation and a division of the hours and days according to the needs and wants of each one, we still do not have the economic structure to support what we would consider the ideal scenario.	L18_HSW	As mentioned before, we are aiming to reduce hours for management and head chef and also be able to create more flexibility for employees. There is still a lot of time that has to be invested in training people, even volunteers. After the initial set up phase of the business I would like to take more time to manage employees and volunteers.
	Promotion of frugal, downshifted lifestyles			L14_P L15_P	We promote a simple but complete lifestyle. Organization of events that promote more sustainable lifestyles, such as seminars, workshops, courses and open sessions.	L21_HSW L22_T	Raising awareness about pollution from conventional agriculture, livestock, processed food and plastic on the environment and health. Second hand Christmas markets, children's markets, awareness actions in schools.

	Exploration of the valuation of unpaid and informal activity	L8_O	Paying their volunteers in community currency, which can then be used by them in training, accommodation, etc.	L2_CE L13_O	Volunteering still with little relevance. Our co-operators volunteer their time to represent or promote the initiative in events, meetings, workshops, etc. However, we still cannot find as many volunteers	L18_HSW	We have tried before we have volunteers working for us (in exchange for yoga classes).
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				L22_T	as we would like. Exchanges of help (<i>ajudadas</i>) on the farm, schools, and with scout groups.		
	Decentralization and deepening of democratic institutions	L2_CE L13_O	Democratic system is functioning. By installing small photovoltaic solar power plants, we are contributing to the decentralization of energy production systems.			L8_O	The initiative's political intervention in the last years has been reduced and as opinion-makers and increasingly invited to intervene in social life we believe that we will have a more important political action in the future, especially with the local cooperation and development networks.
	Promotion of alternative governance systems and capabilities to provide them	L6_LNM L15_P	Promoting a resource-based economy. The governance of the initiative is holocratic and uses tools such as sociocracy for decision making thus promoting the promotion of these alternatives.	L14_P	We give volunteers, friends and students the opportunity to express their opinions and concretize projects in the village as long as they are to promote the common good of the project and for the ones that participate in it.	L2_CE	The sociocracy model has been tried but the group is not prepared yet.

	NORTE REGION	Contribution full potential achieved		Contribution still not in full potential		Future plans for contribution	
	Assessment criteria	COD	Practical examples	COD	Practical examples	COD	Practical examples
GOAL 1	Reduction in material consumption	N1_CE	A large part of materials is donated or second hand.	N1_CE	For example, the amount of packaging produced is still about 60% higher than desirable.	N2_CE	We planned to be a zero-waste event already for 2018.
		N4_O	Most products arrive in large containers and are then sold in recycled paper bags, rice fibre bags or reused glass jars, reducing the consumption of packaging and consequently of materials.	N2_CE	Creation of scenarios and internal consumption of materials always choosing recycled, recyclable or used materials.		
		N9_HSW	Promotion of bulk purchase without the use of packaging. Customers can use their own containers and buy only the quantity they want.	N3_O	Recovery of ruin with natural materials (clay, wood) and reused.		
				N6_HSW	In almost all of our events we use recyclable products and the minimum of possible resources, shared rides, reusable packaging etc.		
				N7_HSW	Most of the products used are in bulk, and when pre-packaged, it is a requirement to only use one package.		
				N8_HSW	Large part of the products are purchased in bags of 25kg. We recycle all waste.		
				N9_HSW	We still provide paper bags to customers who do not use their own containers.		
				N11_LUC	Some products have to be packaged individually (olive oil, eggs, vegetables susceptible to handling, processed products, etc.).		
				N14_LUC	The organization of a small community		

	Incentivization to more sustainable consumption patterns	N4_O	The store promotes: Biological products (less ecological footprint, more health, more ecological awareness); local and regional products (boosting the local, family economy, ensuring a more balanced and sustainable development; Reuse of glass bottles, used packaging, boxes of eggs, collected by customers and employees; consumption of quality seasonal products.	N2_CE	We choose restaurants and partners with environmental ethics, but we do not 100% control their choice of products. Several workshops stimulate responsible consumption, which was the theme of this event in 2015 and urban agriculture in its various aspects is a permanent presence.		
		N13_LUC	We only give the responsibility of farming to people that commit to organic practices and to a responsible use of resources, such as water.				
	Limitation/reduction of advertising	N12_LUC	Most fruit and vegetable, organic olive oil is local, or national, however whole grains and flour and others do not encounter them, either local or national.				
		N11_LUC	Communication and dissemination 100% by email.				
		N13_LUC	The initiative reduces to a minimum the use of money and recurring to the market, thus advertising is absent as a principle.				
	Reduction of number in volume of goods used/consumed per household						

	Promotion of sustainable agriculture	N4_O	Producers of fresh produce practice organic and often family farming.	N3_O	We use a composter and a vermicompostor to transform the organic waste into fertilizer for the farm and garden.	N10_T	We are planning a site with sustainable production based on permaculture, with productive and educational purposes.
		N11_LUC	All horticultural crops are organic.				
		N13_LUC	100% of vegetables are produced in an organic way, drawing on permaculture principles.	N8_HSW	Organic waste is used in agriculture.		
	Reduction in resource use and resource extraction			N10_T	Project of door-to-door collection and processing of organic waste.		
				N11_LUC	We expect from the producers to be sustainable and ecological (in addition to being certified as organic) but we do not control it.		
				N8_HSW	We try to the maximum to avoid wasting water.	N13_LUC	Regarding water consumption, installation of a collection tank and respective distribution pipes.
				N13_LUC	At the moment the water consumption of the municipal network is still high, having a project of greater effectiveness in the recovery of rainwater; this project counts on the support of a Faculty of Engineering in Porto (<i>Instituto Superior de Engenharia do Porto</i>).		
				N14_LUC	We talked about the use of grey water, and we have tried something in this area, which we had to give up for technical reasons.		
	Promotion of use of renewable energy			N2_CE	The initiative with permanent energy consumption is powered by solar energy and we would like to eventually achieve	N1_CE	Promotion of the use of renewable energies, namely solar ovens in the kitchen.

					the same for the concerts.	N14_LUC	We have not talked about solar panels yet, because we do not have great economic possibilities.
GOAL 2	Promotion of community currencies, non-monetary exchange systems and alternative credit institutions	N12_LUC	We exchange goods for other goods.	N3_O	We have already participated in a producers/ consumers' initiative with a weekly meeting for exchanges. The way of operating of the association enables the distribution of donations to volunteers, artists, trainers.	N12_LUC	In the future our products will go for families in need.
	Promotion of work-sharing	N2_CE	Sharing work to create more jobs and allow fewer hours of work is a way of being on the team of this event, whenever it is possible to hire another person and distribute work, this is what is done.	N14_LUC	Our products are not sold but are donated to the community. The initiative is formally registered in a local currency network, but has not used it. There was at first, when the Movement Ecosol Porto was alive, an attempt to use the system, that faded away just like the system itself. I suspect that the internal resistance of some distrustful elements blocked the initiative to contribute according to its potential to the success of a local currency.	N7_HSW	I would like it to be possible to employ more people and reduce working hours to 6h/day.

				the other hand, worked very well initially when the project was starting, and since then it is becoming marginal.		
Promotion of new ownership patterns based on sharing	N2_CE	We regularly discuss fairer business models and find the way together.	N1_CE	We develop cooperative practices with other projects and local groups.	N10_T	A cooperative of sustainable consumption is in the pre-embryonic stage.
	N13_LUC	The project management association acts in a cooperative and horizontal way.	N2_CE	It only contributes to the level of the initiatives it promotes but is not yet communicated or seen as a banner of the project. However, it is part of the whole.		
Promotion of the recognition and management of common goods	N13_LUC	The communal vegetable garden distributed by rented land, borrowed to neighbours or made available by the municipality.	N6_HSW	In our case in all activities there is a common fund in which X% of activities is specifically to value the common in several areas important for the sustainability of the project. We are also going to formalize a cooperative for this purpose.		
			N7_HSW	The dissemination and training of what is macrobiotics helps to promote sustainability, the physical and mental health of each one, helps to open the conscience of each one on himself and consequently on everything that surrounds him.		
			N10_T	Raising awareness and promotion for integral education, with pilot project at primary level - 1st cycle, within the public school.		
			N11_LUC	Food as a common good and not a commodity is our philosophy. There is a risk-sharing		

				N12_ LUC	between producers and consumers as regards the variability and unpredictability of the results of agriculture. We make native tree plantations and we are going to work for them being from certified seeds.		
GOAL 3	Reduction of working hours	N2_CE N11_ LUC	We have a 6-hour work schedule that includes time for cultivating and training. Producers are relieved of the commercial part of the process of distribution of production and obtaining income.				
	Promotion of frugal, downshifted lifestyles	N9_ HSW N13_ LUC N14_ LUC	We serve vegetarian and vegan food and encourage unnecessary consumption by promoting bulk The association promotes vegetarian community lunches, resorts as little as possible to mercantile solutions, trying to solve problems through recycling. Joining a community has helped everyone who is participating to live on less money. For example, anyone who is filling out this form has not had an official job for two years and is able to live with no financial worries. Intense sociality based on projects, community work, values and constructive	N2_CE	We all know the need for frugality, but we would be able to be more incidental with each other in this sense.		

			initiatives has diminished, but not eliminated, the need for mercantile forms of conviviality. The practice of discussions and decision-making by consensus has built in all members the social skills necessary for this purpose, and has therefore formed people better able to idealize and implement social initiatives.				
	Exploration of the valuation of unpaid and informal activity	N2_CE N3_O N7_HSW N12_LUC N13_LUC	Each member of the team volunteers, spontaneously, and in the project we work with volunteers who get involved enough. Training of volunteers, provision of meals and sharing of donations with volunteers and collaborators. Some computer and marketing work can be paid with meal vouchers. We are in the maximum capacity to receive volunteers in exchange for food / lodging). The whole project is based on voluntary participation, particularly in the fully communitarian areas of agroforestry and aromatic gardens.	N1_CE N8_HSW N10_T	Most of the activities and initiatives are carried out in the framework of voluntary initiatives. Through workshops about yoga, ayurvedic philosophy and vegetarian diet. Volunteering within the association in the organization of events and courses promotes by itself a less consumerist and more natural lifestyle.		

	Decentralization and deepening of democratic institutions	N13_ LUC	The association maintains collaboration protocols in various areas, such as support for local garden clubs set up in basic schools.			N2_CE	We influence the deepening of institutions through our way of being and contact with the tables but it is nothing controlled or planned.
						N14_ LUC	It has been discussed during some meetings that only if work is done to connect with the community in the neighbourhood in which we live, and if it gives good results, we can make the difference in order to promote horizontality in society more generally, in our life. It is a very difficult task, which has not yet been attempted, and which is in the long run. It will be difficult to see the results, because our lease ends two years from now, then we could relocate, and most of us could leave the project for personal reasons.

	Promotion of alternative governance systems and capabilities to provide them	N1_CE	The whole association is based on a fully horizontal management system.	N6_HSW	All the participants in the initiative have the power to create and manage new projects but we have not yet been able to formalize the process.	N3_3	Build a Mandala governance model.
		N2_CE	We are in permanent reflection on the system of governance and we are testing with us intuitions that we have, or we import models.	N7_HSW	All collaborators are free to evaluate and suggest more effective proposals for the management and structure of the company. These proposals that are always acknowledged and reflected during meetings.	N6_HSW	We intend to create a common structure, a new way of living more just and fraternal.
		N3_O	Project management by dragon dreaming.				
		N13_LUC	The association is governed horizontally, with decisions taken in assembly or through the internal communication list.	N11_LUC	Producers and consumers should play an active role in the initiative's decisions, as well as in the participation of the distribution in the defined places and time.		
				N14_LUC	The ties with the neighbourhood we live in was not valued, so despite the good news I mentioned in the field above, the impact we have on the social life of the city is very limited because of this aspect.		

	ONLINE	Contribution full potential achieved		Contribution still not in full potential		Future plans for contribution	
	Assessment criteria	COD	Practical examples	COD	Practical examples	COD	Practical examples
GOAL 1	Reduction in material consumption			ON1_O	Our boxes are made of recyclable card. We are considering how the box can best be returned to its box to make more "trips"	ON1_O	The boxes go to the carrier in a plastic envelope that we want to cancel.
	Reduction in resource use and resource extraction	ON1_O	All products are free of palm oil.				

Appendix VI: Research outputs, dissemination of the research and other related activities from the PhD candidate

1) Articles published:

Cosme, I., Santos, R., O'Neill, D. (2017). *Assessing the degrowth discourse: a review and analysis of academic degrowth proposals*. Journal of Cleaner Production 149, 321-334.

2) Communications in international scientific conferences:

- Cosme, I., Santos, R. (2019). Articulating radical niche innovations and regime reforms towards a degrowth transition to a more sustainable society. Oral communication at the **13th Conference of the European Society for Ecological Economics (ESEE 2019)**. University of Turku (Finland), 18 - 21 June 2019.
- Klein, D., Cosme, I., Antunes, P. (2019). Assessing the relationship between sustainability initiatives and society in a degrowth perspective. Oral communication at the **13th Conference of the European Society for Ecological Economics (ESEE 2019)**. University of Turku (Finland), 18 - 21 June 2019.
- Cosme, I., Santos, R. (2018). The contribution of bottom-up sustainability initiatives in pushing a degrowth transition at regional and national levels. Oral communication at **IST (International Sustainable Transitions) Conference 2018**. University of Manchester (UK), June 2018.
- Cosme, I., Santos, R. (2018). The contribution of bottom-up sustainability initiatives in pushing a degrowth transition at regional and national levels. Oral communication at **3rd NEST (Network of Early Career Researchers for Sustainability Transitions) Conference**. University of Utrecht (The Netherlands), 15-16 March 2018.
- Cosme, I., Santos, R. (2017). Shaping policy-making processes for a degrowth transition: the role of effective public participation in fostering more autonomous societies and sustainable futures. Oral communication at **ECPR (European Consortium for Political Research) Joint Sessions – Workshop: Beyond the**

Environmental state? Exploring the Political Prospects of a Sustainability Transformation, University of Nottingham (UK), 25-30 April 2017.

- Cosme, I., Domingues, R., Tourais, P., Polido, A., Disterheft, A., (2016). Sustainability@ISDRS2016: a strategy for a more sustainable event. Oral communication at **22nd International Sustainable Development Research Society 2016 Conference**. University NOVA of Lisbon (Portugal), 13-15 July 2016.
- Cosme, I., Santos, R., O'Neill, D. (2015). Assessing the degrowth discourse: from theory to policy. Oral communication at **Global Cleaner Production & Sustainable Consumption Conference**. Sitges, Barcelona (Spain), 1-4 Nov 2015.
- Cosme, I., Santos, R. (2015). Democracy and Sustainability: what is their connection? Oral communication at **11th International Conference of the European Society for Ecological Economics Conference**. University of Leeds (UK), 30 Jun - 3 Jul 2015.
- Cosme, I., Santos, R. (2015). Assessing the degrowth discourse: from theory to policy. Poster communication at **11th International Conference of the European Society for Ecological Economics Conference**. University of Leeds (UK), 30 Jun - 3 Jul 2015.
- Cosme, I., Santos, R., O'Neill, D. (2014). Assessing the degrowth discourse: from theory to policy. Oral communication at **International Society of Ecological Economics Conference on Wellbeing and Equity within Planetary Boundaries**. University of Reykjavik (Iceland), 13-15 Aug 2014.

3) Teaching experience:

- Lecture about sustainable degrowth to graduate students from the European Master in System Dynamics (19th May 2015 at Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa).
- Lecture about sustainable degrowth to graduate students from the Integrated Master in Environmental Engineering (21st September 2018 at Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa).
- Lecture "Sustainable degrowth – an introduction" to graduate students from the Doctoral Program on Climate Change and Sustainable Development Policies (3rd November 2018 at Instituto de Ciências Sociais, Universidade de Lisboa).

4) Master students' supervision:

- Co-supervisor of the student Daniele Klein from the Integrated Master in Environmental Engineering, Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa, in the field of degrowth and sustainability transitions (graduated in 14th December 2018).

5) Organization of scientific events:

- Member of the Organizing Committee for the **4th Network of Early researchers in Sustainability Transitions Conference**, which will be held Lisbon between 14-15 April 2019 | Main tasks: collaboration in the development of the program, scientific evaluation of abstracts, preparation of conference materials, responsible for logistics before and during the conference.
- Member of the Organizing Committee for the **Conference “What Do We Know About Globalization and Where Do We Go from Here?”**, held in Lisbon, 16-17 February 2018 | Main tasks: coordinator of logistics during the conference; collaboration in the development of the program; preparation of conference materials.
- Member of the Organizing Committee for the **22nd Conference of the International Sustainable Development Research Society (ISDRS)**, held in Lisbon, 11-15 July 2016 | Main tasks: coordinator of Sustainability Strategy of the event; coordinator of team of Student Assistants; venue and catering.
- Co-organizer and lecturer at the course **“Threat or Opportunity? Ecological Limits to Global Security”** (“Ameaça ou Oportunidade? Limites Ecológicos à Segurança Global”), on the context of the **Summer School FCSH 2016**, that took place between 25-27 July 2016 at Faculdade de Ciências Sociais e Humanas, Universidade NOVA de Lisboa.

6) Reviewer work for the following scientific journals:

- Journal of Cleaner Production, Elsevier (3)
- Ecological Economics, Elsevier (1)

- Environment, Development and Sustainability, Springer (1)
- Environmental Justice, Mary Ann Liebert Inc. (1)

7) Relevant short courses and certifications taken during the PhD:

- “Finishing your PhD” course, NOVA Doctoral School, Campus de Campolide, Lisboa (PT), 16 + 23 February 2019.
- Active Public Participation and Conflict Management Certification, May 2017.
- Facilitators for education for Global Citizenship course, EAThink Portugal project, Fundação Calouste Gulbenkian, Lisboa (PT), 21-22 May + 18 June 2016.
- “Design Thinking” course, NOVA Doctoral School, NOVA-IMS, Lisboa (PT), 18-19 Feb 2016.
- “Scientific Text Processing with LaTeX” course, NOVA Doctoral School, FCT NOVA, Lisboa (PT), 3,10,17 Dec 2015.
- PhD Summer School, 11th International Conference of the European Society for Ecological Economics Conference. University of Leeds, Leeds (UK), 30-31 Jun 2015.
- “Research Development Skills” course, NOVA Doctoral School, Convento da Arrábida, Setúbal (PT), 17-20 Oct 2014.
- “Science Communication” course, NOVA Doctoral School, FCSH NOVA, Lisboa (PT), 18-20 Sep 2014.

8) Dissemination of research work for society:

Media

- Interview for the newspaper “Jornal de Leiria” about the degrowth research, featured in the article “Ambiente vs Economia: um beco sem saída?” (27th July 2019). Available online at: <https://www.jornaldeleiria.pt/noticia/ambiente-vs-economia-um-beco-sem-saida-10402>

- Interview for the TV show “Biosfera”, with the theme “The ideology of degrowth” (*A ideologia do decrescimento*), broadcasted in RTP2 on 9th February 2019. Available online at: <https://www.rtp.pt/play/p5373/e389124/biosfera>

Participation in events for science dissemination

- Cosme, I., Santos, R. (2019). From degrowth theory to concrete actions: an exploratory study of the role of bottom-up and top-down initiatives in deep sustainability transitions. Oral communication at **Encontro Ciência 2019**. Centro de Congressos de Lisboa (Portugal), 8 - 10 Julho 2019.

Invited lectures & debates

- Lecture entitled “Exploring degrowth as a radical vision for sustainability transitions” held in Universidade de Aveiro, by invitation of the Govcopp research center (29th May 2019, Aveiro, Portugal).
- Lecture about degrowth in the “Sustainability Week” at FCT NOVA (12th March 2019, Caparica, Portugal).
- Lecture about sustainable degrowth and participation in the debate panel “Pós-crescimento num mundo em transição”, part of the event “Os Setembristas” organized annually by the Portuguese political party LIVRE (8th September 2018, Felgueiras, Portugal).
- Lecture about sustainable degrowth to members of the Portuguese environmental non-governmental organization GEOTA, and discussion about how to integrate it in their actions (13th May 2018, Lisbon, Portugal)
- Participation in the debate panel about the documentary “River Blue” about the environmental and social impacts of the textile industry and overconsumption related to fast fashion in the world (29th March 2018 at Impact Hub Lisbon, organized by Fashion Revolution Portugal).