

İSTANBUL BİLGİ UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
INTERNATIONAL POLITICAL ECONOMY
MASTER'S DEGREE PROGRAM

**THE GREEN ECONOMY PERSPECTIVE IN TÜRKİYE: FROM LOCAL
TO INTERNATIONAL ACTORS**

YİĞİT GÜLEN

118674021

Doç. Dr. ŞADAN İNAN RÜMA

İSTANBUL

2022

The Green Economy Perspective in Türkiye: From Local to International Actors

Yerelden Uluslararası Aktörlere: Türkiye’de Yeşil Ekonomi Perspektifi

Yiğit Gülen

118674021

Tez Danışmanı: Doç. Dr. Şadan İnan Rüma (İmza):.....
İstanbul Bilgi Üniversitesi

Jüri Üyesi: Prof. Dr. Ayşe Uyduranoğlu (İmza):.....
İstanbul Bilgi Üniversitesi

Dr. Öğr. Üyesi Emrah Karaoğuz (İmza):.....
Kadir Has Üniversitesi

Tezin Onaylandığı Tarih : 19.10.2022
Toplam Sayfa Sayısı : 106

Anahtar Kelimeler:

Keywords:

- 1) Yeşil Ekonomi
- 2) Ekolojik Ekonomi
- 3) Yerel Aktörler
- 4) Uluslararası Yeşil Aktörler
- 5) Yenilenebilir Enerji Politikaları
- 6) Sürdürülebilir Gelişme

- 1) Green Economy
- 2) Ecological Economy
- 3) Local Actors
- 4) International Green Actors
- 5) Renewable Energy Policy
- 6) Sustainable Development

TABLE OF CONTENTS

Abbreviations.....	v
List of Figures.....	vii
List of Tables.....	viii
Abstract.....	ix
Özet.....	x
Introduction.....	1
1- Theoretical and Conceptual Framework of Green Economy.....	10
1.1- Defining of the Actors of Green Economy in Türkiye.....	10
1.1.1- International Actors of Green Economy.....	10
1.1.2- Local Actors and Initiatives of Green Economy.....	12
1.1.2.1 – Municipalities.....	12
1.1.2.2 – NGOs (Non-governmental Organizations).....	13
1.1.2.3 – Cooperative Societies.....	13
1.2 – Green Economy Conceptualization in the Framework of Ecological Economy and Circular Economy.....	19
1.3- The Elements of the Green Economy in the Context of Sustainable Development and GDP Handicap.....	27
1.3.1- Interpretation of Technology, Cooperation and Decentralization on Green Economy.....	39
2- The Green Political Economy of Energy and Sustainable Cities in Türkiye.....	42

2.1- Green Economy Interpretation on Türkiye’s Energy Policy and Ecological Footprint.....	42
2.2- Green Economy and Green Jobs in the Context of Sustainable Development and Cities.....	53
2.3- Green Economy Paradigms on the Basis of Transportation and Urban Planning of Urban Villages.....	56
3- The Green Political Economy Practices of the Local Actors and Global Indexes of Türkiye.....	70
3.1- Green Economical Global Indexes in the Context of Türkiye.....	70
3.2 - An Representative of a Scientific R&D Based Cooperative in Türkiye: “YERKÜRE: The Local Studies Cooperative” and Food Supply Chains.....	78
3.3 – Political Economy of an Association Carrying Out Green Economy Activities in Türkiye: “Yeşil Düşünce Derneği” (YDD).....	83
3.4 - A Paradigm Of A Municipality Where Green Economy Practices Can Be Sustained: Istanbul Metropolitan Municipality.....	86
Conclusion.....	94
References.....	99

ABBREVIATIONS

CCPI: The Climate Change Performance Index

CO₂: Carbon dioxide

EBRD: European Bank of Reconstruction and Development

EPI: Enviromental Performance Index

EU: European Union

GC: Green City

GCAP: Green City Action Plan

GDP: Gross Domestic Product

GGEI: Global Green Economy Index

GHG: Greenhouse Gas

ICLEI: Local Governments for Sustainability

IPCC: Intergovernmental Panel on Climate Change

IMM: Istanbul Metropolitan Municipality

İSTAÇ A.Ş.: Istanbul Enviromental Management Industry and Trade Incorporated Company

NGOs: Non-governmental Organizations

OECD: The Organization for Economic Cooperation and Development

OR-KOOP: Central Union of Forestry Cooperatives of Türkiye

R&D: Reseach & Development

SEFiA: Sustainable Economy and Finance Research Association

SUMP: Sustainable Urban Mobility Plan

U.S.A.: United States of America

UN: United Nations

UNCSD: United Nations Conference on Sustainable Development

UNDP: United Nations Development Programme

UNEP: United Nations Environment Programme

UNFCCC: The United Nations Framework Convention on Climate Change

WCED: World Commission on Environment and Development

YDD: Yeşil Düşünce Derneği

YERELİZ: Local Monitoring Research and Practices Association

YERKÜRE: Yerküre Local Research Cooperative

LIST OF FIGURES

Figure 1.1. A differentiation between the models of circular, linear and reuse economies.

Figure 1.2. Evolution of the concept of human development in terms of environmental sustainability

Figure 1.3. SOS 1.5: Action areas of “The road to a resilient, net-zero carbon future” report

Figure 1.4. SOS 1.5 roadmap

Figure 2.1. Life cycle GHG emissions from different sources of electric generation

Figure 2.2. GHG intensity of energy consumption in EU

Figure 2.3. Share of renewable energy in gross final energy consumption in EU

Figure 2.4. Türkiye’s total primary energy supply (%)

Figure 2.5. Energy Import and Export in Türkiye in 1970-2015 (Thousand Tons)

Figure 2.6.: GHG emission rates by sector (TÜİK, 2022)

Figure 2.7. Mediterranean Region’s contributors for ecological footprint, ecological deficit and biocapacity. (Percental)

Figure 2.8. Conceptual Framework for the Green Growth Index

Figure 2.9. Projected residual greenhouse gas emissions by country in 2050.

Figure 2.10: Fundamental External Factors and Istanbul SUMP Scenarios

Figure 2.11: Spread Urban Model and Compact Urban Model

LIST OF TABLES

Table 2.1. Advantages and Disadvantages of Compact Urban Model

Table 3.1. Global Green Economy Index by G20 countries (GCEI)

Table 3.2. Scores and ranks for Green Growth Index in Asian Countries

Table 3.3. EPI scores and regional rankings

Table 3.4. Renewable Energy – Rating table in CCPI

ABSTRACT

This study aims to provide an approach on the reflections of the green economy concept by comparing local and international actors active in Türkiye focusing on green economy policy. In this context, the main reference point of the research is how the idea of green economy is addressed by the actors on which the study focuses and the differences in local & international practices. As sustainability and climate awareness has gained prominence with the impact of the Covid-19 pandemic, the sustainable development and green economy perspective in Türkiye opened up new grounds in fields as civil society. Given that the international environmental movement has gained momentum in recent years and the developments in the domestic policies of states have led to more radical changes compared to the 20th century, it is possible to observe that there is a reciprocal interaction on the basis of local organizations in Türkiye with regard to sustainable development and green economy. The findings derived from semi-structured in-depth interviews conducted with organizations working on sustainable development and green economy, constituting the conceptual framework of the thesis, are interpreted through global green economy indices that reveal the green economy perspective and examples of green economy-policy practices on urban and energy in Türkiye. This method, which has been put forward to analyze the local approach of the green economy, will present a perspective on local practices of green city and green energy approach in Türkiye, and a perspective on global green economy indices and international actors.

Keywords: Green economy, ecological economy, local actors, renewable energy policy, international green actors, sustainable development

ÖZET

Bu çalışma, Türkiye’de faaliyet gösteren yeşil ekonomi politikasını merkezine alan yerel ve uluslararası aktörleri karşılaştırarak yeşil ekonomi kavramının Türkiye’deki yansımaları üzerinden bir yaklaşım ortaya koymayı amaçlamaktadır. Bu bağlamda, araştırmanın temel referans noktası, yeşil ekonomi fikrinin çalışmanın odaklandığı aktörler tarafından nasıl ele alındığı ve yerel & uluslararası uygulamalardaki farklılıklardır. Covid-19 pandemisinin etkisiyle sürdürülebilirlik ve iklim konularının giderek öne çıkması ile birlikte, Türkiye’deki sürdürülebilir gelişme ve yeşil ekonomi perspektifinin de sivil toplum gibi alanlarda yeni alanlar açılmasına imkan sağladığı görülmektedir. Uluslararası çevre hareketinin son yıllarda hız kazanmasıyla beraber devletlerin iç politikalarında yaşanan gelişmelerin 20. yüzyıla nazaran daha köklü değişiklikler getirdiği göz önüne alındığında, sürdürülebilir gelişme ve yeşil ekonomi açısından Türkiye’deki yerel örgütler temelinde de karşılıklı bir etkileşimin olduğu gözlemlenebilir. Tezin kavramsal çerçevesini oluşturan Türkiye’de sürdürülebilir gelişme ve yeşil ekonomiyi refere edecek çalışmalar yapan kuruluşlarla yaptığım yarı yapılandırılmış derinlemesine mülakatlardan derlenen bulguların, Türkiye’deki yeşil ekonomi perspektifini ortaya koyan küresel yeşil ekonomi endeksleri ve Türkiye’deki kent ve enerji konulu yeşil ekonomi-politik uygulama örnekleri üzerinden yorumlanması sağlanmıştır. Yeşil ekonominin Türkiye’deki yerel yaklaşımını analiz edebilmek için ortaya konan bu yöntem, Türkiye’deki yeşil kent ve yeşil enerji yaklaşımı ile yerel uygulama pratikleri açısından, küresel yeşil ekonomi endeksleri ile de uluslararası aktörler açısından bir perspektif sunacaktır.

Anahtar kelimeler: Yeşil ekonomi, ekolojik ekonomi, yerel aktörler, yenilenebilir enerji politikaları, uluslararası yeşil aktörler, sürdürülebilir gelişme

INTRODUCTION

In a study based on the concept of green economy, it is first necessary to talk about how the concept itself is defined in the current literature. It is possible to stated that this concept, which is mainly discussed within the framework of liberal and neo-liberal theories, has entered the political agendas of states and central actors with reference to these concepts. Pearce expressed it as "the idea of putting forward a system that is rethought and redesigned based on the maximization of the benefit created by economic man, called *homo economicus*, by weighing the benefits and costs on the basis of individual economy" (Pearce, 1992). The definitions of international organizations draw attention to concepts based on human welfare and social equality. The approaches here are within the framework of liberal approaches are based on reformist arrangements rather than a radical approach. One of the most crucial of these is the definition of green economy by the United Nations Environment Programme (UNEP). UNEP considers the concept of green economy as a less damaging and more "sustainable" economic model, which targets medium and long-term investments in biodiversity, climate change, health and welfare (Özen, Şaşmaz, & Bahtiyar, 2013). UNEP engages liberal objectives for its investments and, conversely, is said to help spread the green economy for the idealization of global green. Again, UNEP's conceptualization of the green economy is critically based on environmental risks and economic scarcities. It is emphasized the cooperation of the private and public sectors by expressing the means to realize the green economy through low-carbon resource use, social inclusion, carbon emission reduction and increased energy/resource activity. This represents an significant perspective because the idea of a green economy based on *sustainable development* is attracting even the most authoritative central actors, such as governments, to engage with a global cause.

Some approaches argue that the green economy does not appear to be entirely environmentally friendly in terms of the impact of neoliberalism. According to Brand, although it is not possible to give a precise definition to the

concept of green economy, which constitutes an oxymoron, the concept of green economy seems to *promise an attractive way out of the crisis of neoliberalism that became evident in and hit fragile countries and social groups* (Brand, 2012). Although the foundations of the green economy were laid in the 1960s-1970s, when ecological concerns were on the rise in advanced industrialized societies, the widespread use of the concept has been post-2008 (Ryszawska, 2015). Afterwards the major crisis of 2008, when neoliberal elements showed their so-called *destructive* nature, the authorities had to look for new formulas to mitigate the effects of the crisis. In the twenty-first century, with the emergence of problems such as food insecurity, greenhouse gas effect, water scarcity, rapid population growth, which affect the environment and the masses, the economic progress of states and societies has reached a bottleneck. After the 2008 crisis, the concepts of low carbon economy, green economy and green economic development have manifested themselves in new implementation areas (Demirtaş, 2017). While considering the rapid change after the financial crisis, the ecological alteration gathered many distinctive actors like societies, countries, and local, central and international authorities to take the initiative together. In the context of Türkiye, the thesis examines the extent to which the elements of the green economy, which form the basis of the thesis, are integrated into the activities of local actors in Türkiye and how local actors, together with central and international actors, are struggling with the consequences of neoliberal crises.

To understand the main arguments and framework of how the green economy perspective has originated, it needs to be look at the year of 1989 as a starting point. The concept of green economy was first discussed in 1989 with the "Blueprint for a Sustainable Economy" prepared by the London Center for Environmental Economics. In this work, the green economy is presented as a new production model, a tool used to achieve sustainable development goals (Pearce, Markandya, & Barbier, 1989). While sustainable development, which is the goal to be achieved, is used the green economy as one of the necessary tools to achieve this goal, it reveals the global economy, which is the search for a sustainable economy against the risks of global warming and climate change. Hart's global economic

models for a sustainable economy are based on a *market economy* (high use of energy and natural resources), a *subsistence economy* (rural and traditional) and a *nature economy* (supports market and subsistence economies and maintains social/ecological balance) (Hart, 1997). Today, the relationship between these three economic areas in ecological and social terms is becoming more and more evident, and therefore the green economy, which is the economic model that will ensure sustainable development, and the creation of green jobs are intertwined with the aim of increasing the use of renewable energy resources (Yılmaz, 2022).

The green economic perspective was mainly based on its sustainability apart from the so-called *brown economy*. In many ways, the regular brown economy models gave infinite tools for establishing and developing the political and economic actors. Their key-driven was the *growth* by using the tools such as natural resources, labor force, heavy industrial materials, etc. It is possible to be said that the essential economic failure has a reason that does not match the ecological purposes of the green economy because markets have another valuation. They do not esteem global natural resources for the people's good (Fiorino, 2014). In this manner, it can be interpreted as growth and development terms finding themselves in a different position after the green economic policies after the 1980s.

In the case of the local actors in Türkiye, including non-governmental organizations (NGOs), the new/ latest municipalities, and cooperative societies contributing to the decentralized economic forms within the green economy's thriving concepts, there are many established fields to understand how the changing global green models' thinking arises in Türkiye. To analyse the current policies on green economy in Türkiye, I focus on the main questions in whole thesis as follows:

- How the local institutional practices and agendas/plans meet with the international political and economic strategies of the green economy in Türkiye.
- In what context the local institutions, including cooperatives, initiatives of NGOs, could impact the sustainability of the green economy.

- What are the primary similarities and differences between the diverse actors regarding the field of the green economy
- How to Integrate Local Actors to Ensure Green Economical Agenda
- Which local actor(s) makes more impact than the other local examples in terms of the green economy in the global perspective

Besides, the well-known institutions, including Greenpeace, the local practices and their implementations can be pretty epitomic to extend newer sustainable models and authentic adaptations from the current EU Plans (Green Deal, Paris Agreement). Working with the international institutions could transform economic policies to become more inclusive and public-wise for healthy decision mechanisms. For example, the green economy's first terms/expressions can be seen between the 2001-2005 Development Plan in Turkish policies with "greenhouse gas" (GHG). After that, the policymakers used the term *green economy* for the first time in 2008 in the official sources. It shows us that the green economy in Türkiye's governmental mechanism is not the early, but it may also be present in new areas to discover.

In the first part of the thesis, the theoretical concepts that form the framework of the green economy and the political economy approaches that form the conceptual framework are examined primarily through the local actors operating in Türkiye and the central and international actors with which they are associated. Covering a wide historical period and spectrum, from the ecological economy and conceptualization of ecological economy to the eco-modernist and orthodox neoclassical approaches of classical economics and liberal theorists, this theoretical framework also includes an analysis of terms frequently used in green economy policies and practices such as sustainability and development which are frequently used in green economy policies in Türkiye. While this section of the thesis discusses some different concepts that form the historical background of the green economy and ecological economy; its main focus is on neo-liberal policies and theories of interdependence shaped by contemporary green economy practices

which currently shaped by the political conjuncture of global economy. In addition, the reflections of problematics such as externalities and market failure emerging from the perspective of sustainable development, which can be considered as the starting point of green economy, on Türkiye's economic policy are analysed.

In the second section of the thesis, I start with the analysis of the indicators that determine the energy supply and demand in Türkiye, and to what extent the factors constituting energy imports and exports are affected by renewable energy policies, focusing on the consequences of fossil fuel use, which has been discussed frequently in recent years. I introduce how the energy supply, which constitutes the major denominator of the decarbonization and emission reduction policy, which the green economy focuses on, affects green growth and becomes a determining factor for Türkiye's position in the international platform, and also how it takes place in energy and urban policies when it is examined comparatively in the international platform. In the next part of the section, the relationship between sustainable urban policies and the green economy is analyzed and how the transformation of compact and socially inclusive cities affects local and international policies is discussed. Research has been conducted on whether the sustainable development established by cities, which represent the living space of today's socio-economic activities, can be achieved from a place that radically transforms green policies or with more reformist (or eco-modernist) regulations. Moreover, a study has been made on how "green jobs", a concept that has been put forward on the relationship between green development and employment, can assure the employment transformation it commits.

The third and final chapter of the thesis focuses on the results of the local actors, global indices and reports analysed in the first two chapters, and also analyses the findings and text excerpts of the interviews conducted on the green economy policies developed in Türkiye. In addition, based on the food supply chain studies conducted by the interviewee YERKÜRE, the carbon and ecological footprint impact of the subjects in this chain throughout Istanbul is mentioned. The last two chapters summarise the perspective of associations in Türkiye on the basis

of Yeşil Ekonomi Derneği (YDD) and explain the role of Istanbul Metropolitan Municipality (IMM) in green economy studies as an example of a municipality.

The methodology is based on qualitative methods, but I also collect and monitor secondary data to point out how meaningful specific discussions, approaches, and perspectives are for statistical indicators of the green economy. In summary, I can say that the comparative analysis I mentioned will coincide with the mixed interdependence of many actors. We see that the areas where the green economy is applied are not only official/public institutions and international organizations but also many organizations operating locally. For this reason, when these institutions are evaluated together with their own environment and their counterparts in the international environment, rather than the practices they do alone, it will be possible to state that green economy practices are in parallel with the examples made elsewhere. Therefore, I aimed to ensure that the international reports and examples I used in the study meet common denominators by creating intersections with national and local examples. In addition, since urban and energy policies based on sustainable development, for which I have created a separate section in the work, have issues that will cover the green economy both locally and internationally, methodologically examining the examples in Türkiye has created an opportunity for me to evaluate the secondary data I have obtained from digital environments.

As a result of the interviews with various institutions and theoretical research, I have seen that the green economy conceptualization in Türkiye does not only proceed from a mainstream place carried out by official policy makers, but some actors can make it happen. These affect key economic policies locally. For this reason, one of the five organizations I interviewed during the fieldwork included a cooperative, three associations, and a company. I used the semi-structured in-depth interview method. I see that municipalities and international associations are among the works they do together with these organizations. I think that one of the most striking results of this study is the effect of operating in sectors connected to green economy, ecological sustainability and development policies on

main policies, and then the domino effect shaped by the negative conditions that emerged due to the climate crisis and pandemic environment in the international arena.

The purpose of the semi-structured in-depth interviews was the thought that it would play a critical role in completing the missing points and gaps in the way of expressing the green economy and related secondary concepts, whose theoretical framework I mentioned, on their own. In this context, I paid attention to the fact that the organizations I interviewed were those operating in Türkiye. I can say that the contacts these institutions have or will make with municipalities, associations, and international actors, apart from their own internal activities, constitute a reference point. Starting from this reference point, I foreseen that some of these organizations with a green economy and related approaches, if not directly touching green policies, at least indirectly affect the economic policies that are attributed as green. From this point of view, I tried to share the findings I obtained from the interviews in detail in the relevant parts of the thesis through the text quoted from the interviews in order to analyze the perspectives that these organizations working in fields such as sustainability, climate, urban studies, and ecology would bring to the green economy perspective.

All of the interviews were conducted through online interview platforms. The interviews were conducted in this way because it was physically difficult to arrange our schedule at a suitable time because the participants and I were involved in professional working life. For this reason, the participants found it appropriate to conduct the interviews online due to the fact that this method saves time, and physical meetings are not preferred much due to the COVID-19 pandemic.

Questions for the participants to answer were formulated within the framework of several headings. In the first stage, the participants expressed in a general framework how they evaluated the issues in the context of the green economy, from the organizations they are involved in, to the fields of activity of the institutions. The main purpose here is to analyze whether institutions' differentiated

fields of activity look at green economy concepts from the mainstream or a more marginal place.

In the second stage, the participants were asked whether they took concrete steps through the forms of association and cooperation provided by their activities within the scope of green political economy and sustainability, if they do, by what methods they achieved this, if not, for what reasons they could not, and if they were planning to do so, what kind of policy they planned from an intellectual perspective—asked to answer.

In the last stage, the participants were expected to discuss concrete situations realized through the green agenda of Türkiye. It has been hypothesized that the wave created by international agreements, legal regulations, and mainstream debates affecting daily practices in various ways will transform green and ecological policies over time.

The organizations interviewed are: Yeşil Ekonomi Derneği (YDD) (Interview no.2), İstanbul Çevre Yönetimi Sanayi ve Ticaret A.Ş. “İstanbul Environmental Management Industry and Trade Incorporated Company” (İSTAÇ A.Ş.) (Interview no.4), Sürdürülebilir Ekonomi ve Finans Araştırmaları Derneği “Sustainable Economy and Finance Research Association” (SEFiA) (Interview no.3), Yerküre Yerel Araştırmalar Kooperatifi “Yerküre Local Research Cooperative” (YERKÜRE) (Interview no.1) and Yerel İzleme Araştırma ve Uygulamalar Derneği “Local Monitoring Research and Practices Association” (YERELİZ) (Interview no.5). I can compile the groundwork incentives why I chose these organizations for interviews, primarily as they carry out studies on a local and national scale in Türkiye, they do not restrain these studies only on their own scale, they stay close to a decentralized structure, and they come together with both official and civil stakeholders from time to time.

In order to provide a theoretical perspective on the green economy, the works of pioneer authors in the field have been used in order to elaborate the conceptual framework of political ecology, ecological economy, circular economy

and sustainable development and to overlap with the field study. In the first two chapters, the works of Huber, who examines sustainable development approaches through ecological modernisation and industrial ecology, Kronenberg, who also includes the relationship between industrial ecology and ecological economy, Burkett, who presents the critique of ecological economy and political ecology, and Castree, who deepens the understanding of green economy and sustainable development, were used. Following these, in order to define green economy and green jobs and to understand their practices in Türkiye, references were taken from the green economy studies of Pearce, Meadows, Yılmaz, Aşıcı and Şahin, and these references were added to my study without detaching from the context of the issues. In the following sections, Türkiye's green economy and climate-based position in the international arena is interpreted on the basis of indices and reports in areas such as carbon emissions, energy policy, sustainable development, sustainable green cities and transportation. Some of the indexes are mentioned: The Global Green Economy Index (GGEI) ,the Green Growth Index, Enviromental Performance Index (EPI), Climate Change Performance Index (CCPI), Brundtland Report (Our Common Future), (IPCC (Intergovernmental Panel on Climate Change), 2021)

1- THEORETICAL AND CONCEPTUAL FRAMEWORK OF GREEN ECONOMY

This chapter discusses the place of international, local and central actors in Türkiye in the contexts of sustainable development and green economy; how the concepts of political ecology, circular economy, ecological economy in the literature create a conceptual framework for green economy; how elements such as carbon tax and externalities are involved in green economy management; and the results of regional and local reflections of policies such as net-zero carbon. In addition, decentralisation and technology, which are frequently included in local policies, are mentioned from the perspective of green economy and cooperation through municipalities / NGOs.

1.1 - DEFINING OF THE ACTORS OF GREEN ECONOMY IN TÜRKİYE

1.1.1 - International Actors of Green Economy

For the comprehensive study, I examine the well-known texts, including agreements, monthly/ annual reports of economic fields, and assessments of summits, from the international, political, and economic spheres, drawing the green economy's global perspective. This perspective comes from the previous practices in the last half of the 20th century. After World War II, international relations improved, and the global actors paved the way for the actual implementation of economic activities. In some ways, this kind of development ensured the expansion of the global economic activities, but excessive development in local and global actors caused problems in resource utilization. After the awareness of these problems, many global actors tended to rethink the sustainable models of existing

economies for the future. There are some considered texts which reflect the international point of the green economy in chronological order:

- United Nations Development Programme (UNDP) (1965)
- United Nations Environment Programme (UNEP) (1972)
- World Commission on Environment and Development (Brundtland Report or Our Common Future) (WCED, 1987).
- Earth Summit (Rio, 1992)
- United Nations Framework Convention on Climate Change (UNFCCC) (1994)
- Kyoto Protocol (1997)
- United Nations Conference on Sustainable Development (UNCSD) (Rio 2012 or Rio+20) (2012)
- Paris Climate Agreement (2016)
- European Green Deal (2019)
- A new Circular Economy Action Plan (2020)
- Intergovernmental Panel on Climate Change (IPCC) (2021)

The concept of green economy was included in the *"The Future We Want"* report published at the UNCSD's Rio+20 summit in 2012 within the framework of green thinking and sustainable development approach, and according to this report, the priority is to eliminate hunger and poverty, and it is stated that the green economy can be an effective tool to promote sustainable development and eliminate poverty (Szjya, 2016). Before that, the sustainability and environment programmes, the foundations of which were laid in 1965 and 1972, were the first time that the major problems of the 20th century (based on industrialisation) were reflected on

the international public opinion. In the following years, it is seen that environmental and climate issues, especially the Paris Climate Agreement and the Kyoto Protocol, have been discussed both in the world and in Türkiye, or at least attempted to be considered as the basis of mainstream political debates. The following parts elaborate on the place of the above-mentioned international initiatives in the green context and in Türkiye.

1.1.2 - Local Actors and Initiatives of Green Economy

1.1.2.1 - Municipalities

Municipalities are institutions that implement green economy practices through various stakeholders within living space. For this reason, it is essential to analyze the determinants such as energy, waste management, transportation, agriculture, food, and supply chain in this living space while examining the applications in terms of green and sustainable cities, which we see both in Türkiye and internationally. Many municipalities established a Sustainable Urban Development Network (Sürdürülebilir Kentsel Gelişim Ağı) to maintain a sustainable governance model. YERELİZ recently conducted training for the municipalities' initiative for the global sustainability goals planned to be implemented between 2020-2024. Here, various municipal representatives shared their knowledge on how cities can benefit from local policies. UNDP also has Türkiye's officials in this training. This plan's future will be monitored, and a global provider of local policy implementation will emerge and give signals to be associated with their texts. The plan is not to examine all of them, but I am going to select their remarkable instances to show how the official local authorities act when it comes to political action about the green economy and its sustainability.

1.1.2.2 -Non-governmental Organizations (NGOs)

Besides the municipalities, some civil managements operate green economic and political acts with both local officials and international institutions. İstanbul Politikalar Merkezi (Istanbul Policy Center) , Yeşil Düşünce Derneği (YDD), Green European Foundation (Yeşil Avrupa Vakfı), Sustainable Urban Development Network (Sürdürülebilir Kentsel Gelişim Ağı), , (Interview no.4), Sürdürülebilir Ekonomi ve Finans Araştırmaları Derneği (SEFiA), Yerel İzleme Araştırma ve Uygulamalar Derneği (YERELİZ) Heinrich Böll Stiftung Foundation can set examples for a comprehensive green political movement. Their presence makes sense for collaboration with many political actors to beneficially revise their political and economic agendas. The relevant organisations will be analysed in the following sections of the study, according to the content of the topics, through their relations with other actors in Türkiye and the world, both in reports and indices and in the results of fieldwork.

1.1.2.3 - Cooperative Societies

Their ability to have authentic skills contribute to flourishing micro-finance, inclusive growth, promotion of eco-friendly products, local skills, and sustainable growth. Their practical work routines engage better inclusive production and manufacturing. In some sources, it is stated that cooperatives negotiate with the other local authorities and actors, such as NGOs and municipalities, which makes their enterprises more visible, inclusive, and integrated into the green economic models. Their decentralized nature is also an alternative structure to the heavy-centralistic official local policies. There are several examples of cooperatives, such as YERKÜRE, renewable energy cooperatives, as well as some urban and community-based cooperatives in Kadıköy, Beşiktaş and Sarıyer in Istanbul Metropolitan Municipality (IMM) and Izmir Metropolitan Municipality.

Cooperatives are provided an example of the intersection of nature, market and subsistence economies and reveal local green economy practices in Türkiye, with a special focus on agro-forestry cooperatives and renewable energy cooperatives. It is seen that the ecological footprint, which is known to have various components, can be measured thanks to basic cyclical components such as agricultural areas, forest areas, and carbon footprint so that organizations operating in these areas (agriculture-forest associations and cooperatives, clean energy companies) present examples of sustainable development. Agriculture and forestry, which are among the sustainable development goals set by the United Nations (UN), are among the main issues of cooperatives in terms of ecology and green economic activities when examined both globally and in Türkiye. Due to their number and organizational structure, associations and cooperatives operating in forestry have wide networks. The Central Union of Forestry Cooperatives of Türkiye (OR-KOOP), which gathers more than a thousand the cooperatives engaged in forestry activities in Türkiye, cooperates with the organizations in the world cooperatives movements, and agroforestry, which is a common expression used by these organizations, is the combination of forests and agricultural (vegetable and animal) production. It is defined as an effective land management system to optimize the exploitation of emerging biological interactions. (Ekmen, 2021).

Not only for forest and agricultural cooperatives but also for the formations that can come together in situations that fall within the scope of other cooperatives. More beneficial use of renewable energy sources is ensured (Özgül, Koçar, & Eryaşar, 2020).

Energy cooperatives, which plan to ensure renewable energy systems (wind, solar, bioenergy, hydroelectricity) and the associated decreasing fossil resource consumption and carbon emissions, are called structures that can affect the green economy tangential economic policy and its actors socio-economically and financially. In addition to the incentives and investments of governments in this area, it is possible to say that local and international actors have taken steps to

ensure a carbon economy through renewable energy, consumption, and production cooperatives. Although urban villages and model cities that have adopted sustainable development create physical spaces that prepare the ground for the political economy of green, cooperatives impact the formation of an overall welfare economy. The socio-economic elements gain transparent and participatory features.

Against the global economy, which advocates standardization and uniformity in the 21st century, local economies are at a point that supports these widespread structures. The recognition of 2012 as the "International Year of Cooperatives" by the United Nations (UN) emphasized the importance of cooperatives, and the role of economic activities of cooperatives in every field and local development was highlighted. Moreover, the UN's announcement of 2012 as the "*International Year of Sustainable Energy*" emphasized cooperative and energy topics again (Cebeci, 2018). In an environment where it is not possible to stand alone against today's global conditions and the disappearance of the historical knowledge that has been forgotten, many cooperatives can come together and form networks. However, their share in the total production is still meager, and the distribution channels from producer to consumer are not yet available to society has not been able to penetrate (Aşıcı, 2012). For this reason, it is possible to say that the concentration of green policies on cooperatives and other local operating organizations (financing and incentives provided by the cooperation of the state and international organizations can be mentioned here) will be increased its effects and shares in the medium and long term, if not in the short term.

Energy cooperatives are divided into production and consumption cooperatives and vary according to the source of energy (e.g. bio-energy, wind or solar), its place in the value chain and the actors with which they cooperate (International Labour Office Cooperatives Unit, 2013). It should not be assumed that these cooperatives only operate within their own sector and framework and have minimal impact. While the influence of corporations, governments, and global enterprises in the energy sector is well known, the "community development" characteristics of energy cooperatives help to build energy sustainability in national

and local economies through grassroots collective organizing and create agendas that are more layered than those of these institutions that wield capital power. It is possible to say that they can create social and sustainable benefits instead of maximizing profit because the power relations of the capital ignore the local relationship networks. Looking at the existing research, it is stated that the prominent renewable energy projects developed by local communities have the potential to be a supportive element for the production of renewable energy and the preservation of the economic benefit within the local economy (Tarhan, 2015). For this reason, it is not wrong to assume that the determination of sustainable/ecological, economic, and social benefits while looking at the examples of energy cooperatives in Türkiye will make a difference in terms of establishing a connection with the examples in the international arena.

It is mentioned the potential cooperation between agricultural and forestry cooperatives and energy cooperatives, which I examined in the previous title. However, it would be incomplete to think that energy cooperatives operate only in rural areas. Today, there are local and collective examples of energy policies related to sustainable urban policies, which we see in particular municipalities and their subsidiaries, apart from energy companies and their stakeholders. With city energy cooperatives established by people coming together, it becomes possible to meet the energy need by using renewable energy resources at the local level, and it also enables these energy cooperatives to be adapted to metropolitan and regional city scales by designing them on a city scale and increasing their technical and financial capacity. From these perspectives, we see the most critical aspects of city energy cooperatives that distinguish them from other energy cooperatives (Kanlı & Kaplan, 2018).

A SWOT analysis has been made in order to see how the city energy cooperatives affect both energy and urban areas, thus revealing the multi-dimensional features of these concepts, which have both historical and environmental relations with each other, such as city and energy: (Kanlı & Kaplan, 2018)

Strengths:

- Ensuring energy needs with environmentally friendly methods
- Supporting micro and macro economy
- Reducing the use of fossil fuels
- Being able to distribute dividends to its partners by providing an effective and efficient service.
- Undertaking an essential mission in achieving sustainable development goals
- Having a pluralistic understanding of decision-making mechanisms

Weaknesses:

- Very high initial investment costs of renewable energy investments
- People can become desensitized to issues such as the environment and energy.
- Difficulty of the energy production process rather than establishing a cooperative
- People do not have enough knowledge about cooperatives and energy.

Opportunities:

- Local organizations to produce faster solutions
- Strengthening social relations with the mechanism of cooperation and solidarity
- Contributing to the strengthening of local democracy
- Employment generation

Threats:

- Having a model proposal that is limited to a geographical area
- The inconvenience of the geographical features of the city in generating renewable energy
- Not enough people wanting to join the cooperative.
- The investments to be made do not provide the expected benefit.

Even though renewable energy investments have increased in recent years in Türkiye, which is known to have a high potential in terms of renewable energy resources, it is observed that Türkiye has not made the progress made in countries such as Germany, the UK and the USA in terms of cooperation in this sector. However, this is in a very critical sector such as energy, in terms of human existence. It can be described as the lack of awareness about participating in cooperatives operating in other fields. (Cebeci, 2018).

As Cebeci mentioned (2018), considering that the relevant regulations were made after 2012, it should be noted that the number of the first renewable energy cooperatives in Türkiye with EU funding is not high. "Aegean Electric Energy Production Cooperative" was established in Denizli, "Karaman Craftsmen Electricity Production Cooperative" in Karaman, Çorum Renewable Energy Cooperative, Amasya Renewable Energy Cooperative, "İzmir Renewable Energy Cooperative, and Nilüfer Renewables Cooperative" established in İzmir and Nilüfer. The examples of Energy Cooperatives, although the number of founders and members are not high, still have the potential to play a role in determining the decentralized sustainable policies in Türkiye. In Debor's (2014) review and analysis, the socio-economic power of renewable energy projects (the Germany-Euro region is taken as an example) is mentioned, and it is added that their share in the total renewable energy market is relatively small in terms of their number and capital. Although it is seen that 20% of renewable energy cooperatives have more than 200 members or capital of more than two million Euros, this is an indication that renewable energy cooperatives have growth potential (Debor, 2014). Although

most renewable energy cooperatives provide their capital from their partners, according to a common and wrong public opinion/perception in Türkiye, it is thought that renewable energy investments are used as a means of gaining wealth in a short time by being financed without capital and almost entirely by foreign resources (Şensöz, 2019).

On the basis of the co-operative approach, it is possible to conclude that the civic space in Türkiye is in line with green economy and sustainability approaches, and that it has a decisive influence on key policies such as energy and agriculture. Moreover, as can be seen in the case of renewable energy co-operatives, there have been initiatives that have attracted the attention of the international community in recent years to disseminate green energy policies to the grassroots.

1.2 - GREEN ECONOMY CONCEPTUALIZATION IN THE FRAMEWORK OF ECOLOGICAL ECONOMY AND CIRCULAR ECONOMY

According to the records of recent years, increasing temperature and climatic changes have increased the frequency and severity of problems such as forest fires, drought, and floods; It has revealed the "new normal" for the planet, adding that basic issues such as food and water problems have become international, these dangers cause the death and migration of millions of people due to climate, and material damage has increased every year (Çetin & Yılmaz, 2021). For these reasons, the *circular economy* has emerged against the establishment of an *egocentric system* based on consuming natural elements that put people in the center of nature and that are outside of that center, created by "*linearized*" economic and political models in cities, countries, their borders and outside for years, with the sole aim of growth and expansion. This concept aims at a self-rebuilding industrial economy and the transition to renewable energy, reducing the use of toxic chemicals and preventing a waste-based order (Önder, 2018). From these

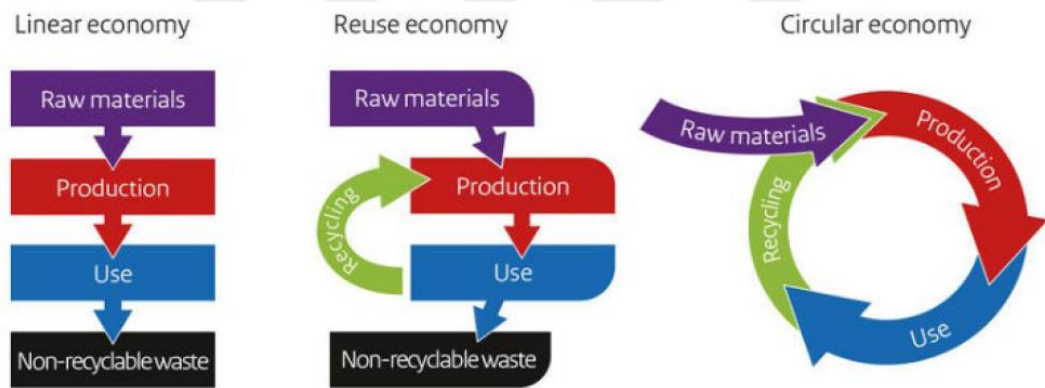
perspectives, the post-pandemic world's political economy will also be nourished from a self-renewing and self-sufficient perspective. While the circular economy is relevant from the perspective of ecological economics and industrial ecology, the latter still fits the dominant language of *green growth* and the green economy (Bruel, Kronenberg, Troussier, & Guillaume, 2018). According to this approach, industrial ecology and ecological economy consider nature itself as a limiter in economic decision-making mechanisms and indicators and reveal the main framework of the circular economy as a concept (Commission, 2020).

In the studies on the interpretation process of circular economy in Türkiye (conducted by BCSD Türkiye and Circular Economy Platform in cooperation with KPMG), it would be definitive to interpret these models in terms of our current economic activity cycles by looking at the transformation of the economic production process and the differences between the concepts in terms of ensuring economic transformation. As can be seen in the green economy discussions of linear economies, it is thought that the linear progress of the economy may put the system in a deadlock in the medium and long term, and the non-recyclable wastes generated will be at an unsustainable point. In addition, it is stated that the circular economy reduces greenhouse gas emissions by 39% and resource use by 28% in the world, providing the same or better output than other systems (Koç, 2021). Therefore, in the transition from linear and reuse economies to the cyclical model, the cycle of production, consumption, and recycling finds its response in a model in which the waste is reintroduced into the system by putting it into the cycle.

According to the European Environment Agency, the term circular economy refers to the transformation of goods and services in a production and consumption cycle that generates as few losses as potential, and the repurposing of potential outputs in new production processes (European Environment Agency, 2014). In addition to the green economy and resource efficiency, the circular economy approach is underlined as critical to the sustainability of humanity's capacity to sustain life on Earth (SKD Türkiye, 2016). In the report, where 5 sectors in Türkiye are examined in terms of circularity, circular economy practices in related sectors

from white goods to plastics, textiles to automotive are analyzed. If some of the outcomes of the report are analyzed, it is seen that Türkiye is below its capacity, but circular economy is inevitable in order to accomplish sustainable development goals. When analyzed in the local context, it can be anticipated that Türkiye, which has substantial trade relations with the European market, and the sectors will soon transition to a circular economy where resource efficiency will be improved, waste and pollution will be diminished, and activation in the international arena will be enhanced in cooperation with the public, private sector, NGOs and consumers (KPMG; SKD Türkiye, 2022).

Figure 1.1. A differentiation between the models of circular, linear and reuse economies (Koç, 2021)



An approach that extends beyond the local with an ecocentric approach can show how the municipalities, which constitute the cities and their management mechanisms in both economic and political contexts, develop practices for crises based on a green economy. The problem facing this approach is how local communities and actors can be more effective in coping with the environmental crisis in the decentralization process and how they can create pressure on companies and organizations (Sönmezoğlu, 2012). By establishing a decentralized structure based on ecology, NGOs, municipalities, and cooperatives can shape their management mechanisms based on their common agenda and put them on the

agenda of central institutions. In this way, observing ecocentric approaches to the management models of the states party to international texts and agreements can pave the way for interpreting local environmental and climate-based problems in an international context with an inductive method.

In the economics of ecology, the steady-state economy, the green political economy, and other heterodox areas of economic thought, there are rich mindsets that the ecocentric economy of the future can leverage and build. The necessity of changing the orthodox economic models and the management mechanisms in their affiliated institutions depending on the ecocentric model will increase the prevalence of green economy inputs and outputs in the context of local governments and indirectly prevent the accumulation of capital accumulation in one hand and its distribution from there by circularizing a linear system. With the change, the ecocentric economy will have to become a larger part of society because the institutional authority of the orthodox-neoclassical economy is a reflection of the fact that we live under global capitalism upon (Dickerson, 2020). This approach, which is necessary to better understand our residents and responsibility-based behaviors, is based on evolutionary liberal thought, with hunter and gatherer societies included in the ethical framework and plays a vital role in understanding and describing natural societies in liberal modernism (DiZerega, 1996). In terms of liberal modernism and its related approaches, ecological thought can be found based on the green economy and the structures that provide its practices. However, there are also ecological and environmental-based conceptual discussions that can occur in the liberal democratic state and its axis.

These debates run through interdependence, green liberal-democratic states, growth, and its limits. Today, states are economically, technologically, etc. it is ecologically interdependent and ecologically; moreover, ecological interdependence here contradicts the independence asserted by the principle of the national sovereign state (Huber, 2000). The interdependence maintains itself through liberal and national-sovereign states' views of ecological issues and puts them on the agenda (*Limits to growth*). As Meadows mentioned, growth sets its

limits, and it expresses through the "green capitalist" economic variances of political ecology. However, green growth that emerged with the opening of absolute growth and unlimited resource use to significant debates in the 21st century, the concept it has is only a part of endless growth. Not as an alternative; it has caused it to be formed from a place that transforms itself. There is no doubt that actors with economic policies that make growth a mere target will experience contradictions due to the recently discussed environment-oriented "downsizing" concept. Unlimited growth due to the size of the global economy that transcends the current vital biophysical limits, economic downsizing for intergenerational equity will be necessary whenever it is necessary to realize and sustain as its activities exceed the ecological limits of the earth (Zhang, 2015).

It may be necessary to interpret the ecological practices of the green economy through these practices of states and international institutions, and to discuss how the network of relations between local and international institutions, which cannot be accidental, should be grounded. When it comes to green economy debates, it is possible to say that the predominant literature proceeds from a liberal perspective, but there are approaches that feed ecological thinking from a political economy perspective within alternative currents of thought. As an example of this, Marxist thought develops arguments on "*political ecology*" since it builds its arguments on accumulation and unequal development through capitalist economic practices. The inclusion of nature and its resources as "*free inputs*" into the capitalist model of production has led eco-Marxists to seek a biophysical explanation. From fresh water to oxygen to human intelligence, all elements of nature have been liberalized in the production of capitalism. The aim here is to explain how and why they underestimate the existence of capitalism on this biophysical basis and thus impose a common political goal on both left environmentalists and Marxists (Castree, 2015).

We can say that the mobilization of political ecology in the capitalist interpretation of nature has led Marxists to put nature on the agenda. The analyses here are mainly based on the "*natural limits*" of nature and how capitalism relates

to nature and through nature to production, labor and capital. However, we cannot say that the debate has turned completely from here. While human beings relate to nature through labor-production, capitalist class society creates a series of secondary mediations based on commodity exchange, which in turn creates an even more alienated tripartite relationship: alienated humanity, labor/production and alienated nature superimposed on the former. By linking the concept of social metabolism with ecological modernization, it questions to what extent capitalist political economy is able to correctly understand ecological problems and to what extent it is able to go to the systemic roots of the problems for solutions. Here, the distinctive element of the ecological value form was its recognition that nature, degraded under the impact of capitalism, was treated as a valueless space while being intensified by a commodity production system that based its value-based calculations entirely on labor (Clark, 2016). From this perspective, it can be concluded that neoliberal mechanisms, which have exploited nature as a cheap commodity for many years, are reforming their own form of labour-production with reference to today's liberal environmental movements by looking at the ways in which they use nature.

In the new millennium, however, sustainable development and simple ecological modernization remain dominant meta-environmental discourses framing sustainability strategies in liberal democratic states (Eckersley, 2006). In contrast to the mainstream interpretation of economics, which interprets the economic system as a closed system with a circular flow within itself, evolutionary thinking describes the economy as an open system of exchange of energy and matter with the rest of the world (Mulder & Bergh, 2001). The flow here is not a reference to the circular economic model itself. Based on the flow of matter and energy, Mulder & Bergh (2001) link the evolutionary nature and its adaptability to the economic structure that treats nature as a commodity.

Ecological modernization and green growth, which are conceptually discussed in a wide range from eco-authoritarian state practices to the eco-socialist democracy model, or the way these models are associated with the economy, reduce

the use of energy and resources based on the limits of economic growth and innovate its technology through its production methodology and design, by providing. In this context, the economic growth discussed makes space for itself by basing its sustainability strategies on sustainable development and ecological modernization to transform into a "green" form. From a more Neo-Marxist point of view, while discussing the opposite relationship between capital accumulation and economic growth in the green context, it is included in a limitation mechanism in capitalist and social democratic modern management practices and even in classical welfare liberalism. Along with this limitation mechanism, the production paradox reintroduces itself to the process of destruction and production. The use of nature as a limitation or restriction mechanism also emerges in ecological economics and industrial ecologies. Questions about the interactions between natural systems and socio-economic systems have received limited attention regarding the substitution of natural capital with manufactured capital, conservation of biodiversity, and valorization of nature in industrial economics (Bruehl, Kronenberg, Troussier, & Guillaume, 2018).

From an ecological economic perspective, the expansion of the economic subsystem is interpreted as being dependent on the size of the overall finite global ecosystem and the overall life support and system in which the economic subsystem maintains more easily complex ecological connections as it grows in scale. (Munda, 1997) The concept of "scale" here is evaluated with the systemic approach of environmental conditions to human, nature, and economic systems, seeing the economic system as a subsystem of the human system and expressing that the natural system has a structure that includes these two.

Suppose the scales need to be evaluated in the context of high sustainability. It is interpreted that human-made capital and its non-substitutable natural capital elements see ecological sustainability as a non-financial indicator. Since the dichotomy of natural capital and artificial capital here defines the bio-physical elements of nature, which is considered natural heritage, in a perspective that cannot be compensated, we can say that the future existence of capital is based on this

dichotomy. Artificial capital is not independent of natural capital; Since resources are required to manufacture capital goods, the success of any attempt to replace resources with capital will be limited to the extent that an increase in the capital requires an input of resources (Munda, 1997). To incorporate natural capital into standard ecological economics, it is necessary to clearly distinguish it from other, less natural types of capital and the different components and elements of natural capital that have differentiated them from others. However, in a way, this makes it acceptable to refer to nature as "capital" in a very inclusive sense; in addition, it sets an example that natural capital stocks should not be associated with flow concepts such as investment, income, and depreciation. (Burkett, 2011).

We also see the mutual structure of natural capital and manufactured capital in ecological and environmental-based problems. We can say that the use of natural capital without effective resource management undoubtedly affects the functionality of the circular economy. Assuming that the ecosystem of natural capital will be formed with a holistic approach to the economics of ecology, it is possible to state that ecosystem services can be cyclical with a physical flow. Thus ecosystems can become a part of human culture. From the perspective of the history of human development, these ecosystem practices have revealed the sustainability of industrialization in the cultural-evolutionary context after a while. The statements of Cantlon and Koenig here also paved the way for the discussion of the ecological economy in the context to reach a cyclical system in this regard. First of all, while ecological economy evaluates everything holistically within the framework of economy and environment interactions, industrial ecology focuses more selectively on the industry itself and its products and the energy flow between the economy and nature, rather than focusing on environment-economy interactions like the other. (Kronenberg, 2006).

Although it can be stated that green growth-based ecological economics approaches address the sustainable development debate from a more political economy in this way, we see that this is an expression of scientific sustainability at the micro level in industrial ecology. The comparative use of these two concepts

has led to a system of thinking in economic activities, one at the macro level and the other at the micro level of ecology. The focus and implementation of resource and waste management, taking into account the material cycle, the functional industrial production system and the nature-economy balance, summarize the main points of the environment-based approaches of the industrial ecology model.

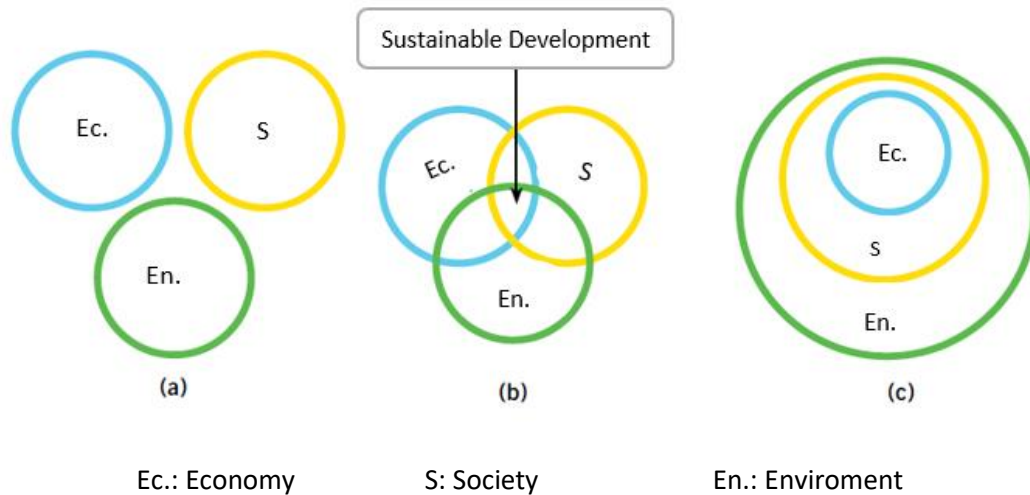
In conclusion, looking at the conceptual context of ecological economics, it is stated that it is attempting to fathom the equation between nature and capital based on predominantly Marxist theories of political ecology, whereas circular economics draws its context from green growth reformist liberal theories. While the green economy is not a straightforward combination of these theories (at least in terms of its position in Türkiye), it is at a critical point in terms of being able to say that it can generate a background for the local production of economic policies, or to place the policies produced on an interpretative basis.

1.3 – THE ELEMENTS OF THE GREEN ECONOMY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT AND GDP HANDICAP

The term sustainable development, first defined in the Brundtland Report (Our Common Future) in 1987, is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987: 37). Sustainable development strikes a balance between economic, social and environmental values, combining present and future development without harming natural resources and the ability of future generations to meet their needs. Sustainability, a topic that has been frequently discussed recently, is no longer the focus of only international and central organizations. It can be said that the impact of sustainable development in both the business world and the civilian sphere, along with the increasing demands for rights and struggles in a wide range of grassroots from NGOs to various local authorities, has also covered the activities carried out in the green field.

The historical development of sustainable development, from Figure 1.a to 1.c, can be stated to be effective in terms of seeing the evolution of human development policies. At first, as seen in Figure 1.a, it can be said that an approach that addressed economic, social and environmental dimensions separately was dominant. However, as mentioned above, with the Brundtland Report, it was stated that sustainable development could only be possible with an approach that simultaneously considers social equality, economic growth and environmental protection, i.e. these three dimensions should be found at the intersection as shown in Figure 1.b. The sustainable development goals set in 2015, on the other hand, in a way, put the concept of sustainability in a place that encompasses human development and created an intertwined sustainable development approach depicted in Figure 1.c. can be said to represent an understanding of development (SKD Türkiye, 2016).

Figure 1.2. Evolution of the concept of human development in terms of environmental sustainability (SKD Türkiye, 2016)



In terms of sustainable development in Türkiye, it can be seen that discussions at the international level are being followed by both official authorities and civil society, albeit lagging behind in some respects. As a country that industrialized from the 1970s onwards, and as a country that industrialized later

than other Western countries, it was only in these years that Türkiye became aware of environmental damages. From the 1990s onwards, it is possible to say that the conflict between economy and ecology became more pronounced as a result of locally developed environmentalist discourses. In recent years, the discourse of environmentalism in Türkiye, particularly at the local level, has argued that the issue is not only the protection of nature; as shown in Figure 1.c, there cannot be healthy economies without a healthy environment (SKD Türkiye, 2016).

In official state policies, we see that Türkiye recognized the "*right to live in a healthy environment*" in its 1982 constitution and was one of the first countries to do so. After 1992, it is possible to observe that there were environmental action plans in the five-year development plans prepared after 1992, and after the negotiations with the EU, it is possible to observe that many laws and regulations on the environment were enacted. It should be noted that Türkiye is a party to relevant conventions in terms of sustainability such as the United Nations Convention on Biological Diversity, the UNFCCC, the United Nations Convention to Combat Desertification, the Montreal Protocol and the Kyoto Protocol (and most recently the Paris Climate Agreement), and although it has some shortcomings, it has made considerable progress in meeting the requirements of the convention (SKD Türkiye, 2016).

In the cooperative production-based ecological economy view, the analytical method used to understand environmental damage in the environmental economics literature, which has its roots in welfare economics, is the concept of externality (Baumgartner, Dyckhoff, Faber, Proops, & Schiller, 2001). In ecology and environment-based economic models, externalities arise when a common production is mentioned. These externalities can be expressed as the impact of a certain economic activity on units that are not related to this activity. Environmental pollution in the acceptance of the wastes generated in the production process by the ecosystem, the problem of non-renewal caused by the overuse of the environment and the environmental damage caused by the wastes released into the environment as a result of production can be called negative externalities arising from economic

production (Kuşat, 2013). In terms of internalising these externalities, social and ecological value creation emerges as the main objective of economic policies. It can also be stated that prices should be set in a way to reflect the real social and ecological costs/benefits.

As a green policy-based application of the externalities issue, a carbon tax has a regulatory aspect in centralised economic policies as it has an impact on prices and costs. If it can be argued that a carbon tax on all stationary energy sources would be much easier to implement/more certain in its impact, and if an immediate market-based impact on the level of emissions is desired, it may be argued that it would be more effective to send a price signal through a taxation to cover the cost of the externality imposed on society by polluters. This taxation would be more favourable than a market mechanism that is subject to all the problems of market failure leading to the problem of carbon pollution.

In a similar context to externality, the concept of *market failure* is argued to play a role in the increase in GHG emissions. It can also be argued that the failure to realize the costs of industrial production in the last two centuries and the direct reflection of these costs on society has led to the problem of insufficiently comprehensive measurements of pollution (Andrew, 2008). Given that the greenhouse problem is a consequence of market failure, it is useful to consider the main causes of market failure before making a judgement about the best way to change the relative price of carbon-based energy sources. Andrew (2008: 395) stated that: *“However, the current problem is the result of a dramatic case of market failure, where industrial organisations are unable to recover the full cost of their production by passing on pollution costs to society wherever possible. The cost to business has therefore always been understated and it is not clear that a market-based solution is the best way to deal with an existing market failure. There are many sources of market failure and many of these problems would be evident in a cap and trade market for carbon emissions.”*

A review of the EU carbon neutrality policies in order to see the practical application of the carbon tax, which is interpreted on the basis of externality and

market failure, will be instrumental in reading the signals that Türkiye will be included in a system that will be affected in the context of both central and local green economy policies in the near future. In response to the EU's goal of becoming the first continent to be "carbon neutral by 2050", the carbon at the border scheme will start in 2023 and envisages a tax on products exported to the EU per ton of GHG emitted during the production process. In this last century of highly developed international trade, it is fair to say that exports to the continent, and therefore trade, will be completely affected. A per ton GHG price of €30 or €50 is envisaged.

$$(\text{Tax liability} = \text{Emission} \times \text{Product (Ton)} [\times \text{Carbon Price}])$$

According to TÜSİAD's (Turkish Industry and Business Association) studies, Türkiye's exports to the EU will be affected by a significant tax increase in the new regulation. Bozhan made the following comments on the EU's carbon tax implementation: *"With this new regulation, the effects of which we will feel more deeply in the future, the EU has developed a radical strategy to reduce emissions against countries that do not take serious steps in environmental policies. Time will tell to what extent this tax will contribute to international green investments and economic transformations."* (Bozhan, 2021)¹ He also added: *"At first glance, this regulation, which seems to negatively affect the sectors in Türkiye, will be valid not only for Türkiye but also for all countries that will export to the EU. Therefore, the regulation, which seems to be against us, can turn into an advantage against our competitors in trade with the right green investments in the long term. In addition, as a third scenario, a carbon pricing policy that will ensure a 21% reduction in the emission rate, as stated in the Declaration of Intended Nationally Determined Contribution submitted by Türkiye during the Paris Agreement process, which Türkiye signed (but did not ratify) in 2019, can be considered. Carbon emissions can be reduced in order to benefit from the exemption of countries that have a special agreement with the Union."* (Bozhan, 2021)

¹ For detail analysis on carbon tax, see: Karbon Vergisi Uygulamasının Türkiye'ye Ekonomik Etkileri (The Economic Impact of Carbon Tax to Türkiye), <https://www.ekoq.com/2022/10/enerji-donusumu-bazi-metallere-duyulan-gereksinimi-artirabilir/>

A green economy is a tool to show how sustainability can be transformed into a “green” form. Assuming that the economy is resource management as we understand it, it is important to read the green economy through the management of waste and its economy, as mentioned in the European Green Consensus after the use of resources, in terms of clarifying this form of sustainability, because what you maintain or transform while talking about these concepts explains the reason for the approach and determines the outcome. At the point of determining the elements of green sustainability that will provide the green economy through scaling, a system in which an ecology and environment-based understanding is interpreted in a cyclical context comes to the fore. In terms of reconciling the green transformation in the local and international context, the green economy is conceptually at a unifying point when you look at it from the international political economy context. In 1997, the Kyoto Protocol was ratified under the United Nations Framework Convention on Climate Change, which is seen as a green consensus (The European Green Deal, 2019) (in terms of the implementation of green sustainability), and in 2021, the Paris Agreement, to which Türkiye later became a party. This agreement is intended to maintain the average global temperature increase below 1.5 °C compared to the pre-industrial period. By 2020, the EU and its Member States have reduced GHG emissions by at least 55% by 2030 compared to 1990. With the European Green Deal, the EU has prepared a strategic plan consisting of seven strategic objectives. These practices undoubtedly provide a precedent for the implementation of green economy policy.

According to the 6th assessment report presented by the IPCC in 2021, predictions about the future scenarios of negative impacts due to greenhouse gas emissions caused by carbon and methane gases and the actions to be taken are stated: *“From a physics science perspective, limiting human-induced global warming for limiting cumulative carbon emissions, achieving net zero carbon emissions and strong reductions in other greenhouse gas emissions. Strong, rapid and sustained reductions in CH₄ (methane) emissions from aerosol pollution limit the warming effect and improve air quality.”* (IPCC (Hükümetlerarası İklim Değişikliği Paneli), 2021: 16) Another noteworthy statement in the relevant report

is that unless there is a significant improvement, the increase in degrees will continue in the current century. It is also stated that the changes caused by GHG emissions cannot be reversed for many years and that climate and risk assessments for regional adaptation should be evaluated in a regional and local context: *“Global surface temperature will continue to rise under all emissions scenarios considered, at least until mid-century. Without significant reductions in carbon and other greenhouse gas emissions in the coming decades, global warming of 1.5°C and 2°C will be exceeded in the 21st century” (...)* Cities exacerbate human-induced warming locally, and the increase in urbanization will increase the severity of heat waves, with more frequent extreme temperatures.” (IPCC (Hükümetlerarası İklim Değişikliği Paneli), 2021:15) The emphasis on locality through cities may cause a dystopian call for the future to be interpreted in the context of sustainable development. It can be said that the fact that today's climate-based international calls have constructed risk modeling through regional and local elements has brought the local characteristic of low carbon and green economies to the forefront. For this reason, local associations and organizations operating in Türkiye are developing action plans in order to ensure sustainable development and prevent a climate-driven dystopian future.

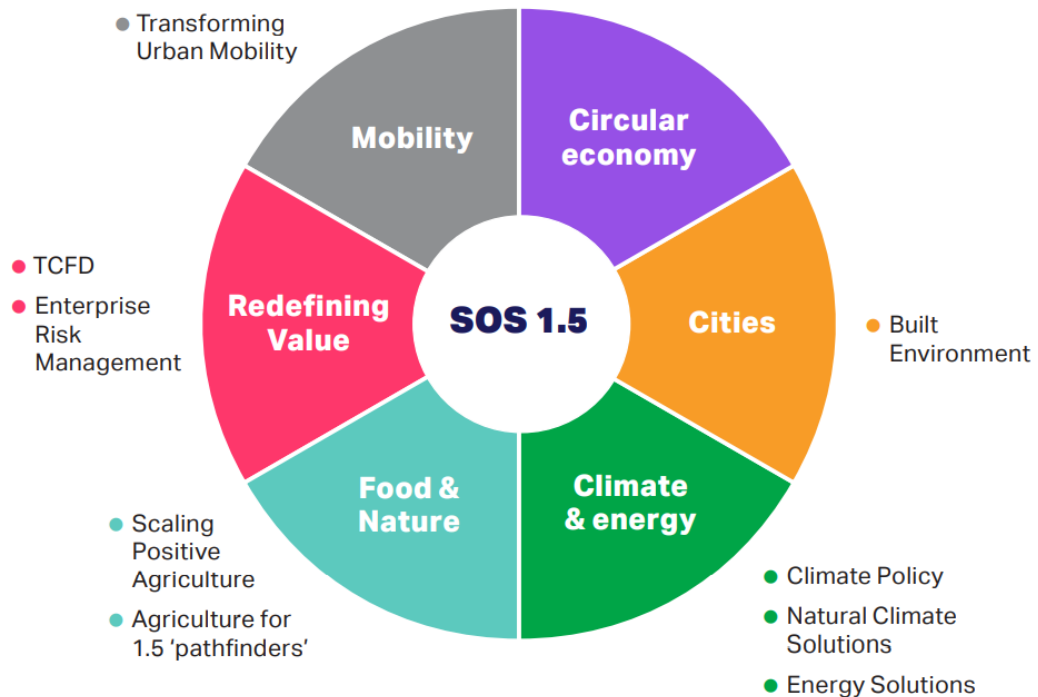
If it is considered local cases in the field of sustainable development, the “Sustainable Development Association” (SKD Türkiye), which stands out in Türkiye, aims to increase the awareness and effectiveness of sustainability with major companies in Türkiye with a focus on the business world within the framework of the UN Sustainable Development Goals as an association. Since 2004, the association has been active, and since 2016, it has been working to make progress in the following 5 focus areas based on these development goals: (WBCSD, 2021)

- Transition to a Net Zero Carbon Economy and Efficiency
- Sustainable Agriculture and Access to Food
- Sustainable Industry and Circular Economy

- Social Inclusion and Inclusiveness
- Sustainable Finance and Risk Management

While SKD, which translated World Business Council for Sustainable Development's (WBCSD) report on the roadmap for net zero carbon into Turkish, has interpreted a series of action plans to reach the net zero emission target in 2050, which is also mentioned in the Paris Climate Agreement, in terms of companies, it can be said that this urgent plan can be valid not only for companies, but also for other local and central foundations. An analysis of the graph of action topics are highlighted issues that fall under the perspectives of the green economy, ranging from circular economy to urban mobilization, energy and climate policies to food security.

Figure 1.3. SOS 1.5: Action areas of “The road to a resilient, net-zero carbon future” report (WBCSD, 2021)



In the relevant roadmap, while the net zero carbon target is evaluated on a company-specific basis, the focus is on low carbon economy by planning roadmaps based on climate risks and different scenarios. The milestones here are the analysis of past and future emissions by creating the value chain, followed by practices and projects to reduce GHG emissions. By aligning these projects and practices with company strategies, transparent governance planning and follow-up management come to the forefront. Emphasizing stakeholders in the value chain draws attention to investments and collaborations and can ensure that net zero carbon economy policies are evaluated with a focus on central and local actors. Information sharing and communication may also demonstrate the potential for stakeholders to spread climate action and galvanize international public opinion on local issues.

Figure 1.4. SOS 1.5 roadmap (WBCSD, 2021)



In my interview with SEFIA, there are statements on various points, from the difficulties experienced in Türkiye during the ratifying and implementation of the Paris Agreement, to how associations and foundations exerted impetus on both the Paris Agreement and the European Green Agreement:

The Paris Agreement has been on the table since 2015. The government here objected to ratifying the agreement in climate planning based on the argument that it did not have access to the Green Climate Fund. However, Germany and France presented a financial package for Türkiye to ratify the agreement. As a result, the European Green Deal was ratified in 2019. The biggest challenge here is that the public conducted its economic policies in a limited environment when it was not everyone's business. Globally, the climate issue has become everyone's issue with the European Green Deal, and it has become a situation where everyone needs to take steps to maintain this. Since the debatability of climate policy in Türkiye coincided with after it became talked about, it brought the resistance to the approval of Paris to a point where it broke. We see that actors who take a more progressive position from the government and are likely to shape the agenda are also involved, as well as events involving "greenwashing," such as the EKO Climate-Economy and Climate Change Summit. We are trying to continue our association activities without falling into the greenwashing trap.²

"Greenwashing", a concept that is at the center of the discussions on the green economy perspective, reflects the efforts of mostly for-profit large enterprises and their global business partners, brands and holdings to transform their in-house policies in a way to ensure green transformation in order not to conflict with global

² Interview no.3, 02.04.2022, online

trends. It is a concept put forward at the point of not meeting socio-economic realities. Its reflection in Türkiye has emerged recently. SEFIA's comment on such transformation efforts was on the risks posed by the green acceleration that started after Türkiye took international texts into account:

The danger of green washing is at a critical point in Türkiye's ecology and climate agenda because Türkiye has been included in these discussions after the Green Deal. In this green economy and financing issue in Türkiye, we see that a position has been taken that is involved in the direction the money flows. Although we say that this green transformation has increased in the last ten years, we see that it has accelerated, especially in the last two years. While I say that the examples abroad are at a more sincere point with the private sector's adaptation to this transformation for a long time, I think that our situation has something to do with being involved in this transformation later on. Türkiye's position here is limited within the framework of the greener economy, and it is not yet within a deep ecological framework and structure..³

The eco-modernist idea of green growth takes place as a form of imagination. Considering climate policy as a growth strategy by the sovereigns reveals the relationship between economic growth and green growth, and at the same time, if it is assumed that there is a green growth idea and strategy discussion in the Paris Agreement, the question of whether capital legitimizes this through growth arises. By emphasizing the effects of economy, nature, and ecosystem relations on Gross Domestic Product (GDP), the fact that economy, nature, and ecosystem relations are so intertwined and that they are spoken more frequently in the international arena, and that local actors such as carbon emissions have turned this eco-modernist idea into a tool of economic policies created in line with the

³ Interview no.3, 02.04.2022, online

global goals of international rulers. Economic growth, which is discussed over green growth, and accordingly left and proper ideological tangents, also deals with growth.

Thinking about how the GDP can envision the green economy and green growth, one can find a number of elements that include the redefinition of well-being, which is one of the principles of the green economy. When ecological economic development, human welfare and quality of living are taken into consideration, the positively correlated increase in GDP may pose problems for the political economy of societies and states. Therefore, it is worth analyzing what kind of GDP calculation module has been developed or will be developed in the long term in economic indicators where green growth is evaluated and calculated by paying attention to the GDP handicap. This model, which can also be referred to as the *green GDP* model, can be demonstrated to be implementable with a number of calculation techniques and methods. These techniques and methods can be outlined as strengthening the green concept, implementing a recycling-based economic model, emphasizing economic and sustainable development instead of economic growth, establishing a green production, consumption and distribution cycle (circular economy model can be a precedent for this), promoting socio-economic activities based on "*reduce, reuse, recycle*", optimizing economic benefits to pollution and emissions, and constraining or revising economic activities that encourage unlimited growth (Wen-xiu, en-Jian, & Xiao-long, 2014).

In order for global sustainability policies to achieve their purpose, to be applicable in the context of political economy, as well as for the sustainability of the world and to reduce the footprint of societies, global initiatives have been tried to be made politically, but their applicability largely depends on the economic effects of potential actions (Sertyeşilışık & Sertyeşilışık, 2019). Therefore, the main actors of the international political economy can bring its sustainability to discussion on the national and international agenda by integrating it into a more complex system. So, what is the impact of sustainability on ecological and green growth-based approaches? When we consider ecological and economic growth

together, can we evaluate sustainability in this category? When these questions are considered in detail, the integration of international trade system and international financial architecture with international regulations to the green new order and/or the idea that conventional concepts have been overthrown (or at least revised) including the last century may provide an international ecological adaptation, albeit partially. Sustainable welfare, which is another form of expression, may be necessary for the reformation of speculative hot money flows. The uncontrolled hot money flows of the international financial architecture through international consortia will lead to the increase in the money value and income effect of the countries, the deterioration of the environmental standards and ecological balances of the countries, and the pressure of nature and poverty that will increase by inflating the speculative bubbles in the countries. (Aşıcı, 2012).

As a result, the sustainability issue, which has been ongoing since the second half of the 1980s, has a perspective that encompasses society, economy and the environment when read together with the subjects in the civil sphere. For this reason, it is seen that many steps have been taken both internationally and locally to support the green economy perspective, such as the applicability of the Paris Climate Agreement and the implementation of zero carbon policy. It can be argued that the cooperation of civil society and the public opinion they create have an impact on the decisions of official authorities and on the elements that will determine international economic policy such as carbon neutrality.

1.3.1. - Interpretation of Technology, Cooperation and Decentralization on Green Economy

The fact that changes in technology can reduce and prevent environmental impacts, together with advanced new technologies, has led to the fact that more can be done using less (Victor, 2010). Monitoring the factors that change the economy of the climate, namely water, sound, and air pollution, together with technology,

introducing digital measures that will ensure that people living in cities and settlements are least affected by this pollution, especially when examined in terms of municipalities, in terms of showing how technology creates a localization in the context of the green economy interpretable. In the example of municipalities, since big cities have many districts and districts, even minimal problems can make it more difficult to detect because there are no sharp distinctions within the boundaries of these districts. For instance, a pollution problem occurring at the border of two different districts (such as toxicity or odor in the region due to the accumulation of wastes) may lead to the separation and conflict of the subjects who will participate in the solution. The political elements here may reveal an inter-municipal dispute over the cause of the pollution. They may be content with blaming each other for who is within the borders of the problem rather than solving this pollution. In such a case, technology and innovation may have a triggering role in ensuring the cooperation of local policy decision-makers in the context of the district and metropolitan municipalities because it is impossible to solve today's complex ecology and environment-based problems with conventional methods.

As today's environmental issues become more complex, it is possible to see that elements and structures that have not come together before for solutions come together. Here, we can see that municipalities and local organizations and possible environmental and sustainability-related problems in the international arena set a precedent for local environmental problems. As it is known, governments are only responsible for environmental and sustainability problems that arise within their borders, and even international agreements are ultimately dependent on the principles of implementation in national contexts (Kissinger, Rees, & Timmer, 2011). Although we are talking about a global movement, many countries and international organizations keep their sustainability-themed policies at a more local level. Moreover, an interregional ecological crisis can take its example beyond national borders and requires a collective action plan and strategy to resolve situations across these borders. When we look at it in this context, we can say that environmental problems such as pollution and waste problems should not be a situation that only a municipality can solve with its methods, but rather that more

than one municipality, organization, and structure should come together in a way that does not depend solely on their political identities and put forward a collective work as I mentioned. Although local political decision-making mechanisms generally have an attitude of supporting local hegemony rather than playing a constructive role in solving problems. For this reason, it is necessary to prevent conflicts of interest, to increase the diversity of institutions that can come together in a crisis, and to bring together the conditions for cooperation by structures such as international organizations, non-governmental organizations, and cooperatives by getting rid of political and economic divisions. For instance, with the development of 5G and automation technologies in recent years, urban mechanisms have started to mobilize like technology itself. The assumption that cities will be designed differently with environmental crises and that labor input will also undergo a transformation with automation has become a topic of discussion in academic circles. Here, the debate on whether the actors that will play a role in the solution of environmental and ecology-based problems, such as municipalities and NGOs, should look from a laborer's perspective or an eco-modernist perspective when it comes to the transformation of labor, has also been debated. Urban and environmental practices bring an informal interpretation to the relationship of economic activity with labor due to the organic networks fed by the locals. While an approach deals with growth, it is also possible to critically interpret technology and innovation. While a more optimistic approach makes technology a role model in the green context of the future, a more cautious approach to it is also on the agenda from time to time.

In this chapter, it has been seen that green economy cannot find a theoretical response on its own, but can find an integrity with the concepts of ecological economy, political economy, circular economy, sustainable development and industrial ecology. From this point of view, it is seen that international studies on sustainable development, in which green economy is used as a tool, have an impact on regional and local scales; and that negative concepts such as externalities and market failure and concrete examples such as carbon tax and net-zero emission provide information about the projection of Türkiye's green economy policies.

2- THE GREEN POLITICAL ECONOMY OF ENERGY AND SUSTAINABLE CITIES IN TÜRKİYE

The ecological footprint, energy use and urban elements which are among the green economy indicators, has revealed the need to regulate transportation and planning networks of urban areas, and energy policies. Due to the intensity of the relationship between human beings and the environment, this section analyzes the implications of Türkiye's energy and climate policies on the green economy, starting with ecological economy practices through the issue of ecological footprint. Subsequently, the interrelations between current urban practices and green economy practices in Türkiye are examined through elements such as urban, transportation and green jobs, which can be considered as the cornerstones of sustainability and local practices of green economy.

2.1 - GREEN ECONOMY INTERPRETATION ON TÜRKİYE'S ENERGY POLICY AND ECOLOGICAL FOOTPRINT

As Meadows (Meadows, 1972) puts it in "The Limits to Growth", the sustainability of the future depends on your ecological footprint; Accordingly, the basic concepts put forward as the key to a sustainable future consist of meeting human needs, reducing and managing environmental pollution, controlled population growth and resource consumption.

The ecological economy includes economic activities aimed at making the economy sustainable without commodifying the natural environment, in a sense, environmentalizing and greening the economy. Therefore, instead of the standard economic approach that relies solely on the market mechanism to analyze economic activities, ecological economics considers multidisciplinary and interdependence approaches that include the natural environment (Şahinöz, 2019). According to the understanding within the concept of ecological economy, it is argued that the

commitment to ecology and natural values does not belong only to nature, and therefore every natural asset should contain an economic value (Mızık & Avdan, 2020). Therefore, the ecology of economic assets, the capacity of the resources of the world we live in, and the management of the wastes that will occur due to their consumption have revealed the interpretation of both biophysical and environmental contexts. The fact that the reduction of consumption and related natural resources and sustainability has become an ecosystem issue has caused the ecological footprint to appear in many areas today. The concept of ecological footprint makes environmental sustainability measurable, reveals the quantity of pressure on natural resources and the factors that cause this, and deals with the relationship between nature and humans from a new perspective (Tosunoğlu, 2014).

When viewed from a scientific approach, there are valuable and valid methods of pressure on natural resources, but the existence of consumption and production-based ecological footprints is mentioned. A broad-spectrum can be mentioned, from the productive lands of the biocapacity of geographical regions to the mechanism of producing renewable natural resources and waste control of wetlands to the global hectare criterion in bio-physical areas. Since we are a country where energy is imported, the transformation of resources due to the reflection of renewable resources on the green economy will undoubtedly create green added value if we look at it from the ecological economy context.

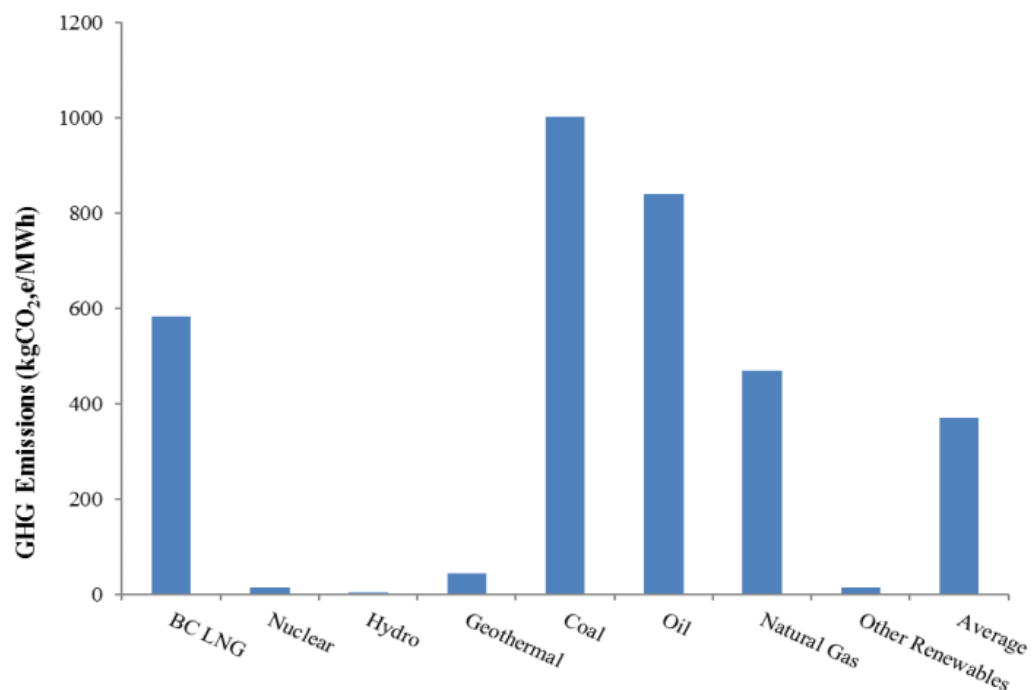
It can be claimed that it is a generally accepted statement that turning to energy imports to meet energy demand increases economic dependence on foreign sources. While in 1970, 77% of Türkiye's total primary energy consumption was met by its own domestic natural resources, this ratio dropped to 28% in 2010 (Özsoy, 2015). Although it can be said that the difference is due to the transition from Türkiye's import-substituting and self-sufficient economic policies to import-dependent global neoliberal economic policies in 40 years, the steps that will ensure that the country's current carbon emissions are reduced from high levels to reasonable levels will reduce import dependency, and especially It is possible to state that the difference between energy imports and exports, which has increased

in recent years, will decrease in time to balance the demand. However, according to the Organization for Economic Co-operation and Development (OECD) report, Türkiye's rate of fossil fuels is around 88%. The total energy supply has increased by 76% since 2005 due to the increasing energy demand. Türkiye plans to reduce its dependence on energy imports and ensure its energy security through the internal production of renewable energy, nuclear energy, and coal (OECD Environmental Performance Reviews: Türkiye, 2019). The point that draws attention here is the use of renewable energy and the increase of the share of fossil fuels and nuclear energy to reduce import dependency. In the context of both local and national energy strategies, Türkiye wanted to add nuclear power plants to renewable resources with a climate-protective perspective in order to minimize its dependence on imported energy and increase the use of domestic resources (Özgül, Koçar, & Eryaşar, 2020). Although the public has controversially evaluated the use of nuclear energy, it has been preferable because it has low carbon emission figures and is presented as an alternative to fossil fuels in this respect. In the arguments produced on energy imports, it is stated that nuclear energy is both advantageous and disadvantageous in the energy market predominantly formed by fossil fuels. While energy supply is expressed scientifically and ethically in terms of sustainable development, environmental security is also on the agenda; Especially concerning carbon emissions, climate change has become significant in setting energy policies on a sustainable basis (İşeri & Özen, 2012).

Considering Türkiye's energy dependency and the increasing trend in the import level due to it, it would be appropriate to say that the energy potential from the sun has an undeniable share as a country located in the Mediterranean belt. However, it is thought that the problem arises from infrastructural and demand-related reasons. With its potential and ease of use, solar energy is not used effectively and widely enough, despite the fact that it can be spread more efficiently than other renewable energy sources. However, it is already in the sun belt (Cebeci, 2018). It would be an understatement to explain the reason for this situation only with technical elements such as infrastructure. Of course, although these have an

impact, it can be said that reasonable public opinion and sectoral cooperation do not find a sufficient response in local organization networks.

Figure 2.1. Life cycle GHG emissions from different sources of electric generation ⁴ Adapted from (IPCC, 2012).



The GHG emission rates seen in the chart are mainly concentrated in coal, oil, and natural gas, and the share of nuclear, hydro, and geothermal resources here remains very low. Since it is seen that all of the related resources (including possible solar energy in other renewable resources) are renewable energy resources, it is seen that the most basic plan to be realized in reducing greenhouse gas emissions is to expand the use of these resources. As can be seen in the Figure 2.1, a parallelism can be established with the decreasing GHG in EU (European Union) countries and

⁴ The resource expressed in BC LNG is the liquid natural gas used in the Canadian province of British Columbia.

the increasing renewable energy consumption in over time. EU countries, which have taken radical steps for the transformation of energy resources in the last two decades, have increased the share of renewable energy resources, which is a fundamental indicator of green economy in gross energy consumption. Due to the inverse correlation between the use of renewable energy sources and the intensity of GHG emissions, the energy use of EU countries is included as an instance for comparison with the energy supply in Türkiye:

Figure 2.2. GHG intensity of energy consumption in EU, Source: (Affordable and clean energy, 2020), *Eurostat*

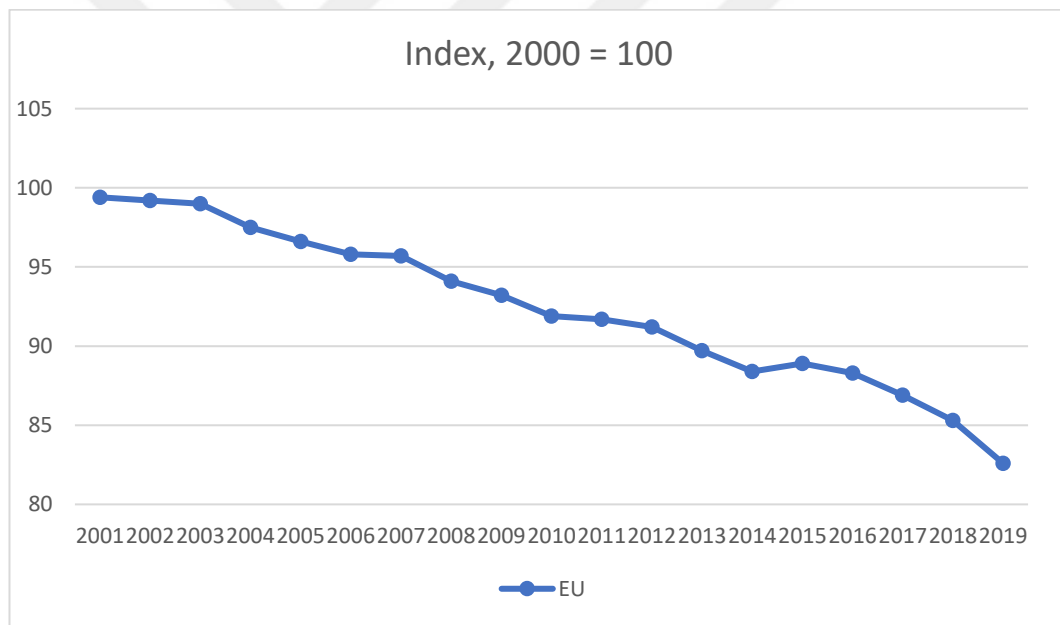


Figure 2.3. Share of renewable energy in gross final energy consumption in EU, Source: (Affordable and clean energy, 2020), *Eurostat*

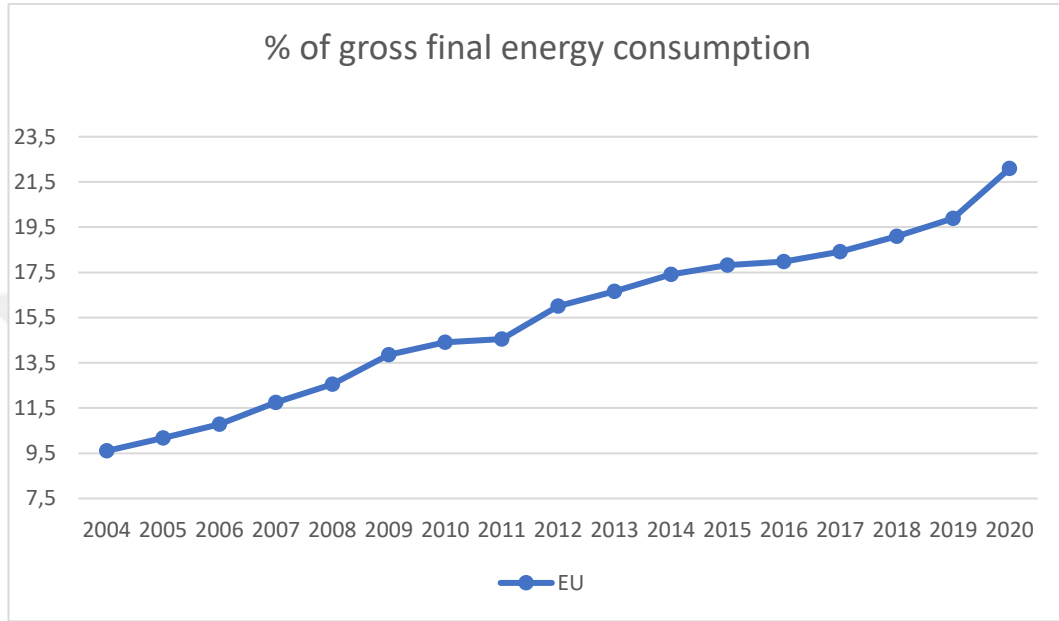
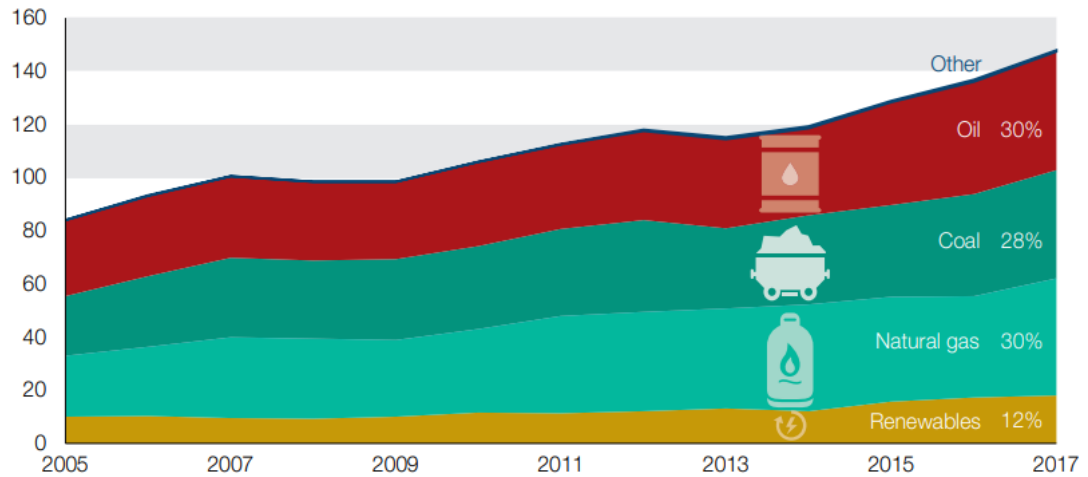


Figure 2.4. Türkiye's total primary energy supply (%), Source (OECD, 2019)



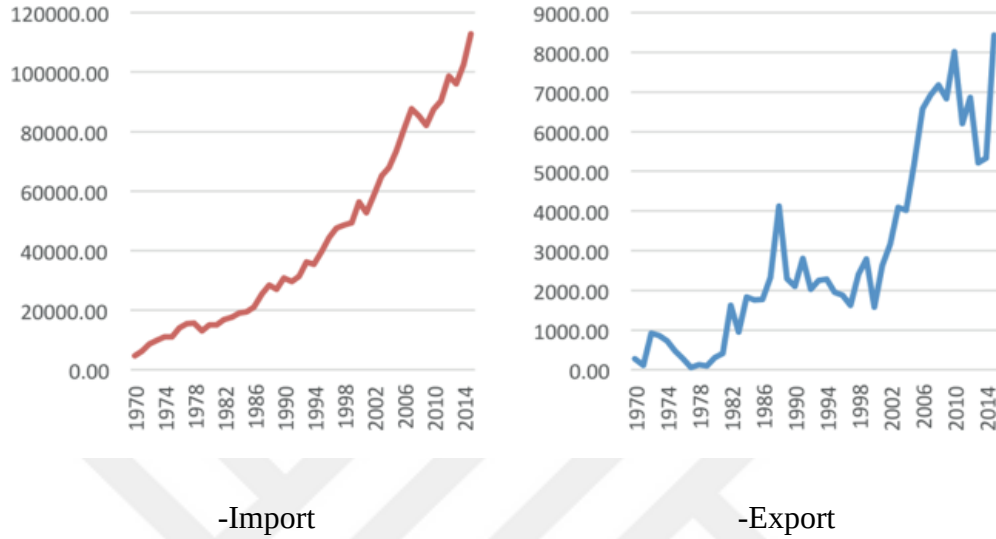
If we look at Türkiye's essential and primary energy supply, we see that renewable energy fuels remained at only 12%, besides fossil fuels, which was 88% in 2017. If we interpret the increasing trend, we can state that the main reason for this increase in fossil fuels is that, depending on the increasing demand, the energy

supply is directed to the sources that can meet this demand in the most reasonable and fastest way. Undoubtedly, there are problems created and caused by the purely demand-oriented evaluation and implementation of this situation. and plans are available in the state's official development plans.

We see that renewable energy policies are also included in the Eleventh Development Plan (2019-2023) prepared by the Presidency of the Republic of Türkiye, Ministry of Strategy and Budget. The increase in energy demand is mentioned, and the increase in the share of renewable energy in total production is also noted as a special issue. The matters mentioned in the articles in the relevant plan and which should be mentioned are as follows (Strateji ve Bütçe Başkanlığı, 2019):

- Use of domestic equipment in the field of renewable energy; New investment models that support mechanisms based on factors such as technology transfer, public procurement and research & development (R&D)
- Inter-grid integration of renewable energy-based generation, which will increase in line with the provision of electricity production from renewable energy sources, and investments for the realization of this
- Establishment of energy storage systems, including pumped storage hydroelectric power plants, to remove the constraint on the growing renewable energy grid.

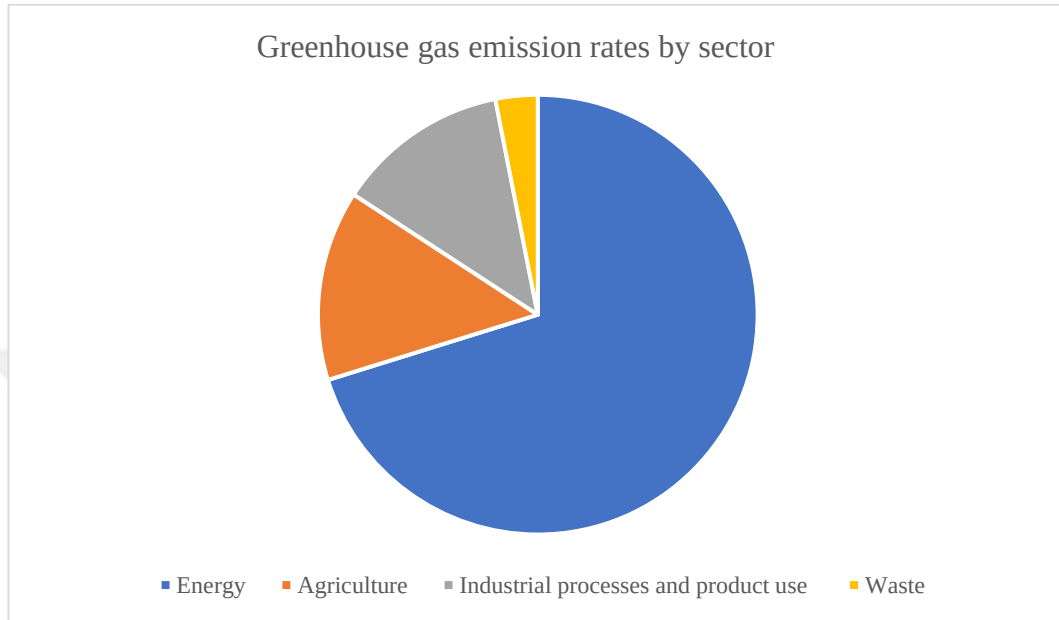
Figure 2.5.. Energy Import and Export in Türkiye in 1970-2015 (Thousand Tons) Source (Saritaş, Genç, & Avcı, 2018)



As can be seen in the related graph, it is seen that Türkiye's energy infrastructure is based on imports, and it can be said that especially oil and natural gas have a significant share in imports among the energy resources imported by Türkiye, which is mostly dependent on foreign energy (Saritaş, Genç, & Avcı, 2018).

In the light of the data showing that energy imports mainly consist of fossil fuels, the energy imported in Türkiye must consist of such fossil fuels, that is, energy sources with high carbon content, and that it includes activities that enable the use of renewable energy sources to become the main component of the economic policy. While it is seen that energy imports have a more stable increase compared to exports, it can be said that the fluctuations in exports show parallelism with the increase in demand due to the increasing population of the country over time. The multiple public benefits of renewable energy in Türkiye include increased fuel diversity, environmental improvement, reduced impact of energy price volatility on the economy, and increased GDP and economic productivity, expressed through more effective production processes. (Özsoy, 2015).

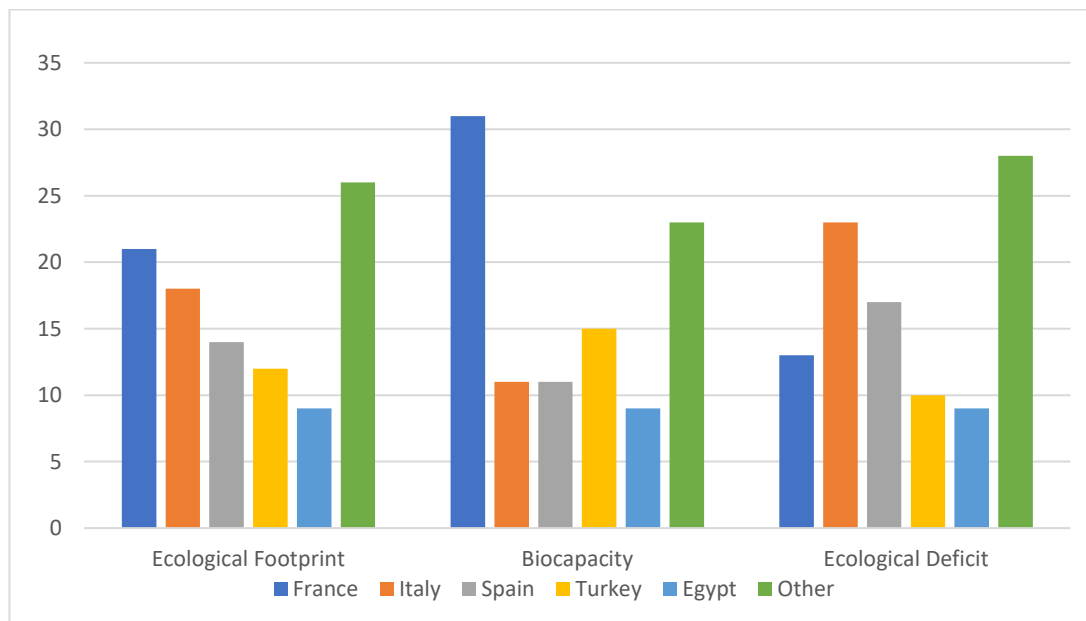
Figure 2.6.: GHG emission rates by sector (TÜİK, 2022)



On the chart, GHG emissions are heavily concentrated in the energy sector, which is reasonable for green economy politics in Türkiye; for this reason, the green growth itself focuses on cleaner energy production with less carbon emission rates. In compliance with the UNFCCC Conference of Parties structure, Türkiye committed to decreasing GHG emissions by up to 21% from the usual rate by 2030; on the other hand, Türkiye's expanding economy and rate of development limits to achieve to reduce emissions rates from current levels, inculcate the country to prefer for as usual baseline, authorizing some emissions growth from current rates (Türkiye 2021 Energy Policy Review, 2021). After Türkiye's ratification of the Paris Climate Agreement, it may be expected to accelerate reducing gas emissions better than before. However, it may vary depending on how much green economy and sustainable development elements cover energy policies and how much local autonomous structures are involved in these policies.

According to SEFIA's review report, following the ratification of the Paris Climate Agreement, Türkiye has set its net-zero target as 2053, which refers to the equalization of the volume of GHG emitted to the atmosphere with the capacity of natural sinks and technological sinks with carbon capture potential. Any policy recommendation to achieve the 2053 net-zero target, while it may suggest that no more coal-fired power plants are built, will not be sufficient to achieve this target, and existing coal capacity will have to be phased out gradually until 2053 (Sürdürülebilir Finansal Araştırmalar Derneği, 2022). As a party to this agreement, Türkiye, in line with its net-zero targets, should abandon coal-fired power generation by 2053. Since it will be possible to close one power plant and invest in another due to the security of supply that needs to be maintained in energy, it is stated that renewable energy investments will both have a higher renewable energy potential compared to European countries and will be a solution to the current account deficit problem caused by energy imports.

Figure 2.7. Mediterranean Region's contributors for ecological footprint, ecological deficit and biocapacity. (Percental) Source: (Mediterranean Ecological Footprints Trends, 2012)



The carbon footprint, which is mainly included in the management strategies of municipalities in Türkiye, takes place as an indicator of global change depending on the amount of carbon dioxide (CO₂) and other GHG in this footprint, which is among the environmental footprints of cities. According to the Safe and Fair Places approach, it was emphasized that the sustainability goals of the countries could not be realized by looking at the social and biophysical variables, among which carbon emission and ecological footprint, increasing the ecological limits of the societies and confronting the limited resource management (Kadıköy Akademi, 2021). Accordingly, it can be said that ecological footprint will assume even more importance in the future for societies that produce a sustainable economy and policies related to it, especially in the context of cities. Although it is in a different category according to the ecological footprint, we see that the concept of carbon footprint is more frequently included in the economic policies of municipalities and other management actors. With the sustainability and ecological concerns in the background of the carbon footprint, sustainability can be expressed as the search for a balance between economic progress and the Earth's ecological capacity (Mirici & Berberoğlu, 2022).

In terms of energy supply and demand, it is seen that Türkiye's green economy policy is not entirely dependent on the use of supply-dependent fossil resources, but also takes into account the life cycle related to carbon emissions. Even if it is considered that as the share of the energy sector is quite high in reducing greenhouse gas emissions in the process that started with the signing of the Paris Climate Agreement, it is foreseen that the 2053 net-zero targets will accelerate the exit from coal by evaluating the ecological footprint.

2.2 - GREEN ECONOMY AND GREEN JOBS IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT AND CITIES

Urban spaces have adopted innovative approaches with the participation of cities in economic competition in the process of globalization, based on the sustainability of cities, economic development, social development, and environmental protection, and the recognition of relations depending on the partnerships of public, private and NGOs from local to international level in decision-making processes (Kocabaş, 2012). In the city example, we can say that green sustainability has created a competitive economic environment through the cooperation of the decision-maker and action-maker actors of the cities, which are at the center of local governance mechanisms. Demonstrating this sustainability by cities with human-based policies and local governments taking steps to support this will make Türkiye a part of the green city paradigm.

It is interpreted the green economy approach as an economical alternative and stance against the deepening ecological crisis and sees its paradigm as creating and enriching an area for both protecting and maintaining biodiversity by aiming to regulate the destructive intervention of human activities on nature and natural resources, and intervene when necessary (Tiryakioğlu, 2021). The emphasis on the ecological crisis is essential here. In the UNEP, the interpretation of environmental risks and ecological problems within sustainable development, the green economy is conceptually mentioned as GHG emission reduction, resource efficiency, and social development. Offering a number of quantifications, projections and forecasts for *green jobs* around the world, this report undoubtedly reveals some data gaps; states that governments should create categories related to statistical reporting that know green employment in both new and existing sectors and helps implementation (UNEP, 2008). The most important mission in the transition to a green economy, which establishes a remarkable connection between economic growth and environmental sustainability; progress in environmental quality and social inclusion, along with investment increases and the economic growth process; it has

also been stated that the green economy paradigm is not seen as an application that will replace the understanding of sustainable development (Özçağ & Hotunluoğlu, 2015). The concepts of sustainable development and green economy are not competing for concepts that can be substituted for each other. However, the green economy complements a sustainable life and growth-development processes both politically and economically, socially and ecologically (Yalçın, 2016).

When evaluated together with the concepts of social inclusion and green jobs, urbanization, which is among the topics of the green economy, has intersections with the elements that ensure the sustainability of cities. Green jobs, which have become a tool in the transition to a green economy, create new employment areas with regulations made in green-based sectors and show their presence in carbon technologies, wind energy, and environment-based eco-technological fields. In these sectors, employment areas can be counted as occupational groups that work in environmental and biological system engineering, ecological architects, organic agriculture, environmental lawyers, and trainers and have emerged depending on the green economy (Görmüş, 2019). Green jobs, which can be considered the backbone of the green economy, can also transform traditional jobs when viewed as a workforce, so it is possible to talk about a circular employment network.

For instance, since it is possible for a profession in the energy sector to be affected by the climate and environmental crisis, a structural transformation in this transition will, directly and indirectly, affect employment. Therefore, it is possible to mention about competition in the international context, as employment impacts local and national economies in the context of sustainable development. It can be said that these countries, which have already made sustainable development strategies the main motivation in this field, with some measures taken in the light of the 2013 European Commission decisions, especially in EU countries, accelerate green competition within the framework of public policies and environmental economies. It is stated that the green economy is the whole of clean quality activities that support a recycling system that will not harm the balance of the environment

and nature. In contrast, green jobs based on environmental factors are the whole of jobs that are created, reinterpreted, and substituted for a greener economy (European Commission, 2013) From this point of view, green jobs also mean jobs with a regulatory mission to provide sustainable employment in the transition to the final green order desired to be achieved.

Green New Deal, which became popular in the world with the global crisis after 2008, has been seen as a way to get rid of economic and ecological crises in the process from the economic depression that emerged at the beginning of the 20th century to the present, by addressing the fundamental pillars of sustainability, economic, social and ecological sustainability. Undoubtedly, the global business world and governments, critical actors in economic policies and financial markets, should adopt a radical approach to today's increasingly complex economic, social and ecological problems. From the perspective of green employment policies, it is possible to say that the reformist perspective is the dominant paradigm, while it is assumed that a radical solution will bring more permanent results. While the business world, which wants to return to the old order, continues to struggle to benefit from public resources, it demands from the international system and governments to make realistic arrangements that can remedy the ecological, economic and social triple crisis, and to transform the carbon-based economy into a renewable energy-based structure with employment-friendly green investments. (Aşıcı, 2012).

Although the development of green jobs varies according to the local factors of the countries, it is not possible to draw an entirely rosy picture when it is considered terms of Türkiye and the surrounding countries. In this respect, the “*Can Environmental Agreements Represent an Opportunity for Green Jobs? In Evidence from two Italian Experiences*”, the obstacles to the development of green jobs in economies were mentioned and divided into titles: Institutional bureaucracy, uncertainty in international markets, lack of monitoring systems for environmental contracts and scarcity of infrastructure investments (Yılmaz, 2022).It triggers different elements in the green labor market, which is formed by the increase in the

green economy in the country's policies, thus causing a transformation, thus increasing the green jobs due to the existing sectors becoming more sensitive to the environment, creating green jobs in other related sectors and contributing to economic development.

2.3. GREEN ECONOMY PARADIGMS ON THE BASIS OF TRANSPORTATION AND URBAN PLANNING OF URBAN VILLAGES

Based on carbon footprint, it can be said that the transportation types in metropolitan cities such as Istanbul and Izmir diversified in intertwined ways. With the increase in rail transportation lines such as Marmaray, it can be said that it provides mobilization as it increases the connections in city planning by sea and land. According to the results of the research conducted in Istanbul, it is revealed that the carbon footprint values at different levels of transportation type preferences of the metropolitan residents who shuttle between home and work are at different levels, and which combinations have high and which low carbon footprints in scenarios where different transportation modes are used together at different rates. For instance, the carbon emissions from only home-work trips in Istanbul cover 8 percent of the total transportation-related emissions in the country, and the most important component that reveals this result is the use of private cars (Doğançayır, 2022).

Local governments and municipalities can be a way for ecological-based sustainability to accelerating the ecological transformation of resources with many exemplary models to be designed for cities. Urban villages, which are presented as an exemplary model of sustainable economic development, are used to express compact, mixed-use neighborhoods with different transportation options (Litman, 2022). Urban villages, which cover a more limited area in hectares, will eliminate problems such as market areas, business lines, and traffic; thus, a local economic network will also be provided. While these models set an example based on districts

in metropolitan cities such as Istanbul and Ankara, establishing systems that will cover all cities may not seem sustainable at the first stage. However, examining the examples in this field and determining its strategies will be beneficial in spreading the green economy of the cities to long-term plans.

The traffic and transportation model mentioned in the structuring of urban villages also plays an essential role in the sustainability of cities. Based on cities in Türkiye, it is seen that good public transportation vehicles cannot be provided due to the excess use of private vehicles, the limited use of rail and sea transportation, and the concentration of the population in certain areas in terms of land transportation, especially in metropolitan cities. One of the biggest goals of the sustainable transportation system is to reduce the number of motor vehicles in traffic and travel time; Thus, on the one hand, traffic jams are prevented, on the other hand, the movement of pedestrians in the city is facilitated by increasing the areas free from vehicles (Akbulut, 2016). Depending on the increasing demands, urban transportation can attain a more sustainable form with planning strategies and technical studies in areas to be determined as logistics centers. It can be said that urban villages also constitute a model for the green-based problems discussed today, together with the sustainability of transportation as a holistic system.

Urban villages or village towns offer a compact model. The idea of a compact economy proposed by economic sustainability based on the local economy has been revived with varied activities and more local employment. It is based on the assumption that the village economy is a model (Brindley, 2003). Although it is seen that today's cities do not have urban planning models that will enable this development, depending on the ideal of sustainable urban development, it is seen that there are remarkable problems regarding the applicability of the compaction process in big cities (Tosun, 2013). Unlike big cities, medium-sized cities can turn into places where strategies can be carried out jointly to make urban development sustainable. In this way, it is possible to support life in medium-sized cities and increase the quality of life (Şolt, 2019). We can say that sustainability strategies in big cities should differ from medium and small-scale cities in this sense. It is

possible to say that the expansionist city model of large-scale cities overlaps more with the compact model. It is possible to say that large cities' living, business, and entertainment areas are separated from each other when environmental and economic problems are taken into account compared to medium and small-scale cities. This physical separation also creates transportation-based problems, so it is seen that the distances between the areas to each other reduce the urban mobility according to the sustainable compact model.

Although we talk about the advantages of medium and small-sized cities, plans for the sustainability of cities are also being developed for large cities. It evaluates the city's sustainability socially, environmentally, and economically within the EU's SUMP (Sustainable Urban Mobility Plan) of the Izmir Metropolitan Municipality and the scope of Izmir's Transportation Vision. (Sürdürülebilir Kentsel Hareketlilik Planı – SUMP İzmir, 2021). This plan, which aims to reduce the use of private vehicles with the transportation policies referenced in the compact city model, increase the bicycle-pedestrian access, and establish an environmentally friendly and sustainable transportation model instead of urban transportation policies based on fossil fuels, sets an example in terms of its potential to be a reference for other cities in Türkiye. Another report published in the same vein was prepared for IMM. Although it has features parallel to the report published for Izmir in terms of objectives and principles (such as the urban economy, traffic problem, transportation opportunities, air-noise pollution, greenhouse gas, and regulation of energy consumption), it has a representative power that we have not seen before in the sustainable development of cities under the title of social inclusion. Low groups were mentioned; Among these groups, some groups can be seen as disadvantaged in the urban economy of the society, such as the disabled, refugees, asylum seekers, ethnic minorities, and LGBTI+ individuals. (İstanbul Sürdürülebilir Kentsel Hareketlilik Planı (SKHP), 2022).

In terms of urban and sustainability, IMM also organized the "Kadıköy International Sustainable Cities Summit" in March 2022 with Local Governments for Sustainability (ICLEI) and Kadıköy Municipality and the International Union

of Sustainable Cities, where green city investment finance, combating the climate crisis, circular living and international initiatives were discussed. In his speech, Ekrem İmamoğlu said, *"We are in a period of serious risk depending on the climate. If we do not act cautiously, the future of the world is really in great trouble. Especially scientists share with us that if we do not limit the temperature increases in the world to 1.5-2 degrees, very big disasters are waiting at the door. In the scientific researches conducted today, they state that the world has reached a very risky point and has reached an alarm level. They also underline that if global warming exceeds 2 degrees, an irreversible process will begin. Considering that a good move made in Istanbul will benefit Mannheim and a good project made in Mannheim will benefit Istanbul, we are obliged to show the ability to look at the global problem together."* (Independent Türkçe, 2022)⁵

The following articles were included in the 5-point declaration approved by the mayors who came together at the Sustainable Cities Summit in Kadıköy, Istanbul:

The first article of the declaration emphasized the critical significance of local authorities for democracy, peace, social justice, health, prosperity and sustainability. *"The climate emergency has reached breaking points, the COVID-19 pandemic has deepened social and economic inequalities. We are witnessing processes in which democratic institutions and principles are weakening. Wars and military conflicts are reaching new heights with Russia's recent invasion of Ukraine. Unfortunately, global multilateral governance is not adequately responding to any of these vital challenges. Given that the majority of the global population lives in cities, we are committed to empowering, empowering, linking and engaging local and regional governments so that the vision of "multilevel*

⁵ The detail analysis on International Sustainable Cities Summit, see: "Kadıköy Uluslararası Sürdürülebilir Kentler Zirvesi'nden 5 mesaj" (The five messages from Kadıköy International Sustainable Cities Summit: <https://www.indyturk.com/node/487061/haber/kad%C4%B1k%C3%B6y-uluslararası%C4%B1-s%C3%BCrd%C3%BCr%C3%BClebilir-kentler-zirvesi%E2%80%99nden-5-mesaj-hi%C3%A7bir-%C5%9Fehir>)

action" involving cooperation between governments at all levels can serve as a beacon of hope." (Independent Türkçe, 2022)

"No city, mayor or country can face global challenges alone," the third article of the declaration reads, reminding that through ICLEI's networks and partnerships, Turkish municipalities can more easily participate in European and global initiatives:

Priority initiatives at the European scale include the Mayors' Climate Charter, the European Green City Agreement, the European Declaration on Circular Cities, the European Local Green Agreements. Priority initiatives at the United Nations scale include the Race-To-Zero and Race-To-Resilience campaigns led by the UN Climate Change Secretariat towards the Paris Climate Agreement's goals of zero net carbon and resilient cities by 2050, the Making Cities Resilient 2030 campaign envisaging disaster-resilient cities, and the Sustainable Development Goals Local Voluntary Monitoring processes. (Independent Türkçe, 2022)

If we are talking about a sustainable local government and economy, it will not be enough to talk only about the bio-physical problems of cities. Today, the issue of green jobs is also included in the arguments based on political economy, and certain groups of the society related to this argument can become targets, especially in times of crisis (*ecological and economic*). As Tiryakioğlu mentioned (2021), it can be said that groups such as women, youth, low-paid and low-skilled workers, immigrants, and refugees may be more exposed to crisis-based job losses if a green economic policy is not planned and implemented. In this respect, ensuring inclusive employment makes green jobs a policy determinant in the sustainability of cities. Therefore, if these action plans created in Istanbul and Izmir municipalities are also created for medium and small-sized cities shortly, the necessity for a green economy and ecological sustainability to have a more decentralized local economy mechanism, thanks to the city network, emerges. Sustainable urban action plans such as the strengthening of the cities in the *2004 Aalborg Charter through* local governments, the creation of local economic policies on a solid basis with local government authorities, the participation of the citizens as critical actors, the

participation of the society and the activation of urban management tools have been developed in this context. (Aalborg Şartı: Sürdürülebilir Avrupa Kentler ve Kasabalar, 2004).

In my interview with Local Monitoring Research and Practices Association (YERELİZ), their work with disadvantaged groups was mentioned, and they had ideas such as making cities the focus of inclusive policies. In addition, the cooperation with NGOs and local governments based on climate justice leads to a more inclusive and real evaluation of the sustainable base of cities:

YERELİZ's main point is to support policies that can bring the city to the best place for everyone. The purpose of this is sometimes sustainable development goals, sometimes working with immigrants and women with the focus of inclusive policies, or climate-friendly policies and local climate action, but our main expertise is local governments. In other specific issues, we can summarize as we are trying to open a space for action by drawing the stakeholders' attention to the NGOs operating in related issues and their focus on local governments. In the issue of climate justice, we know that the problems we will experience, such as climate-related vulnerabilities, increases and decreases in climate disasters, will affect all vulnerable groups, women, LGBTI+ individuals and immigrants, namely those in more difficult situations, so there is a consensus on vulnerability.⁶

It has been stated that the local governments of Türkiye are not sufficient on their own in terms of implementing the energy, transportation, and housing policies that they put forward while determining the green economy of the cities and transforming the conventional municipalism and inadequate urban policies that have already continued and caused chain problems in the cities. To say that the

⁶ Interview no.5, 29.04.2022, online

primary motivation sources are local government and city awareness would be a very appropriate interpretation in terms of attracting the attention of national and international policymakers to the potential for change from the local:

There have been cases where we had to open up the issue of legislative limitations faced by local governments, especially for climate, in the context of cities. Here in Türkiye's local government system, when we look at the inventories that cause emissions in cities, we see the issues mostly related to housing, facilities and transportation, and the solution to these is not something local governments can do on their own. In IBB, which we are a party to, there are issues such as increasing solar power plants, different energy sources, establishing alternative subsidiaries for the sale of other municipalities that do business in this field, opening areas for the sale of energy, but we see that Türkiye has not given up on coal and natural gas investments will continue.⁷

It is noteworthy in that it shows us that a wide-ranging transformation, especially the elements that can be a voice at the local level (such as NGOs, academia, trade unions, and financial institutions), can create a potential from below with the action plan made in partnership with IMM in Istanbul. Green economy policies, which are involved in the climate struggle, should have a theoretical perspective on the projection of Türkiye in the coming decades:

Our partnership in IBB progresses in several axes. The evolution of the Climate Change Directorate, which was established as a priority, into the Department is standing before us with the new decision. The "Climate Change Action Plan" has just been revised. The previous action plan

⁷ Interview no.5, 29.04.2022, online

*predicted reduction from increase, but we have set the target of being carbon neutral and resilient for 2050 and we have prepared the roadmap for this. At the same time, we have a strategy document that we call the "Vision 2050 Strategy Document", which includes projections on many different bases for the year 2050, focusing on growth, development and inclusion in 8 main axes, in which the climate is also a part. This is a process that works together with many other plans such as the Climate Change Action Plan, the Sustainable Urban Mobility Plan, which we call the main climate vision. For this, the climate platform was established. A civil structure was established both to monitor this process and to develop it with suggestions. Efforts are being made to provide a structure that includes mostly activists, NGO representatives, academia and representatives from different sectors, trade unions and vulnerable groups. There are five main working groups. Climate justice adaptation, emission reduction, education awareness and participation, green transformation and financing and monitoring group. Especially the green transformation and financing group draws attention because they discuss issues such as the preparations of sectors for green transformation and the impact of Istanbul's economy.*⁸

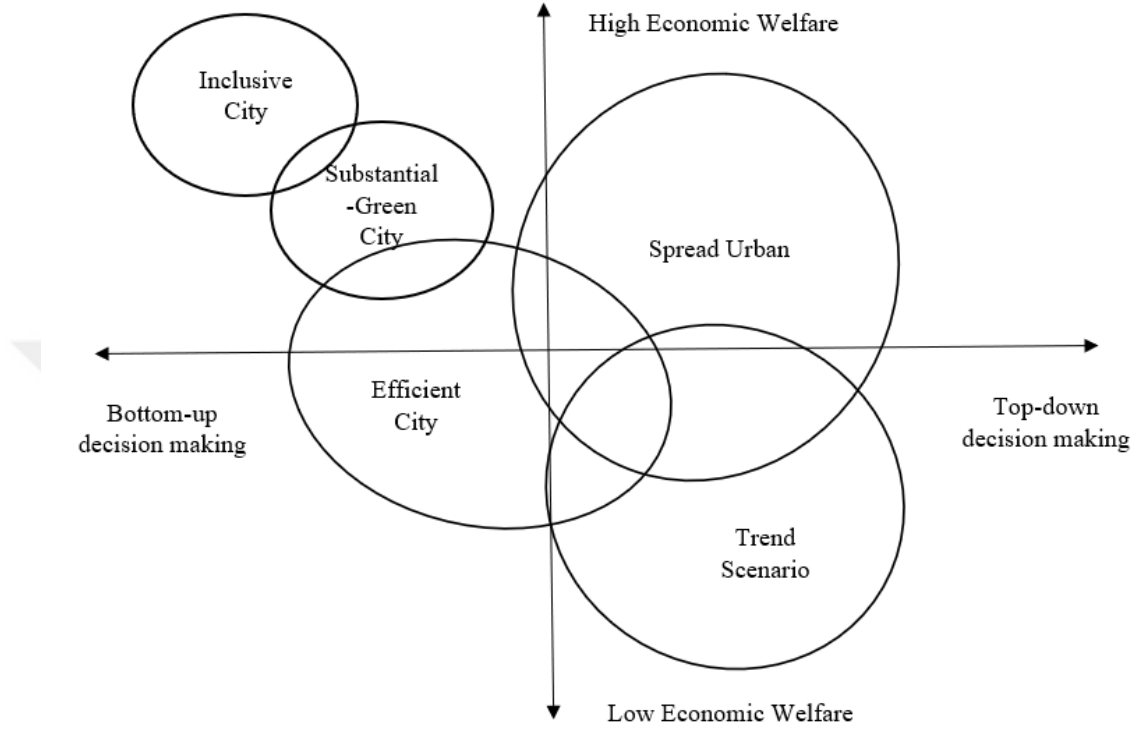
The difficulty of transforming large cities by compact city models has been mentioned, and when examined in terms of medium and small-sized cities in Türkiye, it can be said that models that will provide sustainable urban development and support the mobilization of transportation are more likely. Considering that sustainable urban development networks are the implementers in Türkiye, it will be beneficial shortly in terms of firstly identifying the obstacles created by large-scale cities and then determining action plans to solve them:

⁸ Interview no.5, 29.04.2022, online

When we look at the issue of compact cities (urban villages), it can be said that establishing such structures in big cities like Istanbul will do more harm than good. Systems such as "15-minute cities", in which we can create compact structures without dispersing the center too much, are good in ideas, but our main goal is to think in detail how the concepts such as 15-minute city can be applied for Istanbul (as well as for big cities in Türkiye), what are the benefits and harms. We can transform public transportation and transportation in general, but I find it more appropriate to focus on specific issues such as can we transform buildings, can we transform our roads and the materials we use. If we are talking about a more compact building model with them, it is appropriate, but we do not live in such an ideal world yet. The issue of circular cities is also fundamental in this respect. We should evaluate to what extent we can lead the chains we have established to circularity. Along with the economy, we need to be thinking about the approaches that we can connect our strategies that we can put into the circularity.⁹

⁹ Interview no.5, 29.04.2022, online

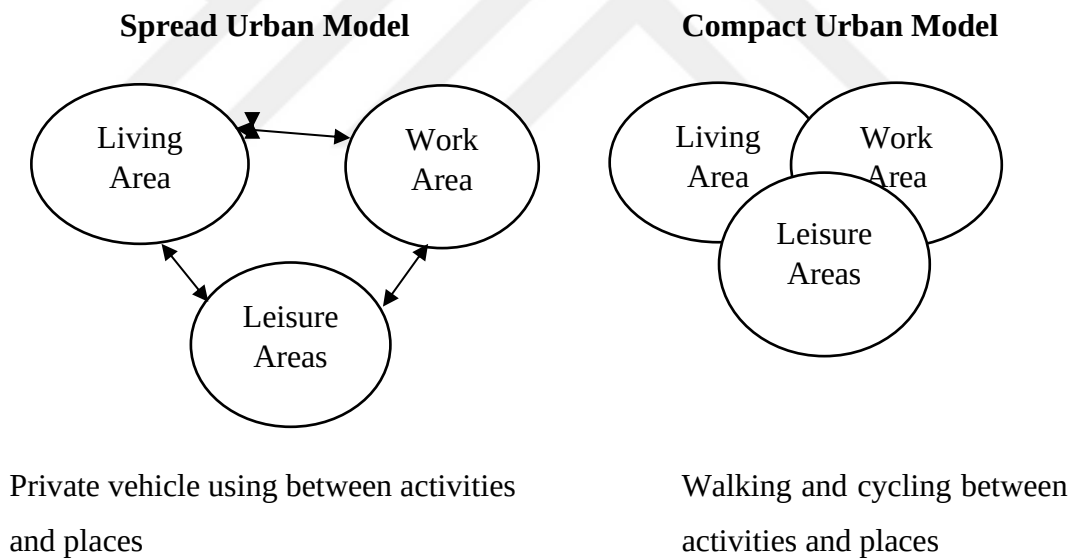
Figure 2.10: Fundamental External Factors and Istanbul SUMP Scenarios Adapted from (İstanbul Sürdürülebilir Kentsel Hareketlilik Planı (SKHP), 2022)



When the graphic in SUMP is examined, we see that more than one city model has emerged with intersection clusters in line with sustainable cities' economic welfare levels and decision-making mechanisms. First, the bottom-up decision-making mechanisms represent a more local and decentralized structure. However, we can say that the inclusive city and resilient-green city models in the upper left area of the scenario can develop in places where economic welfare is high. Therefore, when the green city model and social inclusion are interpreted by looking at the examples of the sustainable city model, the inclusive city scenario sets an example with the balanced regional economic development, the governance model based on small-scale production and distribution, of which local governments are supported, and a part, and the alternative and clean energy sourced energy model. (İstanbul Sürdürülebilir Kentsel Hareketlilik Planı (SKHP), 2022). This model can find meaning with examples in which the concepts of green city

and green development correspond in real terms, especially for cities in Türkiye. As can be seen in the example of Buldan, the Weaving City, it is seen that the local economy and sustainable urban norms evaluate the city at a specific point in terms of economic, social, and ecological aspects (Erdoğan & Öztürk, 2019). Balanced economic development should be ensured based on sustainable urbanization environmental principles. To ensure the welfare of cities, an approach that considers and protects environmental values with a waste-recycling cycle that has minimum air pollution and minimizes ecological footprint should be adopted (Gazibey, Keser, & Gökmen, 2014)

Figure 2.11.: Spread Urban Model and Compact Urban Model Adapted from (Tosun, 2013)



In the compact city model, a local economy model, we see that, contrary to the expansionist city model, living, workplace, and entertainment areas, which are the main areas of economic activities, are intertwined and create intersectional areas at specific points. In this way, there are minutes instead of hours among these areas, and it is stated that the citizens, who will ensure the continuation of the political

economy depending on the local economy and management of the city with a sustainable notion, can realize this more effectively in a compact model.

Another aspect of examining the compact model of urban villages in a sustainable context is to categorize its advantages and disadvantages from certain aspects and interpret it within a green economy and green sustainability. As shown in the table, the compact city model, especially with its economic and environmental dimensions, provided cost and energy reduction based on transportation and buildings and caused a decrease in infrastructure and distance-related expenses. Likewise, it offers valuable points in ecological economics, compared to the expansionist city model, with factors such as reducing toxic gas emissions, minimizing environmental damage, and ensuring biological diversity. When looking at the disadvantageous dimensions, risks such as concentration, increase in crime, noise, shortage of housing, and decrease in green areas due to these are mentioned:

Table 2.1. Advantages and Disadvantages of Compact Urban Model Adapted from (Yazar, 2006)

	Advantages	Disadvantages
Economically	• Reducing costs and energy consuming at transportation • Decreasing the cost at infrastructure and its effective presentation • Shortening of home-work daily round trips • Increasing economic efficiency by revitalizing city centers and slum areas • Reduction of using energy in the buildings	• Possible shortage of housing • Rising prices of lots based on the increased density

Socially	• Urban poors' easy access to the small and standart housings • Reduced social and spatial discrimination • Increasing social interaction between urbanites and improving sense of urban ownership • With the shortening of urban distances, the money spent by the urban poor for transportation expenses can be directed to other areas • Increasing the use of public areas	• Risk of neurologic illness • Risk of inceasing crime rate • Risk of diminishing equity through land profiteering
Environmentally	• Reducing of toxic gas emissions • Reducing of enviromental destruction as protecting open and rural areas • Protection of natural habitats and biodiversity in the immediate vicinity of the city • Effective lot using	• Risk of sun exposure and ventilation in residences due to multi-storey construction • Increasing noise pollution
Physically	• Easy access to urban services • Ease and support of providing public transportation and alternative clean transportation opportunities (pedestrian – bicycle) • Increasing accessibility to urban activities in general • Reduction of private car dependency	• Risk of reducing green and open areas in city • A crowded urban life

It is seen that energy and urban policies play a major role in the implementation of green economy. It has been concluded that Türkiye's green energy and urban policies are more regional and centralised on the energy side and more localised in urban and environmental policies, with practices and policies that are articulated not only under the heading of green economy but also with sustainable development goals. Especially in terms of energy supply, decisions have been taken in line with Türkiye's growing population and socio-economic

needs; therefore, comparisons have been made with the EU in terms of carbon emissions that change depending on energy use. As a result of these comparisons, it is predicted that Türkiye's energy policies will change as a result of international texts and sanctions. In the emission-oriented international projections covering the near future, Türkiye's position will be determined by the combination of central and local green economy policies. In urban and transport-related studies, it is seen that sustainable development is based on the cooperation of Turkish municipalities with international actors, but concepts, mostly relies on sustainable urban policies for disadvantages, low-income groups, and also immigrants that will directly affect employment and economy such as green jobs, which include renewable energy cooperatives, and prioritize reducing energy using in working and living areas, are based on green economy practices implemented by actors mentioned above.

3-THE GREEN POLITICAL ECONOMY PRACTICES OF THE LOCAL ACTORS AND GLOBAL INDEXES OF TÜRKİYE

This section, which examines the plans of green economy practices based on their relations with local actors and other organizations in Türkiye, mainly includes findings from fieldwork and interview excerpts. In addition, examining the global green economy indices on the basis of Türkiye under a separate heading has enabled the sustainable development and green economy indicators, the infrastructure of which was established in the previous chapters, to be evaluated in terms of indexes and reports.

3.1. - GREEN ECONOMICAL GLOBAL INDEXES IN THE CONTEXT OF TÜRKİYE

The Global Green Economy Index (GGEI) is an index that measures and evaluates the sustainability performances of countries according to 18 indicators, creates a score according to these variables, and ranks the countries according to these scores. According to this system, which requires the creation of environmental sustainability strategies and economic policies, scoring based on the green growth strategy was made (Dual Citizen made calculations). The first seven countries in the ranking are mainly composed of the European Union countries, the United States of America, and Canada, that is, the countries called the Western Hemisphere of the Northern Hemisphere. The other half of the ranking comprises countries with a higher population density, such as Brazil, China, and South Africa, which are considered relatively developing compared to the first half of the list or have indexed their basic economic policies to growth. Considering the position of Türkiye and the other half of the list in this index, it can be interpreted as a result

of the difference created by the fact that the green growth strategies taken as reference by Western-dominated countries are noticed and implemented earlier than other countries. Of course, we see the rankings of the G20 countries here, but in another ranking arranged according to the progress in the relevant index.

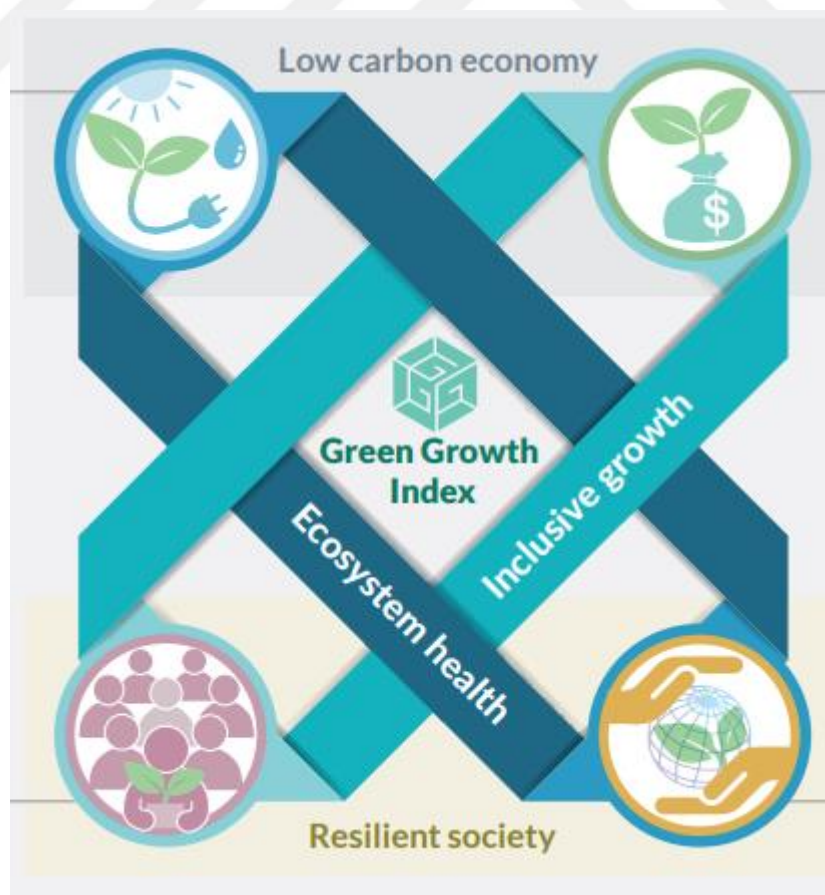
Table 3.1. Global Green Economy Index by G20 countries (GCEI) Adapted from (Global Green Economy Index™ (GGEI), 2022)

	2022 result (percentile)	2022 result (rank)	time series available
France	0,744	1	2005-2020
United Kingdom	0,704	2	2005-2020
Germany	0,674	3	2005-2020
Australia	0,673	4	2005-2020
Italy	0,669	5	2005-2020
Canada	0,580	6	2005-2020
United States	0,567	7	2005-2020
Japan	0,547	8	2005-2020
Brazil	0,542	9	2005-2020
China	0,528	10	2005-2020
South Korea (Republic of)	0,525	11	2005-2020
Mexico	0,500	12	2005-2020
Argentina	0,485	13	2005-2020
Russian Federation	0,414	14	2005-2020
Türkiye	0,399	15	2005-2020
India	0,394	16	2005-2020
South Africa	0,372	17	2005-2020
Indonesia	0,363	18	2005-2020
Saudi Arabia	0,314	19	2005-2020

The conceptual framework of green growth has a broad spectrum from the use of space to efficiency, from environmental, cultural, and social values to green economic indicators. Putting forward the arguments to suggest that these values

attributed to "global" may be questionable. Green growth reduces the damage to the environment and ensures the continuation of economic growth, which is known as the basic necessity of "green capitalism." At this point, there are also collective ideas that present a counter-argument by evaluating green growth from a capitalist perspective. Although green growth, which aims to protect biodiversity and the ecosystem by reducing pollution and GHG, and minimizing the inefficient use of natural resources and waste, can reduce the environmental damage caused by economic growth, it is stated that it is not possible to provide a fully sustainable capitalist economy.(Corporate Watch, 2018)

Figure 2.8. Conceptual Framework for the Green Growth Index Recieved from (Green Growth Index 2020, 2020)



Efficient and sustainable resource use (Top left image)	Green Economic opportunities (Top right image)
● Efficient and sustainable energy ● Efficient and sustainable water use ● Sustainable land use ● Material use efficiency	● Green investment ● Green trade ● Green employment ● Green innovation
Social Inclusion (Bottom left image)	Natural capital protection (Bottom right image)
● Access to basic services and resources ● Gender balance ● Social equity ● Social protection	● Environmental quality ● GHG emission reductions ● Biodiversity and ecosystem protection ● Cultural and social value

Ranked 18th out of 32 Asian countries in the Green Growth Index, Türkiye is in the middle of a group of countries with generally low scores (Countries in the rest of the ranking are not included as they score low in terms of socio-economic comparison). There are relatively high scores in the categories of natural capital utilization and social inclusion, and Türkiye scores relatively low in terms of green economy opportunities compared to other Asian countries. This can be attributed to the centralization of green economy policies in Türkiye and the lack of influence of civil society/local governments in Türkiye's policies today.

Table 3.2. Scores and ranks for Green Growth Index in Asian Countries (Green Growth Index 2020, 2020)

Asian Countries / Territories	Efficient and Sustainable Resource Use	Natural Capital Protection	Green Economic Opportunities	Social Inclusion	Scores	Level	Rank
Singapore	51.20	63.21	42.88	84.00	58.43	Moderate	1
Malaysia	43.54	70.29	51.03	62.45	55.88	Moderate	2
Philippines	46.48	70.62	48.34	59.96	55.54	Moderate	3
Georgia	50.00	72.46	37.19	70.17	55.45	Moderate	4
China	34.49	70.15	55.41	70.32	55.41	Moderate	5
Korea Republic	34.48	61.09	54.06	76.41	54.31	Moderate	6
Japan	41.39	73.53	33.23	83.23	53.86	Moderate	7
Sri Lanka	60.97	69.67	33.42	54.49	52.74	Moderate	8
India	34.58	63.24	40.31	48.95	45.58	Moderate	9
Azerbaijan	32.31	64.14	29.33	67.35	44.98	Moderate	10
Myanmar	42.58	66.44	30.42	45.79	44.55	Moderate	11
Thailand	40.16	79.03	17.07	71.46	44.36	Moderate	12
Cyprus	48.25	72.59	13.05	82.26	44.03	Moderate	13
Nepal	41.98	80.17	18.05	59.15	43.54	Moderate	14
Israel	25.18	55.68	27.14	82.89	42.14	Moderate	15
Indonesia	52.42	70.48	12.30	61.04	40.81	Moderate	16
Lebanon	33.60	55.91	27.99	46.07	39.45	Low	17
Turkey	40.54	54.32	17.71	60.66	39.22	Low	18

In the Environmental Performance Index (EPI), Türkiye, which is evaluated in the Eastern Europe region, has a very low ranking and score in contrast to other Eastern European countries (19th in Eastern Europe and 172nd in 180 countries). With a very low 2022 EPI score of 26.3, Türkiye has a number of key factors that reflect this poor performance: its struggle to sustain its natural resources and failures to mitigate rising greenhouse gases are noteworthy, and Türkiye is projected to rank 11th in the world in terms of emissions in 2050. Unless there is an extreme development, this increase will continue as a result of current policies. (Wolf, Emerson, Esty, Sherbinin, & Wendling, 2022) According to the index, biodiversity and habitat are not sufficiently protected in Türkiye. While Türkiye is home to many biodiversity hotspots and unique species, less than 7% of its land

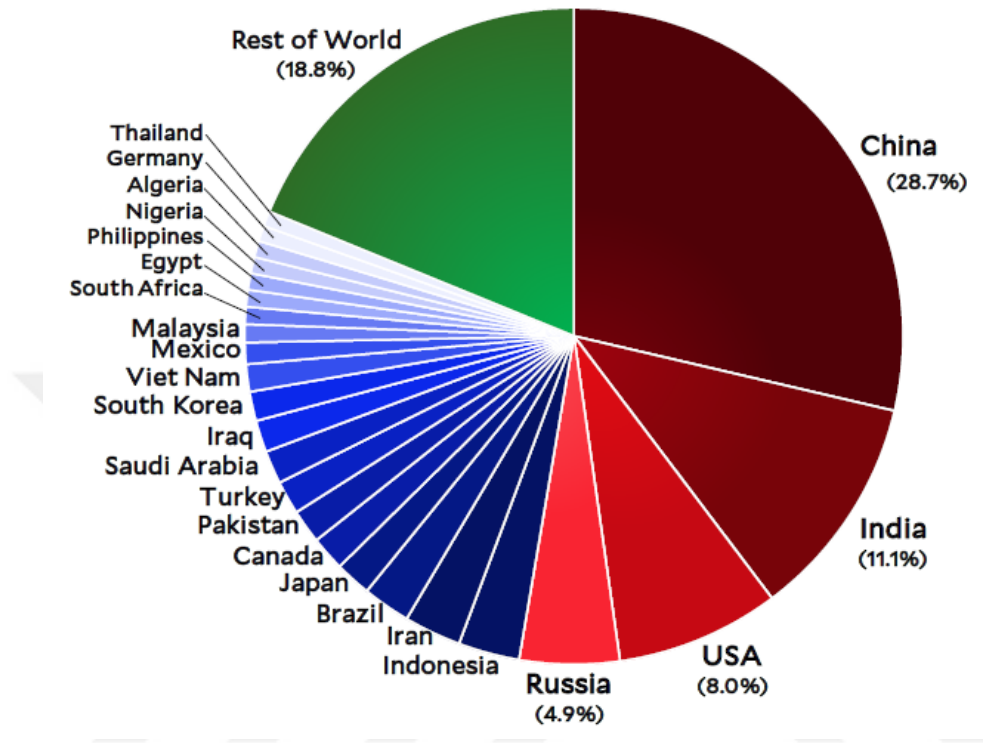
area and 2% of its marine area is covered by protected areas. (Sekercioglu, and the others, 2011) Massive infrastructure projects such as the Ilisu Dam jeopardize critical habitats for threatened species and restrict water supply in downstream countries.

Table 3.3. EPI scores and regional rankings (Wolf, Emerson, Esty, Sherbinin, & Wendling, 2022)

EASTERN EUROPE		
Country	Score	Reg. Rank
Slovenia	67.3	1
Estonia	61.4	2
Latvia	61.1	3
Croatia	60.2	4
Slovakia	60.0	5
Czech Republic	59.9	6
Cyprus	58.0	7
Greece	56.2	8
Romania	56.0	9
Lithuania	55.9	10
Hungary	55.1	11
North Macedonia	54.3	12
Bulgaria	51.9	13
Poland	50.6	14
Albania	47.1	15
Montenegro	46.9	16
Serbia	43.9	17
Bosnia and Herzegovina	39.4	18
Turkey	26.3	19

However, while countries and their relevant institutions present their projections for net-zero emissions, it is seen in the EPI that GHG emissions will be concentrated in 4 countries in 2050 below. Türkiye ranks 11th in this ranking and it is becoming more and more noticeable that the net-zero projections proposed by the municipalities and the government should be based on radical climate economic policies rather than reformist policies.

Figure 2.9. Projected residual greenhouse gas emissions by country in 2050.



The Climate Change Performance Index (CCPI) is an index published since 2005 by the European Climate Action Network and the German Organization for Development and Environment. Its objectives are to assess the performance of countries in climate protection and to put pressure on countries that are not taking measures to conserve the climate (Yılmaz, 2022). It is measured around the components of GHG emissions, renewable energy use and climate policies, and reflects the national and international performance of countries in these areas in order to accomplish the goals of the Paris Climate Agreement (Burck, Uhlich, Bals, Höhne, & Nascimento, 2022). The report also mentions Türkiye's "eventual" signing of the Paris Climate Agreement and ranks Türkiye 42nd out of 64 countries in the "low" rating classification. While GHG emissions have the highest weight among the criteria (40%), the weight of the other 3 criteria is equal to 20%. It would be possible to say that GHG emission is perhaps the crucial factor in climate policies

as it is included in the Paris Climate Agreement and other green economy indices. Although it ranks low in overall rating and GHG emissions, Türkiye's renewable energy score ranks in the top 10 among EU countries, along with Denmark, Sweden, Finland and Croatia, which together with it are the top performers in 2021, which is considered a high rating. One of the reasons for this is that the renewable energy cooperatives, which I described in the first section, are operating with the cooperation and support of municipalities and local governments. Although Türkiye's climate policy and energy use ratings are low, its renewable energy potential is what propels it up in these rankings.

Table 3.4. Renewable Energy – Rating table in CCPI (Burck, Uhlich, Bals, Höhne, & Nascimento, 2022).

Rank	Country	Score*	Overall Rating
3.	Norway	19.21	Very High
4.	Denmark	14.93	High
5.	Sweden	14.72	High
6.	Finland	14.04	High
7.	Latvia	13.79	High
8.	New Zealand	13.05	High
9.	Brazil	12.70	High
10.	Chile	12.62	High
11.	Croatia	11.32	High
12.	Turkey	11.30	High
13.	Lithuania	10.95	High
14.	Bulgaria	10.63	High
15.	Estonia	10.53	High
16.	Austria	10.17	High
17.	Indonesia	10.08	High
18.	Ireland	9.85	High
19.	Portugal	9.54	High
20.	Malta	9.38	Medium

3.2 - AN REPRESENTATIVE OF A SCIENTIFIC R&D BASED COOPERATIVE IN TÜRKİYE: “YERKÜRE: THE LOCAL STUDIES COOPERATIVE” AND FOOD SUPPLY CHAINS

In Istanbul, which is compared to a mega-village, there is a powerful interconnected food supply system, and this system has stakeholders that can directly affect the city's economy. Working on local economy and cooperatives in Türkiye, the “Yerel Araştırmalar Kooperatifi” (Yerküre Local Studies Cooperative) (YERKÜRE) revealed the situation of agricultural areas and food supply systems in Istanbul in its study. The related study also talks about the effects of these projects of Istanbul, which is the city of "mega projects" but which, as I mentioned, actually fits the definition of a mega village, on agricultural areas. It is thought that approximately 9% of Türkiye's total greenhouse gas emissions in 2019 are caused by the production and destruction of lost and wasted food (Yerküre, 2021). Considering the importance of greenhouse gas emissions in terms of a low carbon economy, the ecological problems caused by agricultural areas and food supply chains, especially considering the complexity of the supply networks of a giant-scale city like Istanbul and the magnitude of its impact (in the second part, the relationship between cities with ecology and sustainability) The benefits of these studies are emerging.

In the report made by YERKÜRE with Greenpeace, it is stated that most of the Northern Projects (the most well-known one in Kanal Istanbul) are located in the region called the ecological corridor, including food supply and the Northern forests within its borders. Therefore, these areas, which cover a significant part of the green areas of the city, will be exposed to actions that will negatively affect their ecological footprint, especially when the Kanal Istanbul project, which has been at the forefront of ecological discussions in the past decade, is taken into consideration. In addition, Istanbul occupies a large area in the supply chains of supermarkets in the food supply, which creates the transportation-based carbon emission problem. Considering that an average of 652 gr carbon emissions are

released in road transport operations, a total of approximately 100 million kilotons of carbon was emitted in 2018 for the transportation of products coming from different cities of Türkiye, only to Bayrampaşa and Ataşehir (the most prominent markets of Istanbul on both sides); This figure corresponds to the annual electricity consumption of 17,439 houses according to the US Environmental Protection Agency calculations (Yerküre, 2019).

In my interview with YERKÜRE, it is seen that they differ from the others in that they stand out as an R&D cooperative that brings together knowledge and research methods by sharing resources rather than a commercial purpose, unlike the former building cooperatives and the consumption cooperatives with a commercial enterprise mentality that became widespread after the Gezi protests:

We are a cooperative working for a world where biological and cultural diversity is protected and enriched, where all beings live fairly and are ecologically and socially sustainable. As an institutional structure and a partnership, the mechanism also has a side that expresses the sustainability of the institution, both economically and in other aspects. In some respects, there are places where we agree on the expression of the concept of sustainability. We are working on ecological agriculture and nature. Sustainability is actually at the center of the field we work in. While discussing this issue, we do not consider nature and natural resources as production inputs, neither in agriculture nor in food production. It takes place as a fundamental element that creates the relations in all these economic, political and agri-food systems.¹⁰

In the interview with SEFIA, while the greenwashing reservation is mentioned, here it is mentioned that the term green economy has a handicap such

¹⁰ Interview no.1, 19.03.2022, online.

as coloring the economy. It would not be wrong to talk about an interpretation that is subject to several limitations caused by the coloring of economic issues, and the reflection of the problems related to climate and environment from below cannot be taken into account sufficiently:

It is approached the concept of green economy with reservations. Rather than the color of the economy, it is a matter of what we understand from the economy, how we organize economic relations, how we produce, how we consume and how we divide. Therefore, the point that needs a little more attention, intervention and questioning is to see the paradigm change as a need, and that the economy itself should be at the center of criticism rather than its color. That's why we don't use these green concepts much. Undoubtedly, there are political, economic and ecological situations in which we are in the green economy, multiple crises, there are situations that require us to deal with this issue and to talk about these concepts. We work on climate change, or we focus on an approach that plans to pursue climate change by paying attention to other boundaries on the planet at the center of the work. Accordingly, circularity is an essential subject. While creating a different economic paradigm that I just mentioned, one of the main criticisms there is that this issue has been established very linearly until nowadays. We have come to this subject as a result of an approach and process in which a consumption-oriented structure was established, and the process of not considering the aftermath of the consumption of the products. That's why we try to be a little more careful about expressions that appear as "trendy" concepts. There are different focuses here, and locality is in such a position. We thought about this when we named the cooperative. We are a candidate or target to deal with international problems, but our name was shaped by thinking that we could get results with solutions that can be

produced locally and by using local knowledge. It has a side that focuses on more local work. That's why locality is an prominent emphasis.¹¹

Although it is thought that cooperatives and similar structures operate in a micro-area and are involved in activities limited to their area, YERKÜRE's views on this issue have been to evaluate the focus of the problems in an international context. It seems pretty likely that it will contribute to the creation of interaction between global and local:

Being aware of the fact that the problems are global, we think that a result can only be achieved with solutions brought from the local, at least in the short term, substantial and permanent solutions can be achieved with the initiative, participation and will of the local. (...) The concept we call food security today has a national dimension in relation to self-sufficiency. For instance, we need to think about how much we are self-sufficient in wheat, on the scale of the city and the region. The city is a crucial dimension here. There is also an approach that all these should be discussed at the urban scale. We have developed an approach to climate change from the food dimension to the safety issue, that we need to think about it at the food scale, that city and region-oriented food planning, definition of production-consumption relations, and planning at a local scale. In this respect, local institutions and administrations (although it is very major to make food and production plans on a national scale) have come to the fore with their duties and responsibilities as substantial policy makers. We tried to show that IBB and district municipalities, other local NGOs and cooperatives like us can and can take steps in this area. One of the most basic results of this is the formation of an awareness here. There are also formations that understand the existing agri-food system with a different paradigm and try to change it.

¹¹ Interview no.1, 19.03.2022, online.

Municipalities have started to work much more actively in this area. They call it a return to the green economy or the fight against climate change. There are responsibilities and duties that we can attribute to different areas such as having a provincial food plan, implementing plans and policies regarding the actions to be taken in time of disaster, determining who has access to food in the urban population, and promoting social aid or production for this purpose. We are trying to produce information and develop suggestions from our own field with this approach and efforts, which are about being handled and discussed from a local level.¹²

Even if it is an accepted view that most cooperatives focus their work on the local economy and continue from there, it is open to the interpretation that limiting this to purely local problems limits the cooperatives' vision and range of action. Most of interviewees think that international context mentioned by them regarding cooperation with diverse actors, which is at the center of their work in their field, should be integrated with the power of the locals. Although there are also findings of their studies on the way various actors interact on a regional scale, they have evaluated municipalities and NGOs within this scale. Expressing that the awareness created as a result of this evaluation bringing various actors together on common ground, local actors will take on a more courageous character in studies that will cover the green economy policy on the city, climate, food, and environment, and will provide the infrastructure that will make the impact they will create at the regional and national scale also make sense on the international scale.

¹² Interview no.1, 19.03.2022, online.

3.3.- POLITICAL ECONOMY OF AN ASSOCIATION CARRYING OUT GREEN ECONOMY ACTIVITIES IN TÜRKİYE: “YEŞİL DÜŞÜNCE DERNEĞİ” (YDD)

In the interview with the “Yeşil Düşünce Derneği” (Green Thought Association) (YDD), I saw that it constitutes a critical stakeholder in green economy activities in Türkiye. In addition to companies operating in the energy sector and production cooperatives, they are at least as active in intellectual production and discussion. From a participatory perspective, it would be incomplete to think that the projects and works of associations and organizations operating in the field of a green economy with local and international organizations will only have an impact on a local scale. Online panels and forums, which have increased with the COVID-19 pandemic, are an opportunity to contact more people than usual. There has been an opportunity. In this way, associations and organizations operating on green economy and sustainability in Türkiye, just like other international associations, have had ground to discuss the local and international effects of their fields of activity together:

YDD, we believe that the economic structure should evolve around the principles of sustainability. We do not have an understanding that rejects economic growth from the front like degrowth. We believe that we need to separate economic growth from pollution and GHG, and that technological innovation, public regulations and incentive mechanisms are important in this. In this sense, where we stand corresponds to a radical eco-modernist position. When we look at real politics, we see that a similar understanding is also present in the European Green Deal announced by the EU. Therefore, it can be said that we have a more realistic, evolutionist approach than a radical degrowth defense.¹³

¹³ Interview no.2, 29.03.2022, online.

It would be wrong to think that the green movement is a set of activities that only analyze and report on mainstream politics, carry out physical protests at specific periods, and provide circulation only through these elements. Looking at the representatives in the world, the green movement acts together with many libertarian and radical movements because it argues that the just transformation that the green movement will bring will be for everyone, especially the disadvantaged groups. For this reason, just like in the titles of sustainable cities and green jobs, It can be seen that women, immigrants, LGBTI+ individuals, and disabled people can make space for themselves in green associations:

As YDD, our main goal is to raise awareness; is to try to build capacity on issues such as green energy, cooperatives, agriculture, food, water, climate change and gender. (...) The green economy supports the construction of a participatory economic structure. In this context, it argues that the role of women in business life or production should reach the deserved point.¹⁴

It is seen that the institutions operating directly in this field affect increasing the share of local organizations in the green movement. Seeing that actors of various scales and categories (from energy to food, from regional to national) are a part of this movement in Türkiye is an indication that the situation is not that backward, contrary to popular belief. It is seen that the relationship between energy cooperatives and food supply in the previous titles creates cooperation on the axis of association-cooperative. In this context, it should be underlined that the actors of the green movement have strong connections to support each other and feed off each other:

¹⁴ Interview no.2, 29.03.2022, online.

In the transition to green economy, there are different planes/actors such as individual, local government, central government and international institutions, and each actor has a role to play. Campaigns organized by individuals and civil society can initiate regulations that will require behavioral changes at the local and central government level. Although their powers are increasingly limited, local governments still have a role to play in building a sustainable life. For instance, local small producer markets can support the establishment of food cooperatives/communities. As an association, we took part in the establishment and design stages of many food communities and energy cooperatives. We had project-based collaborations with various municipalities on issues such as energy cooperatives and workforce training.¹⁵

Associations and organisations engaged in green economy and sustainability in Türkiye have built spaces where they have the opportunity to discuss the local and international impacts of their fields of activity along with the growing usage of digital platforms in the last 3 years. In this way, green economy policies have gained more publicity and have become gradually visible in public and private domains. Such topics as the health crisis rendered apparent globally by the COVID-19 pandemic have brought attention to issues related to climate, environment and green economy. As discussed above, the green movements struggling on these topics focus on the common rights of living spaces and individuals by advocating for fair transformation and distribution while advocating for livable cities for everyone. At the scale of Türkiye, diverse actors of the green movement and civil society organisations are promoting policies supporting and strengthening each other by emphasising their cooperation.

¹⁵ Interview no.2, 29.03.2022, online.

3.4 - A PARADIGM OF A MUNICIPALITY WHERE GREEN ECONOMY PRACTICES CAN BE SUSTAINED: ISTANBUL METROPOLITAN MUNICIPALITY

The metropolitan municipality of Istanbul is examined as a sample in order to ensure sustainable development as a local government actor and to see the spheres of influence of local governments by collaborating with international companies such as European Bank of Reconstruction and Development (EBRD), and local companies such as İSTAÇ. Ekrem İmamoğlu said: "My biggest promise since becoming the Mayor of Istanbul was a green Istanbul. In two years, we have added more than 4 million "square meters of green spaces and created related infrastructure. Istanbul has more metro lines under construction than any other city globally." (EBRD, 2021)¹⁶ He added: "We see many areas of future cooperation with the European Bank of Reconstruction and Development (EBRD), from metro construction to renewable energy generation to waste management. Istanbul has amazing potential." (EBRD, 2021) Besides, he inaugurated the "Waste Incineration and Energy Production Facility" in the Istanbul Kemerburgaz district. (Avrupa'nın En Büyük 'Atık Yakma ve Enerji Üretim Tesis'i' Hizmete Girdi, 2021) This facility has a capacity of 1 million tons of waste to burn; likewise, it can burn 15 percent of domestic waste. We can see that it will also reduce emission values, which is a prominent phenomenon in green energy parameters. However, with the decrease in fossil fuel use, it is predicted that more than 1 million tons of greenhouse gas emissions will be prevented annually. The European Commission brings about a waste reduction targeting more comprehensive prevention for waste. Additionally, they broaden the implementation of requiring extended producer responsibility programs for encouraging remarkable executions and practices in recycling waste

¹⁶ For detail analysis on EBRD Green cities plan, "Istanbul joins EBRD Green Cities urban sustainability programme, see: <https://www.ebrd.com/news/2021/istanbul-joins-ebrd-green-cities-urban-sustainability-programme.html>

(A new Circular Economy Action Plan For a cleaner and more competitive Europe, 2020). The action plan's essential objective is to reduce the total waste formation and decrease non-recycled municipal waste by 2030. To touch on the issue of municipal waste formation here, we can see that in the circular economy context, municipalities play a crucial role in critical issues of the green economy, such as emission reduction and waste management. This circular economy plan puts the European Commission's local governance mechanisms in a local and international framework to show how municipalities will cooperate in their practices.

Within the framework of IMM's Climate Change Action Plan, the carbon-neutral policy is aimed at 100 percent absolute reduction until 2050, and strategic targets that are foreseen to be realized until 2050 in line with the Istanbul Climate Vision are listed (İSO Yeşil Blog, 2021). Strategies and action plans based on employment and social justice categories have been determined for Istanbul, which is among the C40 cities. It has been mentioned that limiting global warming to below 1.5 °C, which is also stated in the Paris Agreement, will have a global impact, primarily if it is carried out based in large-scale cities. The action plan's green and fair development-based headings are solid waste management, water and wastewater management, renewable energy and energy efficiency, sustainable urban transformation, green space management, and agricultural and local farming investments. Eighteen thousand tons of domestic waste is produced annually in Istanbul, and it is aimed to increase the waste recovery rate of the city from 14% to 41% by 2050 (İstanbul İklim Değişikliği Eylem Planı, 2021). With this Waste-to-Energy Facility, progress is significantly reducing greenhouse gas emissions. IMM revised the "Istanbul Climate Vision," which was prepared in 2018, with reference to the EU-compatible National Legislation, C40 targets, and the European Green Consensus. With the "Istanbul Climate Vision and Revised Climate Action Plan", the goal of achieving zero carbon in 2050 has been set. In order to achieve this goal, the carbon emission rates that IMM should reduce from year to year are set at 52% by 2030, 89% by 2040, and 100% by 2050. Therefore, when viewed on the scale of Istanbul and other big cities, it can be predicted that carbon and GHG emission reduction projects will yield effective results in the short and medium-term.

However, in a long-term process like 2050, the results of these projects may need to progress on a sustainable basis.

In the interview with İSTAÇ A.Ş., there are some significant points to figure out their point of view and remarkable indicators of sustainable energy production and environmental regulation strategies. These strategies emphasize the sustainable environmental development at first; however, their green economy perspective comprehends a circular approach which is admitted in circular or ecocentric economy models:

Solid waste management, combating permanent organic pollution in agricultural lands, providing high standards in the air and ensuring the sustainability of macro-micro fauna living in terrestrial and aquatic environments; based on its disposal and storage. (...) We look at the concept of Green Economy through the "sustainable environment principle". We place material recovery versus commodity mining, biogas plants versus traditional hydrocarbon processes, compost technologies versus the fertilizer industry, etc. that we are positioning. While doing this, we also argue that the circular economy should start with production. We know that sustainability should be supported with a holistic approach that includes solid waste management, and we have 3 main stakeholders of sustainability; (i) Legislators (law, regulation, circular, etc.), (ii) Manufacturers (process development, product design, alternative raw materials, packaging technologies, etc.), (iii) Local Authorities (social development, awareness activities, solid waste management) we define it as separation at source, efficient collection, processing, etc.). (...) Supporting the low carbon economy, which is one of the foundations of sustainable environmental management, IBB-İSTAÇ prevents the emission of approximately seven hundred thousand vehicles into the atmosphere with its Combustion and Energy Production Facility. In addition, with the Gold Standard, sales

revenue is obtained from the carbon credit obtained from the İBB-İSTAÇ Combustion Facility. ¹⁷

When examined in terms of municipalities, we see that companies or affiliates that provide an environment and waste management are structures that provide the economic productivity of cities. Productivity here aims to create a low-carbon economy that will provide a green economy by putting sustainability and green growth into the process within the framework of material transformation, not just as an element that provides growth. While providing this, it benefits from the local organizational networks. Therefore, it should be underlined in the interview that the circular transformation in the company's field of activity sets an important example in terms of green economy practices.

Local authorities constitute the second most considerable stakeholder of the economy. Every municipality with the necessary human resources, efficient legislation and sufficient financial resources will contribute to the green economy. (...) Local authorities are the main actors in solving environmental causes. ¹⁸

Referencing the substance of solving environmental problems by local authorities shows that İSTAÇ can bring together stakeholders, specifically municipalities and local actors, and is a reference for potential collaborations for waste management-based policies to be developed accordingly. In addition, stating that the cooperation of municipalities with renewable energy and waste management subsidiaries will play a role in solving the problems coincides with the state's development planning objectives as the principal idea.

¹⁷ Interview no.4, 20.04.2022, online

¹⁸ Interview no.4, 20.04.2022, online

IMM joins EBRD Green Cities urban sustainability program. To internalize the point of joining a tight programme of what Imamoğlu mentioned, it needs to be highlighted several essential points and action plans of it. First, the Green City program defines the term of their green city interpretation because the candidates realize the aims of this program. The guide report points out the assets such as biodiversity, air, soil, water, and land, which need to be flourished after all. Before getting into the action plan, the report also defines the policy intervention of the policy and sustainability of infrastructure investments. The infrastructural mechanism should meet the green agenda of transportation, energy, and water. This is fundamental for the action plan because the elements of the city living transform and adapt themselves to the capacity of the cities. Furthermore, the program draws a comprehensive prescription to channel the City's internal economic dynamics for a sustainable model.

Starting with the preparation and organizing of the plan, the EBRD suggests working with the official parties to legitimize actions such as political commitment to greening the instruments. The City should identify a staff member whose capacity and expertise are sufficient for the support of GCAP (European Bank for Reconstruction and Development (EBRD), 2016) The group of experts who approach the action plans and the consultants simultaneously organize institutional structures. The people who gather all the sustainable and infrastructural development elements are called "stakeholders". They engage with many actors like local academics, NGOs, private sector representatives, and municipal services such as utilities of transportation, water, energy, and waste management.

The factors must be gathered together to prioritize and identify challenges as a second step. These challenges address the necessities of the cities. Moreover, a performance scale reflects the environmental performance against the global standards. They put the screening of traffic lights as reflecting the status of the City's green city process. Green symbolizes a satisfactory performance, amber symbolizes unsatisfactory performance, and red symbolizes a low performance that needs attention immediately.

In this step or phase, the action plan indicators are mainly based on the City's performance throughout the local, national, and international actors who state a comprehensive analysis. For the technical analysis, there are some necessities to be completed before the Green City (GC) baseline. These necessities are the indicators of transportation, land use, energy, and water management. Moreover, the green management of the city pressure indicators should be pushed for which challenges will be considered relevant and needs improvement. The stakeholder embraces an elaborative approach to prioritize challenges.

All the actors and representatives put effort into claiming and confirming critical challenges to determine what is more significant for the City's adjustment phase. Thus, the comprehensive baseline addresses and documents its environmental performance. Before taking concrete and fruitful steps, prioritizing the indicators in terms of a green city and a sustainable plan by analyzing them and then ensuring the distribution of local resources accordingly for effective development paves the way for the following steps to be taken. As İmamoğlu said (EBRD, 2021), there are fields to be worked on in this program; therefore, energy use, distribution, and waste management are probably the ones quite noticeable considering these problematic factors for a sustainable GC.

In the third step, the program introduces Plan GC Actions. In order to follow the long-term cycle of the program, a three-layered schedule is put forward as 1-5 years, 5-10 years, and 10-15 years. The 5-year periods here indicate how the City's action plan should be expanded in the 15 years after its creation. For example, the City (here we can take the example of Istanbul) can create an economic action plan that will reduce water pollution in the first five years. The next 5-year period (5 to 10) aims at the point that this plan will reach, where a quantitative result can be mentioned. The purpose of this planned and targeted situation is emphasized in the next 5-year plan (10 to 15). Finally, a vision with high viability will have emerged within 15 years. In this phase, the (prioritized) key challenges play a significant role in achieving long and medium-term results.

As a final step, its implementation and monitoring set a pressure mechanism to observe the journey of the GC plan. As monitoring, the system collects the data, which requires a responsive outcome to analyze all progress so far. However, the monitoring and implementation system puts the indicators of the plan to regulate and generate convenient outputs to reach a better green system.

When we look at the junction points of international and local elements, one of the elements we will undoubtedly see is the concept of green governance and its elements in the context of a sustainable economy. Suppose we define these elements in the context of a green and sustainable economy. In that case, we should not ignore that this governance mechanism, which is implemented, dissolves socio-economic mechanisms in a pot. Contrary to inorganic and egocentric socio-economic systems and actors that come together for a specific purpose and disintegrate after that purpose is completed, local elements that have adopted green governance have a structure that establishes sustainable and organic relationship networks. As a significant side of the green governance structure, convenient form and governance tool can constrain the interest of the people's way of behaving and furnish achievable thoughts to break the current analysis dilemma of sustainable growth (Lee, Xu, & Zheng, 2018).

The main research questions of my thesis, how local institutional practices and agendas/plans converge with the international political and economic strategies of the green economy in Türkiye, and in which context local institutions, including cooperatives and NGO initiatives, can impact the sustainability of the green economy, are the main topics to which this chapter seeks answers. In this context, as the main argument of my thesis points out, locally-oriented institutions and civil society organisations in Türkiye focusing on green thought are in a relation with the global level through the green practices carried out at local scales. Moreover, these relations are not only intellectual but also through green economy-centred practices that are implemented.

As emphasised in this chapter, the green economy indices in particular were used in the interviews, the relations of local authorities with the transnational context - especially global indices, climate agreements, green city action plans - have started to determine the policies they implement in urban life. As I have emphasised throughout my thesis, Izmir and Istanbul Metropolitan Municipalities are significant reference points on this subject. Through platforms such as Sustainable Urban Solidarity Networks, Metropolitan Municipalities are invited to contemplate and take action on urban problems. Practices centred on urban policies are central to green economy discussions. In this sense, local governments carry out green works, initiatives and sustainable experiences in the context of urban policies. The experiences of local organisations like Waste Environment Management are a source for the aforementioned urban problems and green practices. Hence, metropolitan municipality subsidiaries contribute to the solution of urban problems just as much as co-operatives and civil society.

CONCLUSION

In this thesis, I started with the analysis of the link between Türkiye and the green economy context and then moved on to the practical and theoretical analysis of the actors engaged in green economy and sustainable development activities at the international and local level and tried to analyse that it is difficult for these actors to act independently of each other. In this context, as I have emphasised throughout my thesis, these actors come into contact with each other from time to time and articulate with each other in terms of green economy practices. In this respect, green economy theories open up a space for themselves at the global and local level, starting from the perspective of ecological economy. In this field, we have entered a period in which ecological conceptualisation has shaped a green movement with historical references, gained momentum with the climate debates and manifested its visibility in almost every field. Despite the recent climate crisis and global calls during COVID-19 pandemic, it is observed that states and international and local actors linked to their economic policies are involved in sustainable development-based policies. In this context, local actors in Türkiye are also involved in global adaptation activities in parallel with the international environment, and a green economy perspective is emerging with practices such as carbon tax, sustainable urbanisation and renewable energy policies.

In the first part of the thesis, in the context of this conceptual framework, I discussed the theoretical concepts and political economy approaches that constitute the framework of the green economy through local actors operating in Türkiye and the international actors with which they are associated. This theoretical framework, which comprises a wide historical period and spectrum from the conceptualisation of ecological economics to the eco-modernist and orthodox neoclassical approaches of classical economics and liberal theorists, was considered together with the analysis of the concepts of sustainability and development in green economy policies and practices in Türkiye. In addition, problematics such as market failure emerging from the perspective of sustainable development, which can be defined

as the starting point of the green economy, were addressed in this context in the context of Turkish economic policies. Local organisations such as the Sustainable Development Association, Circular Economy Platform, TÜSİAD (Turkish Industrialists' and Businessmen's Association for Sustainable Development) have provided road maps that will provide a background for green economy policies on the issues of ensuring environmental sustainability, reducing greenhouse gas emissions, reducing the global temperature below 1.5 C and the possible consequences of carbon tax for Türkiye. Conceptually, in my research, I maintain that green economy can be integrated with the concepts of ecological economics, political economy, circular economy, sustainable development and industrial ecology. From this point of view, it can be argued that the local scale effects of international sustainable development practices in which green economy is used as a tool, negative concepts such as externalities and market failure, and concrete cases such as carbon tax and net-zero emissions that have been put into operation in Europe have projections in Türkiye's green economy policies.

At the intersection of fieldwork based on secondary data and theoretical research, however, the findings show that associations and co-operatives predominantly base their cooperation on these trending concepts. While a number of ongoing concepts such as greenhouse gas emissions, carbon-neutral policies, green growth, sustainability, renewable energy, green jobs, etc. provide a framework for this trend, it would be a mistake to think that their real political equivalents are completely inadequate. In the second part, the subject of Türkiye's energy share and energy transition has facilitated this set of concepts to take steps that may be seen as radical in some circles in Türkiye's mainstream real economic policy. Global adjustment has also revealed the critical dimension of the issues by involving Türkiye's official authorities in international texts covering energy, environment and climate policies through international circles and, of course, local/autonomous actors. I have analysed the extent to which the use of fossil fuels, which has been frequently discussed in recent years, and the factors that constitute energy supply and demand, energy imports and exports in Türkiye are impacted by renewable energy policies. The main reference point of this analysis is the effects

of energy supply, which constitutes the most prominent denominator of the decarbonisation and emission reduction policy focused by the green economy, on green growth and its place in energy and urban policies. The report of SEFIA, which was interviewed, is also included here, and a 30-year projection of fossil fuel energy use and greenhouse gas emissions, together with the level of involvement of imports and exports, depending on Türkiye's energy policies, is interpreted.

It is concluded that Türkiye's green energy and urban policies are more regional and centralised on the energy side and more localised in urban and environmental policies, and that practices and policies are articulated not only under the heading of green economy but also with sustainable development goals. Decisions have been taken in line with Türkiye's growing population and socio-economic needs, especially in terms of energy supply, and comparisons have been made with the EU in terms of carbon emissions that change depending on energy use. The combination of central and local green economy policies will determine Türkiye's position in emission-oriented international projections. In urban and transport related studies, it is seen that sustainable development is based on the cooperation of municipalities in Türkiye with international actors, but the concepts are mostly based on sustainable urban policies for the disadvantaged, low-income groups and immigrants, and green economy practices that will directly affect employment and economy, such as green jobs, including renewable energy cooperatives, prioritising the reduction of energy use in working and living spaces, and implemented by the aforementioned actors. These analyses are supported by the fieldwork of the thesis. Izmir and Istanbul sustainable urban mobility plan and the issues mentioned in the Sustainable Cities Summit, mainly the impact of civil society on zero carbon and monitoring the obligations of the Paris Agreement were emphasised. YERELİZ established a sustainable cities network and reinforced the climate and city emphasis of local governments. Once again, it is one of the noteworthy findings that they plan to contribute to the economy of the city with their future visions, climate action and city plans that come to the forefront on the YERELİZ example. Local government actors and local civil society organisations act as bridges in creating links between green economy and daily life.

The third and final chapter of my thesis focuses on the results of the local actors, global indices and reports analysed in the first two chapters. The issue of local studies in Türkiye has not been completely independent from the mainstreaming of green policies, urban transformation and the interpretation of employment through sustainable development. The results of the Green Growth Index, Environmental Performance Index, The Climate Change Performance Index global green economy indices in the context of Türkiye have been analysed in the context of the Paris Agreement, and it has been concluded that Türkiye has relatively low scores and does not have sufficient cooperation with local governments in GHG emission and renewable energy policies. On the other hand, YERKÜRE, a local co-operative, does not directly interpret its work on food security and climate issues on the axis of sustainability and green economy, but looks at the impact of food waste on ecological footprint from a more universal point of view such as climate justice. On the other hand, the YDD has a more regulatory perspective and has raised awareness on the applicability of the green economy in Türkiye and the focus on environmental movements during the COVID-19 pandemic period as a result of its work with local & international organisations. This awareness has led to the establishment of parallels with the execution of green city action plans by local organisations (also municipalities). EBRD's Green City Action Plan with IBB emphasises the future projection of these awareness. Furthermore, ISTAÇ, as an affiliate, is an organisation that directly cooperates with IBB on green energy and green city issues, the findings of which were shared in the second section. In the findings of my interview, it is seen that the main determinants such as environmental sustainability principles, low carbon emission and waste management that will directly affect the green economy practices of the urban area are effective. Here, it is seen that local actors coming together as municipalities, city councils, associations, cooperatives carry out projects and studies that may have national and even international impacts such as sustainable city and transportation mobilisation, emission effects of food supply chain, climate action plan within their physical means. In addition, the activities of Istanbul and Izmir at various scales ranging from the realisation of waste

management and carbon emission reduction facilities to the preparation of green city plans with international cooperation, cities that take action within the scope of sustainability plans and see concrete results, and local studies that are the framework of the green economy policies they have signed under are given as concrete outcomes as examples of local governments. These issues have also paved the way for the actors to articulate with each other over time, depending on how much they share the problems. It is aimed to provide a framework for comprehending green economy policy practices starting from local to national and from there to global. In this direction, it is seen that the selection of the examples to be included in the field study from specific examples rather than including general actors/organisations facilitates the mutual analysis of the findings that accurately and clearly reveal the practices and applications.

This thesis aims to make a contribution to green thinking practices by addressing the practices of local governments and civil society organisations in the field of green economy. Considering the climate crisis discussed in recent years and the destruction of nature, nature-friendly green initiatives and sustainable urban practices are becoming increasingly important. I hope that this thesis can be considered as a modest contribution to green economy studies and future research.

REFERENCES

- (2020). *A new Circular Economy Action Plan For a cleaner and more competitive Europe*. Brussels: European Commision.
- Aalborg Şartı: Sürdürülebilir Avrupa Kentler ve Kasabalar*. (2004, Mayıs 27). Mimarlar Odası: Received from http://www.ceidizleme.org/ekutuphaneresim/dosya/117_1.pdf
- Affordable and clean energy*. (2020). Eurostat: Received from <https://ec.europa.eu/eurostat/web/sdi/affordable-and-clean-energy>
- Akbulut, F. (2016). Kentsel Ulaşım Hizmetlerinin Planlanması ve Yönetiminde Sürdürülebilir Politika Önerileri. *Kastamonu Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 336-355.
- Aşıcı, A. A. (2012). Sürdürülebilir Yaşam İçin Bir Dönüşüm Önerisi: Yeşil Yeni Düzen. A. A. Aşıcı, & Ü. Şahin içinde, *Yeşil Ekonomi* (s. 128). İstanbul: Yeni İnsan Yayınevi.
- Avrupa'nın En Büyük 'Atık Yakma ve Enerji Üretim Tesisleri' Hizmete Girdi*. (2021, Kasım 26). Atık Yönetimi Müdürlüğü: Received from [https://atikyonetimi.ibb.istanbul/avrupanin-en-buyuk-atik-yakma-ve-enerji-uretim-tesisi-hizmete-girdi/#:~:text=%C4%B0stanbul%20B%C3%BCy%C3%BCk%C5%9Fehir%20Belediyesi%20\(%C4%B0BB\)%2C,Ak%C5%9Fener%20ve%20%C4%B0BB%20Ba%C5%9Fkan%C4%B1%20Ekrem](https://atikyonetimi.ibb.istanbul/avrupanin-en-buyuk-atik-yakma-ve-enerji-uretim-tesisi-hizmete-girdi/#:~:text=%C4%B0stanbul%20B%C3%BCy%C3%BCk%C5%9Fehir%20Belediyesi%20(%C4%B0BB)%2C,Ak%C5%9Fener%20ve%20%C4%B0BB%20Ba%C5%9Fkan%C4%B1%20Ekrem)
- Avrupa Çevre Ajansı. (2014, Temmuz 31). Ekonomi: kaynak verimli, yeşil ve döngüsel. Avrupa Çevre Ajansı: Received from: <https://www.eea.europa.eu/tr/isaretler/isaretler-2014/makaleler/ekonomi-kaynak-verimli-yesil-ve-dongusel>
- Baumgartner, S., Dyckhoff, H., Faber, M., Proops, J., & Schiller, J. (2001). The concept of joint production and ecological economics. *Ecological Economics* 36, 365-372.
- Benli, H. (2012). Potential of renewable energy in electrical energy production and sustainable: Performance and policies. *Renewable Energy*, 33-46.
- Bozhan, Ş. (2021, Ağustos 24). Karbon Vergisi Uygulamasının Türkiye'ye Ekonomik Etkileri. EkoIQ: Received from: <https://ekoIQ.com/2021/08/karbon-vergisi-uygulamasinin-turkiyeye-ekonomik-etkileri/>
- Brand, U. (2012). Green Economy - the Next Oxymoron? *GAIA*, 28-32.

- Brindley, T. (2003). The social dimension of the urban village: A comparison of models for sustainable. *URBAN DESIGN International*, 53-65.
- Bruel, A., Kronenberg, J., Troussier, N., & Guillaume, B. (2018). Linking Industrial Ecology and Ecological Economics: A Theoretical and Empirical Foundation for the Circular Economy. *Journal of Industrial Ecology*, 1-10.
- Burck, J., Uhlich, T., Bals, C., Höhne, N., & Nascimento, L. (2022, Kasım). Climate Change Performance Index (CCPI). Germanwatch. Received from: https://ccpi.org/wp-content/uploads/CCPI-2022-Results_2021-11-10_A4-1.pdf
- Burkett, P. (2011). Ekolojik İktisatta Doğal Sermaye . P. Burkett içinde, *Marksizm ve ekolojik iktisat: kırmızı ve yeşil bir ekonomi politiğe doğru* (s. 116). İstanbul: Yordam Kitap.
- Castree, N. (2015). Capitalism and the Marxist critique of political ecology. *Faculty of Social Sciences - Papers*, 1-16.
- Cebeci, A. N. (2018). Renewable Energy Cooperatives in the World, the Natural Miracle in Türkiye on the Requirement of Solar Energy Cooperatives. *Journal of Strategic Research in Social Science*, 1-22.
- Clark, B. (2016). Marxism and the dialectics of ecology. *Montly Review*, 1-17.
- Commission, E. (2013). *REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS*. Brussels: SWD.
- Commission, E. (2020). *A new Circular Economy Action Plan For a cleaner and more competitive Europe*. Brussels.
- Corporate Watch. (2018). *A'dan Z'ye Yeşil Kapitalizm*. İstanbul: Yeni İnsan Yayınevi.
- Çetin, M., & Yılmaz, G. (2021). Pandemilerin Sürekliliği Tehlikesine Karşı Döngüsel Ekonomi İhtiyacı. *İktisat Politikası Araştırmaları Dergisi*, 225-255.
- Debor, S. (2014). The socio-economic power of renewable energy production cooperatives in Germany: Results of an empirical assessment. *Wuppertal Institute for Climate, Environment and Energy*, 1-24.
- Demirtaş, I. (2017). Green Economy Policies as an Alternative Solution of Ecological and Economical Crisis. *Alternatif Politika, İklim Değişikliği ve Enerji Özel Sayısı*, 107-132.

- Dickerson, A. (2020). Ecocentrism, economics and commensurability. *The Ecological Citizen*, 5-11.
- DiZerega, G. (1996). Towards an Ecocentric Political Economy. *Trumpeter*, 1-21.
- Doğançayır, C. M. (2022). İstanbul'da Ulaşım Çözümlerine Dönük Araştırmalar. *İstanbul Kent Araştırmaları ve Düşünce Dergisi*, 120-122.
- EBRD. (2021, May 3). *Istanbul joins EBRD Green Cities urban sustainability programme*. EBRD: Received from <https://www.ebrd.com/news/2021/istanbul-joins-ebrd-green-cities-urban-sustainability-programme.html>
- Eckersley, R. (2006). From the liberal to the green democratic state: upholding autonomy and sustainability. *Int. J. Innovation and Sustainable Development*, Vol. 1, 266-283.
- Ekmen, D. M. (2021). Ormanlaşmada Kooperatiflerin Önemi. Received from *Türk Tarım Orman*, 30-31. <http://www.turktarim.gov.tr/Haber/713/ormanlasmada-kooperatiflerin-onemi>
- Erdoğan, G., & Öztürk, B. (2019). Sustainable Urbanization: a Study of a Textile Town Buldan. *Journal of Architecture and Applications*, 51-68.
- European Bank for Reconstruction and Development (EBRD). (2016). *Green City Action Plan methodology*. EBRD.
- Fiorino, D. J. (2014). The Green Economy mythical or meaningful? *Policy Quarterly*, 26-34.
- Gazibey, Y., Keser, A., & Gökmen, Y. (2014). The Evaluation of the Cities in Türkiye According to the Dimensions of Sustainability. *Ankara Üniversitesi SBF Dergisi*, 511-544.
- Global Green Economy Index™ (GGEI)*. (2022, April 12). Dual Citizen: Received from <https://dualcitizeninc.com/global-green-economy-index/>
- Global Green Growth Institute. (2020). *Green Growth Index 2020*. Seoul
- Görmüş, A. (2019). The Reflections of Green Economy on Employment, and the Green Jobs: Findings from the British Labour Force Survey through a Gender-based Modelling. *Journal of Social Policy Conferences*, 29-66.
- Hart, S. L. (1997). *Beyond Greening: Strategies for a Sustainable World*. London: Harvard Business Review.

- Huber, J. (2000). Towards industrial ecology: sustainable development as a concept of ecological modernization. *Journal of Enviromental Policy & Planning*, 269-285.
- International Labour Office Cooperatives Unit. (2013). Providing clean energy and energy access through cooperatives. Geneva, Switzerland: International Labour Organization.
- INDEPENDENT Türkçe. (2022, Mart 20). Kadıköy Uluslararası Sürdürülebilir Kentler Zirvesi'nden 5 mesaj. INDEPENDENT Türkçe: Received from: <https://www.indyturk.com/node/487061/haber/kad%C4%B1k%C3%B6y-uluslararası%C4%B1-s%C3%BCrd%C3%BCr%C3%BClebilir-kentler-zirvesi%E2%80%99nden-5-mesaj-hi%C3%A7bir-%C5%9Fehir>
- IPCC (Hükümetlerarası İklim Değişikliği Paneli). (2021). IPCC 6.Değerlendirme Raporu: İklim Değişikliği 2021. Su Yönetimi Genel Müdürlüğü.
- IPCC. (2012). *Renewable Energy Sources and Climate Change Mitigation*. Geneva: IPCC.
- İSO Yeşil Blog. (2021, Kasım 5). İSO Yeşil Blog: Received from: <https://www.isoyesilblog.com/ibbden-istanbul-iklim-vizyonu/>
- İstanbul İklim Değişikliği Eylem Planı. (2021). İstanbul: Çevre Koruma ve Kontrol Dairesi Başkanlığı.
- İstanbul Sürdürülebilir Kentsel Hareketlilik Planı (SKHP). (2022). İstanbul: Foreign, Commonwealth & Development Office.
- İşeri, E., & Özen, C. (2012). Türkiye'de Sürdürülebilir Enerji Politikaları Kapsamında Nükleer Enerjinin Konumu. *İ.Ü. Siyasal Bilgiler Fakültesi Dergisi*, 161-180.
- Kadıköy Akademi. (2021, Aralık 3). Kadıköy Belediyesi Akademi: Received from <http://www.kadikoyakademi.org/surdurulebilirlikten-giderek-uzaklasiyoruz/>
- Kaliklov, M., Uteyev, B. Z., Khajieva, A., & Torekulova, U. A. (2020). Green Economy as a Paradigm of Sustainable Development of the Republic of Kazakhstan. *Journal of Environmental Accounting and Management*, 281-292.
- Kanlı, D. D., & Kaplan, B. (2018). A Model Suggestion for Efficient Use of Renewable Energy Sources: Urban Energy Cooperatives. *Research Journal of Politics, Economics and Management*, 31-42.

- Kissinger, M., Rees, W. E., & Timmer, V. (2011). Interregional sustainability: governance and policy in an ecologically interdependent world. *Enviromental Science & Policy*, 965-976.
- Kocabaş, A. (2012, Nisan 05-07). Yeşil Sürdürülebilir Kentsel Dönüşüm: Kavramsal Çerçeve ve Uygulama Araçları. *Dçnüşüm Yaşama ve Mekana Etkileri*, s. 91-107.
- Koç, E. (2021, June 1). Circular Economy Concept and Its Interpretation Process in Türkiye. Ankara, Türkiye: GTE.
- KPMG; SKD Türkiye. (2022). Preliminary Research On Circularity Potential Of Five Sectors In Türkiye. Agence Française de Developpement.
- Kronenberg, J. (2006). Industrial ecology and ecological economics. *Progress in Industrial Ecology – An International Journal*, 95-113.
- Kuşat, N. (2013). Green Economy for Green Sustainability: Advantages and Disadvantages - Türkiye Review. *Journal of Yasar University*, 4896-4916.
- Lee, W., Xu, J., & Zheng, M. (2018). Green Governance: New Perspective from Open Innovation. *Sustainability*, 1-19.
- Litman, T. (2022, Ocak 25). *Planetizen*. Planetizen: Received from <https://www.planetizen.com/blogs/115912-urban-villages-key-sustainable-community-economic-development>
- Meadows, D. H. (1972). *Limits to Growth*. New York: Universe Books.
- 669 (2012). Geneva: Global Footprint Network.
- Mızık, E. T., & Avdan, Z. Y. (2020). Sürdürülebilirliğin Temel Taşı: Ekolojik Ayak İzi. *Doğal Afetler ve Çevre Dergisi*, 451-467.
- Mirici, M. E., & Berberoğlu, S. (2022). Türkiye Perspektifinde Yeşil Mutabakat ve Karbon Ayak İzi: Tehdit Mi? *Doğal Afetler ve Çevre Dergisi*, 156-164.
- Mulder, P., & Bergh, J. C. (2001). Evolutionary Economic Theories of Sustainable Development. *Growth and Change*, 110-134.
- Munda, G. (1997). Enviromental Economics, Ecological Economis and the Concept of Sustainable Development. *Enviromental Values* 6, 213-233.
- OECD. (2019). *OECD Environmental Performance Reviews: Türkiye*. OECD.
- Önder, H. (2018). Sürdürülebilir Kalkınma Anlayışında Yeni Bir Kavram: Döngüsel Ekonomi. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, 196-204.

- Özçağ, M., & Hotunluoğlu, H. (2015). Kalkınma Anlayışında Yeni Bir Boyut: Yeşil Ekonomi. *Celal Bayar Üniversitesi Sosyal Bilimler Dergisi*, 304-324.
- Özen, A., Şaşmaz, M. Ü., & Bahtiyar, E. (2013). A Renewable Energy Source in Terms of Green Economy in Türkiye: Wind Energy. *KMÜ Sosyal ve Ekonomik Araştırmalar Dergisi*, 85-93.
- Özgül, S., Koçar, G., & Eryaşar, A. (2020). The progress, challenges, and opportunities of renewable energy cooperatives in Türkiye. *Energy for Sustainable Development* 59, 107-119.
- Özsoy, C. E. (2015). Low-Carbon Economy and Carbon Footprint of Türkiye. *HAK-İŞ Uluslararası Emek ve Toplum Dergisi*, 199-215.
- Pearce, D., Markandya, A., & Barbier, E. B. (1989). Blueprint for a green economy. London: Earthscan.
- Pearce, D. (1992). Green Economics. *Environmental Values*, 3-13.
- Andrew, B. (2008). MARKET FAILURE, GOVERNMENT FAILURE AND EXTERNALITIES IN CLIMATE CHANGE MITIGATION: THE CASE FOR A CARBON TAX. *Public Administration and Development*, 393-401.
- Ryszawska, B. (2015). Green E WBCSD conomy Indicators. *TOWARDS A GREEN ECONOMY: From ideas to practice* (p. 31-52). Łódź: Łódź University Press.
- Sarıtaş, H., Genç, A., & Avcı, T. (2018). Relationship Between Energy Import, Current Account Deficit and Growth in Türkiye: Var and Granger Causality Analysis. *The International Journal of Economic and Social Research*, 181-200.
- Sekercioglu, Ç. H., Anderson, S., Akçay, E., Bilgin, R., Can, Ö. E., Semiz, G., . . . Dalfes, N. H. (2011). Türkiye's globally important biodiversity in crisis. *Biological Conservation*, 2752-2769.
- SKD Türkiye. (2016). 100 Maddede Sürdürülebilirlik Rehberi.
- Sürdürülebilir Finansal Araştırmalar Derneği. (2022). 2053 Net-Sıfır Emisyon Hedefi Yolunda Emekli Edilecek Kömürlü Termik Santraller. Ankara: SEFiA.
- Szjya, P. (2016). The Role of the State in Creating Green Economy. *Quarterly Journal*, 207-222.

- Sertyeşilışık, B., & Sertyeşilışık, E. (2019). Politik Ekonomi ve Sürdürülebilir Kentleşme İlişkisi Üzerine Bir İnceleme. *Aksaray Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 31-36.
- Sönmezoğlu, F. (2012). *Uluslararası Politika ve Dış Politika Analizi*. İstanbul: Der Yayınları.
- Strateji ve Bütçe Başkanlığı. (2019). *On Birinci Kalkınma Planı (2019-2023)*.
- Sürdürülebilir Kentsel Hareketlilik Planı – SUMP (2021). İzmir: SUMP İzmir.
- Sürdürülebilir Finansal Araştırmalar Derneği. (2022). *2053 Net-Sıfır Emisyon Hedefi Yolunda Emekli Edilecek Kömürlü Termik Santraller*. Ankara: SEFiA.
- Şahinöz, A. (2019). Sürdürüleemeyen "Sürdürülebilir Kalkınma". *Ufuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi Yıl:8 Sayı:15*, 77-101.
- Şensöz, R. (2019). Yenilenebilir Enerji Kooperatifçiliği Ve Etkileri. *İklim Değişikliği ve Çevre*, 10-22.
- Şolt, H. B. (2019). Orta Ölçekli Kentler ve Sürdürülebilir Kentsel Gelişme. *Eurasian Journal of Researches in Social and Economics (EJRSE)*, 82-90.
- Tarhan, M. D. (2015). Renewable Energy Cooperatives: A Review of Demonstrated Impacts and Limitations. *Journal of Entrepreneurial and Organizational Diversity*, 104-120.
- The European Green Deal (2019).. Brussels: European Commission.
- Tiryakioğlu, M. (2021). The Political Economy of Green Jobs in Türkiye. *Journal of Yasar University*, 1022-1038.
- Tosun, E. K. (2013). Sürdürülebilir Kentsel Gelişim Sürecinde Kompakt Kent Modelinin Analizi. *Yönetim ve Ekonomi Cilt:20 Sayı:1*, 31-46.
- Tosunoğlu, B. T. (2014). Sürdürülebilir Küresel Refah Göstergesi Olarak Ekolojik Ayak İzi. *HAK-İŞ Uluslararası Emek ve Toplum Dergisi*, 133-148.
- Türkiye 2021 Energy Policy Review. (2021). International Energy Agency .
- TÜİK. (2022, March 30). Greenhouse Gas Emission Statistics: Received from <https://data.tuik.gov.tr/Bulten/Index?p=Sera-Gazi-Emisyon-Istatistikleri-1990-2020-45862#:~:text=Sera%20gaz%C4%B1%20envanteri%20sonu%C3%A7lar%C4%B1na%20g%C3%B6re,CO2%20e%C5%9Fd.%20olarak%20hesapland%C4%B1>.

- UNEP. (2008). *Green Jobs: Towards decent work in sustainable, low-carbon world*. Washington, DC: Publishing Service Section, United Nations Office.
- Victor, P. A. (2010). Ecological economics and economic growth. *ANNALS OF THE NEW YORK ACADEMY OF SCIENCES*, 237-245.
- WBCSD. (2021). SOS 1.5: Net Sıfır Karbon için Yol Haritası. İstanbul: SKD Türkiye.
- WCED. (1987). Report of the World Commission on Environment and Development: Our Common Future.
- Wen-xiu, W., en-Jian, H., & Xiao-long, Z. (2014). Construction of green GDP accounting system . *Advanced Materials Research*, 2301-2304 .
- Wolf, M., Emerson, J., Esty, D., Sherbinin, A. d., & Wendling, Z. (2022). *Enviromental Performance Index 2022*. New Haven: Yale Center for Environmental Law & Policy. epi.yale.edu.
- Yalçın, A. Z. (2016). The Idea of Green Economy for Sustainable Development and Fiscal Policies. *Journal of The Faculty of Economics and Administrative Sciences*, 749-775.
- Yazar, K. H. (2006). Sürdürülebilir Kentsel Gelişme Çerçevesinde Orta Ölçekli Kentlere Dönük Kent Planlama Yöntem Önerisi. Ankara, Türkiye: T.C. Ankara Üniversitesi Sosyal Bilimler Enstitüsü Kamu Yönetimi ve Siyaset Bilimi (Kent ve Çevre Birimleri Anabilim Dalı).
- Yerküre. (2019). *Türkiye'nin Gıda ve Tarım Sistemi, İstanbul'un Gıda Tedarik Zinciri*. İstanbul: Greenpeace
- Yerküre. (2021). İstanbul Tarım Alanları: İnfografiklerle İstanbul'da Tarımsal Üretim ve Gıda Tedarik Sistemleri. İstanbul, Türkiye: Yerküre.
- Yılmaz, D. F. (2022). Yeşil İşler. D. F. Yılmaz içinde, *Yeşil İşler'e Doğru: Sürdürülebilir Gelişme ve Yeşil Ekonomi* (s. 91-92). Ankara: Nobel Akademik Yayıncılık.
- Zhang, D. (2015). Küçülme: Ekonomik Büyüme mi Eşitlik mi Tartışmasının Ötesine Geçmek. R. Weiler, J. v. Bergh, R. Hueting, D. Zhang, F. Flipo, & G. Kallis içinde, *Yeşil Ekonomi; Küçülmek Güzeldir* (s. 63). İstanbul: Yeni İnsan Yayınevi.