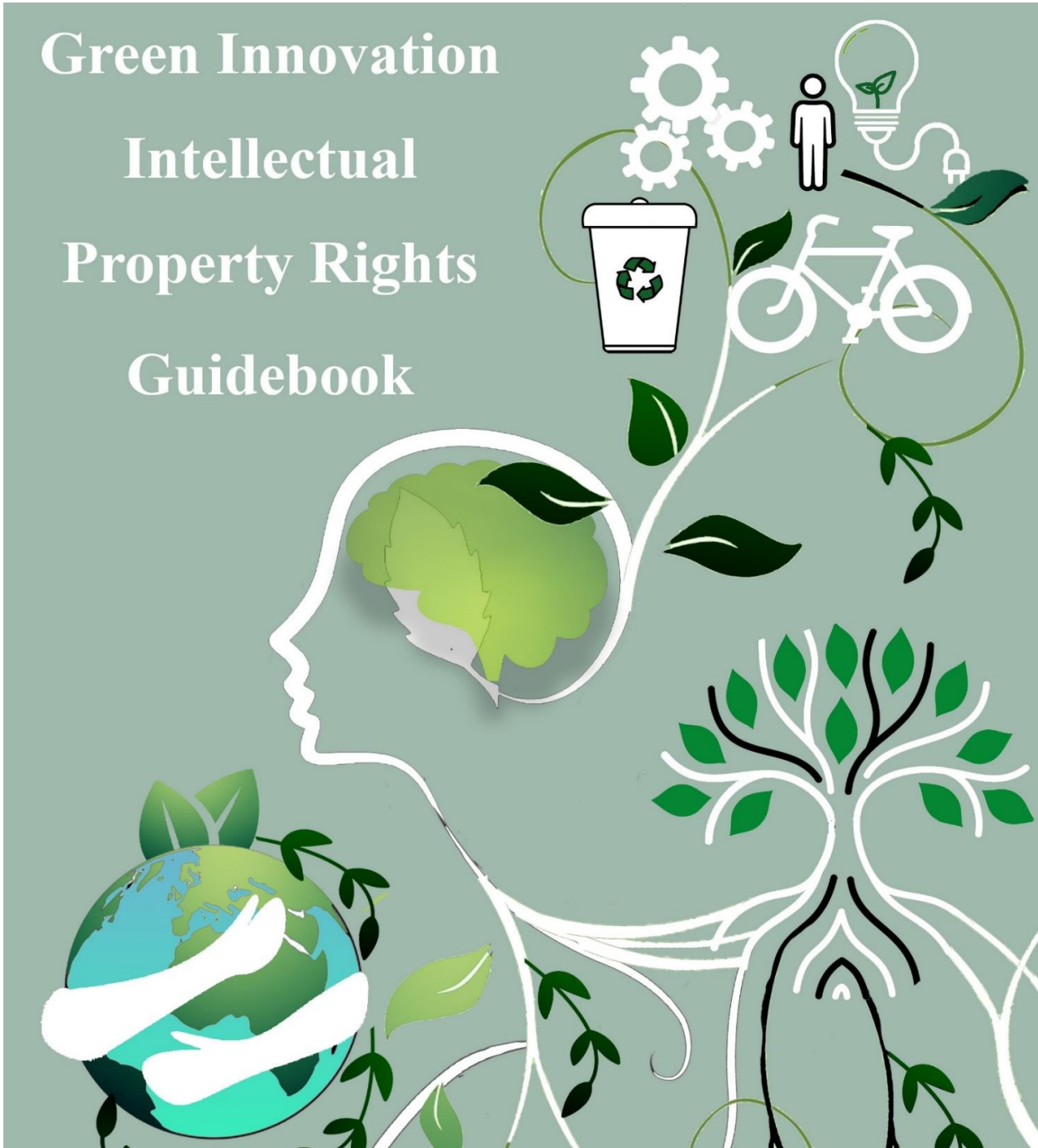


Green Innovation Intellectual Property Rights Guidebook





About the project

Green Impact MED - Positive Investments for Positive Impacts (GIMED) is a project funded by the ENI CBC Mediterranean Sea Basin Programme. The project has a budget of 2.6 million euros of which 90% (2.3 million) is EU contribution. For more information on the project visit: www.enicbcmed.eu/projects/gimed

This publication is the result of project partners' work towards strengthened intellectual property rights in the field of green entrepreneurship. The guidebook aims to enable and protect green entrepreneurs and their innovations. The guide is also meant for relevant public institutions' staff to better support innovative entrepreneurs in their region.



Disclaimer

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Acronyms

1- IP	Intellectual Property
2- IPR	Intellectual Property Rights
3- WIPO	World Intellectual Property Organization
4- PV	Photovoltaic
5- CO2	Carbon Dioxide
6- IEA	International Energy Agency
7- NZE	Net Zero Emissions
8- IPMed	IP Capacities for Smart, Sustainable and Inclusive Growth in the Mediterranean
9- 3R	Reduce, Reuse, Recycle
10- COP	Conference of the Parties
11- SOED	State of the Environment and Development in the Mediterranean
12- SMEs	Small and Medium Enterprises
13- EU	European Union
14- MENA	Middle East and North Africa
15- SDG	Sustainable Development Goal
16- UN	United Nations
17- GSTC	Global Sustainable Tourism Council
18- NEERI	National Energy Efficiency and Renewable Energy Action
19- BDL	Bank de Liban
20- UNDP	United Nations Development Program
21- LEA	Lebanese Environmental Action
22- EUIPO	European Union Intellectual Property Office
23- R&D	Research and Experimental Development
24- WHO	World Health Organization
25- UNEP	United Nations Environment Program
26- MAP	Mediterranean Action Plan
27- IMAP	Integrated Monitoring and Assessment Program

28- MEDQSR	Mediterranean Quality Status Report
29- MED-PO	Mediterranean Pollution Monitoring and Research Program
30- SPA/ RAC	Special Protected Areas Regional Activity Centre
31- PAP/ RAC	Priority Actions Program Regional Activity Center
32- ICZM	Integral Coastal Zone Management
33- SPAMI	Special Protected Areas of Mediterranean Importance
34- MPA	Marine Protected Area
35- SCP/ RAC	Sustainable Consumption and Production Regional Activity Program
36- WTO	World Trade Organization
37- IPCC	Intergovernmental Panel on Climate Change
38- SE	Small Enterprises
39- NGO	Non-governmental Organization
40- PCT	Patent Cooperation Treaty
41- TRIPS	Trade-Related Aspects of Intellectual Property
42- TTO	Technology Transfer Office

Executive Summary

Humanity has managed to generate creative lines in different sectors which have marked their fingerprints in history. The intervention of high technology structures and globalized services have both had their impact on society, economy, and environment. However, the huge advancement humans have achieved holds another aspect. The other face of the coin reflects emerging threats such as climate change, resource scarcity, deforestation, and loss of biodiversity, all of which call for immediate actions to reduce the negative environmental impacts or even ban some harmful products. This implies that shifting towards a green future is no longer an alternative; instead, it is essential for the continuity of human survival. Concepts and technologies such as circular economy, green technology, and energy production out of renewable resources like water, air, and sun hold promising potentials. Inspiring projects in these fields aim to tackle major obstacles we are currently facing; however, how can these trends be incentivized and protected?

With the lack of a guide that highlights the journey of green innovators, the need of a Green Intellectual Property (IP) guidebook arises, since it can help in exploring the future of a greener economy, influencing positive transformations in the regional market, and opening the door to new green jobs. Mediterranean researchers can have an important role in assessing the ecosystem of technology transfer, identifying gaps, and recommending an action plan that can bring the green economy to light.

The “Green Innovation IPR (Intellectual Property Rights) Guidebook” holds the key answer on how to enable, as well as guide and protect green innovations. It will consist of two main parts: desk research divided into three sections and a focus group targeting representatives from different Mediterranean countries associated by a survey addressed to green innovators in the field. It will showcase regional examples of green initiatives, as well as the importance of setting green IPR and explaining its roadmap in Egypt, Tunisia, Lebanon, Palestine, Spain, and Italy.

The introduction to the subject associated with defining steps for developing a circular business model will be developed in Section 1. Section 2 will tackle green intellectual property rights, defining IPRs and their relative relation with green innovation. Following, the work will be questioned and realized by interviews and a questionnaire with a focus group that will contribute towards tackling the green IPR issue by addressing a set of targeted questions to identify challenges and yearned opportunities. In

Section 3, green commercialization is highlighted with a guide for green entrepreneurs to boost their access to the market. The practical approach will be straightforward aiding researchers, academia, and green innovators to extend their knowledge concerning green IPR, the regional market status, its demands, and how Agenda 2030 can be achieved in this stratum.

Regarding green innovation IPR, world organizations, such as WIPO (World Intellectual Property Organization), have set an IPR strategy particular to green novelty. Intellectual Property Rights allows green companies and entrepreneurs to obtain added value from their inventions, safeguarding their originality and partnerships and also permitting them to make revenues from it. IPR plays the role of incentives, motivating people to work in the green field. The guidebook will present a broader understanding of the green IP in the Mediterranean region, gaining experience from the European green IPR, testing the green innovations, and then finding a model that fits the regional situation. Steps to certify green inventions will be displayed in a user- friendly way, involving graphics and making it easy and accessible to all users of this guidebook. The objective is to develop a green IP guidebook to protect future eco-preneurs, opening new opportunities and showing them how to commercialize their work on the level of green collaborations and municipalities.

By using infographics, charts, diagrams, and practical steps to achieve objectives, we aim at making this guidebook easily accessible to stakeholders, incubators, and agri-food initiatives covering most green sectors.

Introduction

In strife to achieve a sustainable growth, the linear economy model must be substituted by the circular one. Recorded data related to 2020 showed that although worldwide economies sagged under the weight of Covid-19 restrictions, alternative energy sources like wind and solar PV continued to expand fast, and electric vehicles have hit a new sales record. However, the transformation still has a long way to go, as the restrictions implied by the Covid19 pandemic pose a hurdle in the current situation. Gas, coal, and electricity have peaked in demand, though their prices have registered a sharp increase. This accounts for the fact why the world is facing the second largest annual increase in CO₂ emissions throughout history. The current trajectory is far from the International Energy Agency's (IEA) scenario of a landmark Net Zero Emissions (NZE) by 2050, published in May 2021, which lays a narrow but doable path to a 1.5°C stabilization of rising global temperatures and the attaining of other energy related sustainable goals.¹ In addition to IEA's scenario, there comes additional initiatives and plans. Countries have signed the Paris Agreement to tie down global temperature rise to be controlled below 2°C.² A number of relative plans and strategies have been developed in different countries addressing this topic. The Mediterranean region recorded that it has been warming 20% faster than the global average according to the "First Scientific Assessment Report about Climate and Environmental Change in the Mediterranean". This evaluation, released in 2019, explained that the regional temperature will rise by 2.2°C by 2040. Nevertheless, these numbers show only part of the problem, and obstacles related to food security, health, sea levels, availability of water resources, and loss of ecosystems loom on the horizon.

In order to pace the transition towards a more sustainable future attempting to challenge the environmental threats, green innovation promotion is urgently required. Motivating green innovation is vital to meet the provocations of sustainable development and climate change. Thus, the acknowledgement of Intellectual Property Rights (IPR) of invention comes into light. Recently, green innovation IPR has been praised as a way to incentivize creativeness. In its 2030 Agenda for Sustainable Development, WIPO summed up the importance of IP right to green technology and a sustainable economy as following: **"A nation's ability to innovate, attract foreign investment, and develop valuable**

businesses offering products and services that can compete on a global scale is intrinsically linked with intellectual property [IP] and its supporting innovation ecosystem."³

Targeting the Mediterranean region, enterprises have been initiated to develop and enhance green IPR, for instance, IPMed (IP Capacities for Smart, Sustainable and Inclusive Growth in the Mediterranean region). The project aims at making public authorities and innovation dealers ease the access of innovative start-ups, youths, and women entrepreneurs to IPR and commercialization schemes for efficient IP management. IPMed holds very promising results to be achieved by the year of 2022 such as generating a virtual library for effective IPR practices, training 1,000 people on IPR use and management, initiating three cross border study visits, providing 450 personalized IP and innovation related services for startups, in addition to 8 policy reviews aiming at aligning IP laws, regulations, and practices in the participating countries (Jordan, Greece, Italy, Spain and Tunisia) with qualified international practices. Many other initiatives are being raised in this domain as the green IPR issue continues to appear as a trending topic.⁴

The first part of the guidebook will introduce the concept of green growth highlighting its economic and environmental importance. In addition, it will spotlight the strategy to develop a successful green business model guiding eco-preneurs and startups. The second part will focus on the intellectual property rights and how to adapt them to green technology. Finally, the third part deals with green innovation commercialization. Thus, this practical guidebook directs entrepreneurs, startups, and academics on how to develop a green business and protect it.

Section I: Developing Green Trends in the Mediterranean Region

1. Green Growth versus Green Innovation

“Green Growth” is a term that refers to the act of growth and development while maintaining natural resources and environmental sustainability. Globally shared concerns about the depletion of natural resources open the door to the green growth concept. As sustainability tackles all three elements, economy, society, and environment simultaneously, innovation is required in order to achieve growth. “Green Innovation”, in all its forms- whether green technology, clean-tech energy, biotechnology, etc.- not only updates the markets and generates new employment opportunities, but it also paves the pathway in front of sustainable development and eases the transition towards an eco-friendlier economy.⁵

2. Highlighting the Importance of Green Innovation

“Green Technology” or green technologies are environmentally sound technologies as indicated in Chapter 34 of Agenda 21(The United Nations Program of Action from Rio, 1992). Green technologies “protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual waste in a more acceptable manner than the technologies of which they were substitutes.”⁶ Concisely, the term “Green Innovation” covers all innovations used to encourage sustainability and reduce greenhouse gas emissions, or to actions that diminish our impact on climate change.

Maintaining societies’ health, environmental wealth, as well as conserving the countries’ economies and increasing their efficiency is an interconnected strategy that green innovation can advance. Promoting “Green Growth” is mainly supported by five respective factors⁷:

- 1- Maximizing Productivity
- 2- Sustainable Innovation
- 3- Developing New Markets
- 4- Reliability



5- Steadiness

Licensing green technology is an important step in the field of promoting green innovation. Green ideas must be protected by patents, industrial design, utility models, copyrights or any other suitable form of IP authorship. This is due to the fact that patents are critical to the inventors and researchers through which they can take advantage of the revenues of their investments. As the topic of green IPR is coming more into spotlight recently; displaying different points of view, some argue that the IPR might block technology transfer through banning the transfer of information, others proclaim that there are no specific intellectual property systems that support green innovation as a unique prototype in the market. On the other hand, other groups argue that it is compulsory to license green inventions to safeguard technology and promote more green investments in the society.

Whether carbon capture and storage technologies, smart agriculture techniques, green building material or alternative fuels, the green technology industry is increasingly building momentum.

2022 is already set to be a year of mixed fortunes similar to those witnessed in 2021. As the global community grapples with the difficult task of building back better, green technologies continue to offer the solutions needed for more sustainable and resilient societies.

Crossing over from 2021, WIPO GREEN's acceleration project is set to continue, in addition, an acceleration project will launch to address environmental needs in cities.

A new finance initiative will also be launched to support connections emanating from acceleration projects and to advance technology development.

3. Policy Intervention in Green Innovation

Policy measures take an essential role in facilitating green acts in the society. Some of these acts are as listed below:

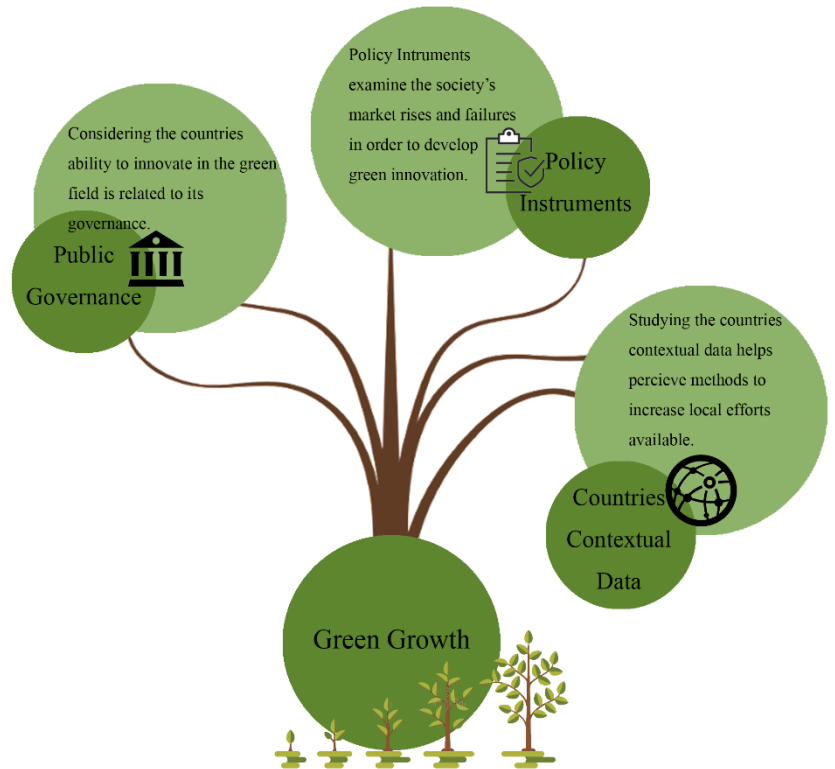
1. **Public Governance** can be summarized by the set of most publicly specified institutional mechanisms, incentive structures, and other factors that influence how different public and private entities are involved in socioeconomic development.

2. Policy Instruments

Green growth is not limited only to technological advancement but also to demanding factors in the markets. Policy Instruments analyze markets and systematic failures concerning green innovation and aid in advancing this field.

3. Developing Countries' Context

Technology transfer and responsive R&D must focus on strengthening local capacities available in the country.



Placing policies that enhance, as well as promote, green thinking and business awareness lead to the transition towards a sustainable future, a future that exhibits circular economy rather than linear economy. This accelerates the achievements of eco-friendly initiatives planned by countries. Implementing the circular economy concept in a green business can take variable approaches and strategies.⁸

4. The Circular Economy Concept and Green Intellectual Property Rights

4.1. Defining Circular Economy

Circular economy is based on the notion of closed loops through which raw materials and products are used as efficiently as possible. The relation formed between circular economy and sustainability is a complementary one, since all activities enrolled in circular economy promote sustainability; however, not all sustainable acts address circularity. This is because sustainability is a comprehensive approach that includes the society, economy, and the environment all at once; meanwhile, the circularity postulation defines the resources' cycles.⁹

Thus, the notion of circularity encompasses the practices dealing with manufacturing resources. In this context, the various definitions of circular economy have focused on either the efficient methods of raw material usage. The first category of definitions, concerned with material use, involves the 3R- technique: Reduce, Reuse, and Recycle. On the other hand, the second group is related to system change focuses on closed cycles, renewable energy, and system thinking. Closed cycles discuss the ecosystem model through which all wastes are recycled and become new inputs to remanufacture. Concurrently, “Renewable Energy” states that the circular economic model is fed by renewable energy that has a negligible impact on the environment. Finally, “System Thinking” describes that the circular economy is not only renewable energy and closed loops, but also demands actors (companies, person and organism) that are connected like an octopus, through which the action of each actor affects the others.¹⁰ Regarding any definition of the circular economy, the outcomes are of common value. Advantages springing out of circular economy can be demonstrated by economic growth, which will generate in its turn more jobs that value labor more than resources, change in demand status, and promote green innovation.

Therefore, circular economy will drive green novelty in the pathway that initiates the track towards a sustainable future. Targeting different provocations presented by the present world will require original circular ideas using different visions, such as Regenerative Design, Performance Design, Cradle to Cradle Design, Industrial Ecology, Biomimicry, etc. Triggering creativity in the green field brings the IP rights topic on the table. IPR represents the aftermath of the human mind and creativity. It grants recognition as well as revenues from the generated invention. The main aspect of IPR is that it supports inventiveness. IPR protects inventions, distinctive signs, designs, and literary and artistic works. Recently, the subject of green IPR has been trending through researchers working with sustainable practices. Namely, “Green IPR” is popularized and studied to understand its impacts on the future sustainability. “Green IPR” refers to the intellectual property rights specialized at green innovations, rather than common inventions in other fields. The aim behind developing IPR specific to green innovation is to incentivize the eco-friendly production and protect it, as well as to allow the diffusion between researchers and stakeholders. It will help innovators generate their own line, accelerate its registration, and limit the challenges they face in licensing. The consequences of Green Intellectual Property Rights are characterized by the following:

1- Green IP Rights Create a Ripple Effect

Tangible difference will be demonstrated as a ripple effect through the green sector. With pledged protection those investments will have financial, social, and environmental returns, financial institutions will trigger the path towards eco-friendly generations. Meanwhile, real estate companies are urged to ascertain clean energy products and waste decrease. Both the infrastructure and transportation industry will create new plans to minimize pollution. Finally, the technology sector will have to contribute to new lines and trends including artificial intelligence.¹¹ This will have its direct outcome on both educational institutions and the market. Involving educational institutions to answer the demand of the green industries will generate positive influence. Research applied in universities, institutions, and research departments will have a direct positive impact on the industry. Moreover, the market will be influenced by the increased eco-friendly products with competitive qualities. This will cause consumers to buy ecofriendly services and products causing an advantageous impact on the society, as well as the environment.

In other words, IP rights will generate an added value through several types of technology and partnerships, paving the way towards a successful green future. It creates a library of information for building innovation upon every new accepted patent application.

2- Green IP Rights Generate Expandable Open Innovation

As every accredited green invention is published in all its details and specifications, possible elaborations and progress can be achieved by continuous researching and advancement through different stakeholders and green technology seekers. Collaborative agreements that support this eco-friendly IP advancement have been signed. An example of this is WIPO GREEN, established in 2013, which is an online platform that links sustainable providers and seekers globally. Moreover, the WIPO GREEN database provides technologies from concepts to marketable products, available for license, collaboration, and ventures. In addition, it runs Acceleration Projects that target connections to enable green technology transfer¹². WIPO GREEN publishes annual reviews of achievements and activities and hosts diverse green exhibitions that display sustainable inventions, such as the Africa- focused technologies held at COP22 in 2016 and more recently in 2019 COP26. Another agreement is the Eco-Patents Commons initiative described as “Caring through Sharing” by IBM, Nokia, Sony and Pitney

Bowes, whereby big businesses affirm their green credentials by sharing them with their competitors free of charge for a broader social benefit.¹³

Collaborations, agreements, and guidelines to accept a patent application, all together form a knowledge- informative base that maintain open boundaries for green innovation rather than obstructing it.

4.2. The Impact of Green IPR on Circular Economy

Developing Green IPR can have important impact on encouraging circular activities through many ways:

1- “Prior Art”: A Novelty Saver

“Prior Art” describes the data obtained from previously registered innovations or applied innovations according to their priority date. Searching “Prior Art” can help green researchers save money and time, as it emphasizes novelty of the intended invention. Furthermore, Prior Art displays data from different models which can open up new horizons to update inventions in the green sector.

2- IPR and the Circular Economy

Designing green trends sprawl at the core of transitioning towards circular economy. The significance implied by IPR implementation on green activities is that besides the protection they provide, they also create strength points by elevating the green product value. Moreover, IPR Marks highlight the distinctiveness of a green product by creating an exclusive characteristic to grab the customers’ attention.

3- IPR Establishing a Globally Sustainable Network

Finally, as some argue that setting up green IPR can limit the inventing activity, efforts rise in this domain to enhance the diffusion of green data across the globe through initiating international partnerships. Strategic global alliances can promote the implementation of realistic practices by addressing sustainable goals cooperatively. This will expand the impact towards human and financial capital, market access and collaborations.¹⁴

So far, inducing IPR in the green field is considered vital regarding circular economy enterprises. In addition to acquiring IPR, a defined strategy must be followed and a particular model must be built

to achieve the circular goal. Circular Economy is not a single prototype of business. According to “Board of Innovation”, companies resemble dots along the circle, creating a network between suppliers and customers, called a value chain. This network can be in two ways: either organized as a straight line between natural resources and landfills (linear economy) or generating a continuous cycle of value with zero waste.¹⁵ Founding eco-enterprises based on original proposals will require specific strategies to develop, commercialize, and acquire their IPR to safeguard them.

5. How to Create a Circular Economy Business Model?

Developing a circular business model is based on three steps:

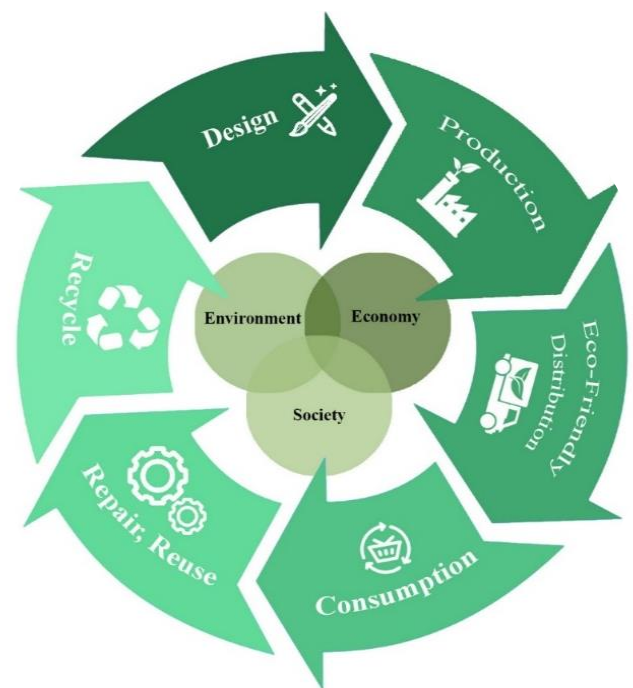
Step 1: Produce a *visual value chain* identifying key sources starting from the extraction of raw materials till their life end. To achieve the target of developing a circular model, products and resources should be sourced from the economy rather than natural resources.

Step 2: Capture value through IPR. Research “Prior Art” to make use of the data presented by other innovators previously and to ascertain the novelty of your idea. Performing this step can reserve money and time.

Step 3: Designate main actors and frameworks that work in the domain you have chosen. Draw a table that illustrates your financial, social, as well as environmental inputs and outputs. Use your Green IPR to capture the attention of key stakeholders and allow diffusion and partnerships, as well as consider IPR costs and revenues from litigation and fees. Research success stories of previous people that practiced a similar activity.

Step 4: Set your invention impacts. Your green business not only will affect your customers but will also spread to the economy, society, and environment.¹⁶

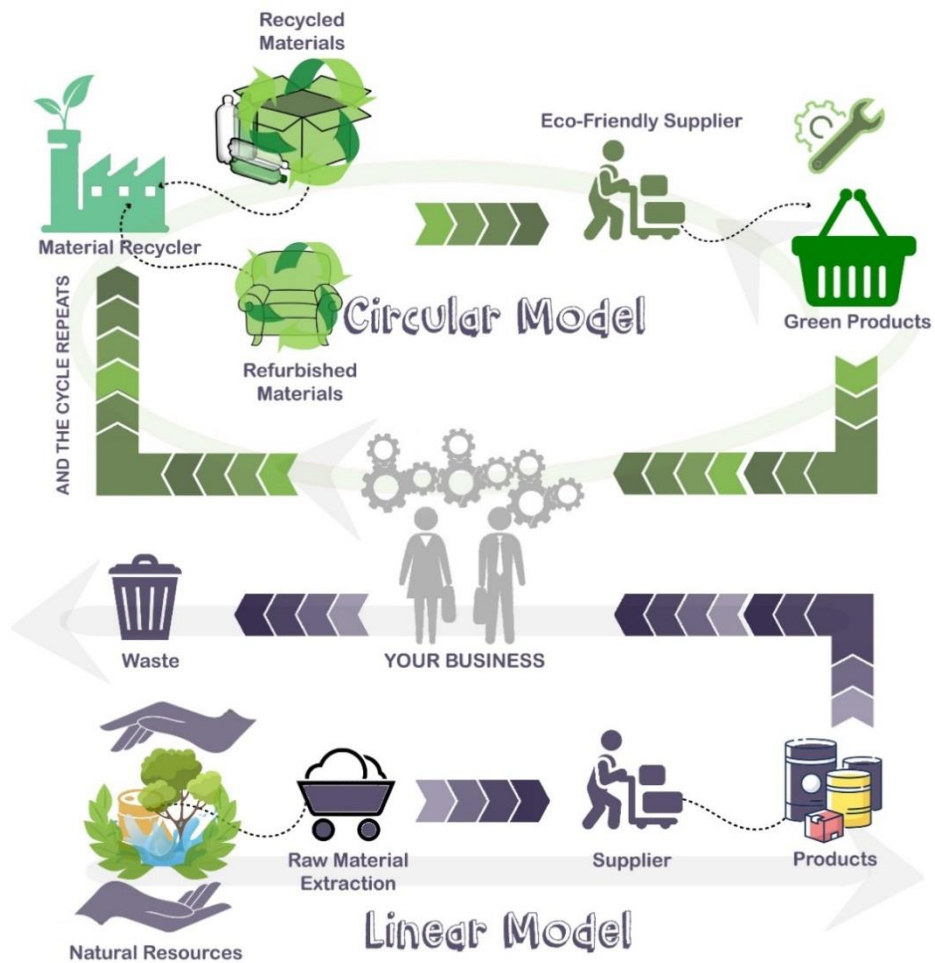
Step 5: Target your audience and develop your commercialization strategies. Green IPR can help you access patent pools, trademark licensing and branding.



STEP 1

Produce a visual value chain identifying key sources starting from the extraction of raw materials till their life end. To achieve the target of a developing a circular mode, products and resources should be sourced from the economy rather than natural resources.

CIRCULAR BUSINESS MODEL VS LINEAR MODEL



STEP 2



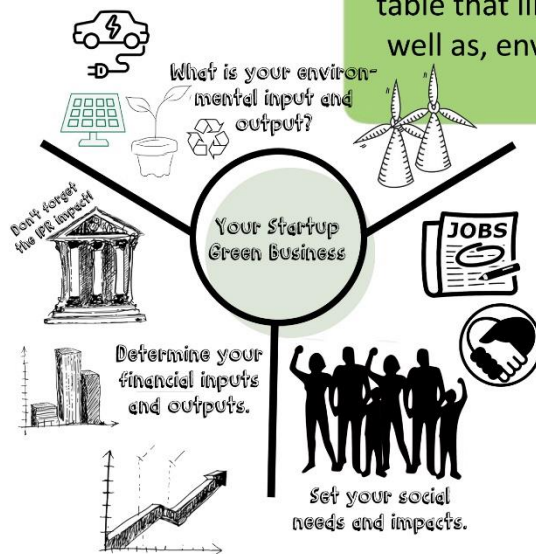
Save Your Time and Money!

Capture value through IPR. Research “Prior Art” to make use of the build upon the data presented by other innovators previously and to ascertain the novelty of your idea.



STEP 3

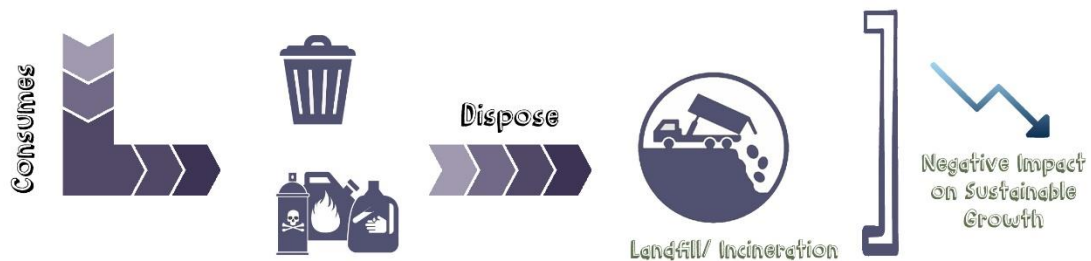
Designate main actors and frameworks that work in the domain you have chosen. Draw a table that illustrates your financial, social, as well as, environmental inputs and outputs.



Use your Green IPR to capture the attention of key stakeholders and allow diffusion and partnerships, as well as, consider IPR costs and revenues from litigation and fees. Check success stories of previous people that practiced a similar activity.

STEP 4

Set your invention impacts. Your green business will not only affect your customers. The impact will spread to the economy, society and environment as well.



STEP 5

Linear Model Outcome

Target your audience and develop your commercialization strategies. Green IPR can help you access patent pools, trademark licensing and branding.

6. Strategies for Achieving a Circular Business

Strategies for Achieving a Circular Business

1 Retain Product Ownership

The manufacturer rents or leases its product to the consumer instead of selling it.

By this way, the manufacturer is in charge of the products when consumers have finished using it.

EXAMPLE:

XEROX leases its photocopiers and printers to its clients.

EXAMPLE:

Bosche Power Tools remanufactures its used products in order to extend their lives. In this way they compete in the market with other inexpensive, low quality products.

2 Product Life Extension

Products that live longer!
This strategy depends on designing products that last longer, which opens the horizon on used products in the industry.

3 Design For Recycling

The method requires companies to adapt their goods and manufacturing processes in order to optimize the reusability of their materials in new products.

This strategy often involves collaboration with other industries that work with recycled material.

EXAMPLE:

Adidas and Parley's collaboration: Parley recycles plastic waste in order to create textile threads. Adidas uses these threads to create their shoes and apparel. Together, Adidas and Parley reduce the amount of plastic disposed in the ocean.¹⁸

7. Different Types of Circular Economy Models

Circular business models are interconnected with each other with their common sustainable goal.

They adapt based on three basic questions:

- 1- Who are the consumers?
- 2- From where are the resources obtained?
- 3- Where do waste go? ¹⁸

Sharing Platform

'Sharing Platform' is a strategy based on providing the client with access to specific assets. This can be best described by Uber and co-working spaces. The distinction between the leasing model and this model is that 'Sharing Platform' lies on much shorter rental time and larger number of customers using the product.

Resource Recovery

The 'Resource Recovery' model deploys technology developments and advancements to repurpose and bring back used resources into action. For example, methane can be captured and converted into power or heat. The importance of this business method is that it aids in decreasing wastes while increasing resource value.

Circular Supplies

'Circular Supplies' is a model that operates by substituting virgin resources with bio-based, renewable or repurposed materials. An example on that is converting agricultural waste into bio ethanol, a source of renewable fuel.

Product Life Extension

The purpose of this model is to extend the life and efficiency of the provided product. The technique of remanufacturing heavy equipment components to be utilized again, as if it were a new product, is a real-world example of how a product's life can be extended. Restoring the products' conditions back as new can serve this goal. Saving, maintaining, repairing, remanufacturing, enhancing, or remarketing a product is referred to as 'Product Life Extension'.

Section II: Market Requirements

1. The Vitality of Green Innovation in the Mediterranean Region

The Mediterranean region, an affluent area, includes on its borders 7 marine eco-regions, 75 coastal hydrological basins, and 224 coastal administrative regions. The Mediterranean Sea occupies a basin of almost 2.6 million Km². It is distinguished as one of the 25 top global biodiversity hotspots with a prosperous flora and fauna.

Being located on the shores of the Mediterranean Sea, the area has developed an economic significance by being one of the world's busiest shipping routes, with about one third of the world's total merchant shipping, compromising a historical, social, and environmental importance.¹⁹

However, such a busy industrial route has its downsides as well. SOED (State of Environment and Development in the Mediterranean) has reported *that 228,000 deaths in the Med region are attributed to air pollution. Nearly every day, 730 tons of plastic waste ends up in the Mediterranean Sea.* Approximately 30% of the population encounters water scarcity; 26 million from an average of 220 million do not have access to clean drinking water, and 160 million cannot acquire safe sanitation. Climate change captures major recognition as the territory displays a 0.4°C rise in seawater temperature, a 1.54°C increase in air temperature above the global average, a 20% faster rate in global warming than the global average, and a decrease by an average of 30% in spring/summer rainfall is expected by the year of 2080. Sea level record is expected to rise between 0.43 and 2.5m by 2100, with an increased threat for people living below current sea level. The recorded data call out for immediate actions to *address the environmental complication.* Combatting this provocation commands fostering green ingenuity.²⁰

The area has been encountering various issues starting from the economic crisis after the Covid-19 pandemic, the Port of Beirut Explosion, and regional political turbulences. The Ministries of Environment in the Med Region estimated that climate change is predicted to cause an increase in temperatures and make water scarcer. This will negatively impact the agricultural sector. Increasing temperatures will, in their turn, cause a rise in energy demand, straining the businesses and services. Thus, applying the sustainability concept demands paving the way for the green industry and supporting green research.

2. Potential Green Trends in the Mediterranean Region

As Plato states, “Necessity is the mother of invention”. As such, because of the climatic problems aroused by the Mediterranean region and the ambitions brought by Agenda 2030, in addition to the available aptitudes, potential green trends transpire. The environmental hazards the Mediterranean is combatting urge new perspectives regarding global practices. This can affect the way we interact with the energy, transportation, water, and industry sectors by switching to a sustainable lifestyle. To achieve this impact, strategies and plans must be implemented in the Mediterranean region. This fact has already started in the Mediterranean countries, as each country has set its own plans and strategies to resist the climate obstacle. Parallel to plans and strategies, green startups and entrepreneurships are launched in the Mediterranean area. Green entrepreneurships offer chances that make up the practical side in the climate confrontation. The green entrepreneur shows the 3 in 1 formula that merges the economic, environmental, and social levels and introduces new ways on how to produce and consume resources. SMEs and entrepreneur implemented activities build the bridge that transitions into a green future. Factorial designs and ideas can emerge in their production lines inspired by the climatic dilemma and present potentials. Green trends that Mediterranean entrepreneurs are looking for are:

2.1. Renewable Energy

Med countries have a temperate climate with moderate winters and hot sunny summers. The available climate allows the production of energy from renewable as well as marine sources. Renewable energies that can be produced in the Mediterranean area include geothermal, solar, wind, and wave energy.²¹ (For information on the Solar Power capacity in the Mediterranean region, visit <https://solargis.com/maps-and-gis-data/download/>)

Trends in producing energy out of renewable resources comprise a big part of green innovation. Morocco, Tunisia, and Egypt take a great part in the renewable energy sector. Production of solar water heaters in 2007 by Biome Solar Industry (BSI) in Tunisia represents a success story in this field. Their impact was characterized by greening the industries, generating jobs, and reducing carbon emissions.²² In Lebanon, a portable solar panel was invented locally, enabling the production of energy from everywhere. NEX-LABS brings into light the success story of Rayan Bahchik, who designed a portable solar panel named *Solar Ray Amper*, supported by INJAZ Lebanon.²³ Spain and Italy are

moving to bring more solar and wind farms after surging costs of natural gas and carbon permits (a fee that energy producers have to pay for GHG to cut emissions in EU). Across the region, many practices are being accomplished in this field, sponsoring the transition towards clean-tech energy.

2.2. Green Hydrogen

Achieving zero-carbon emissions cannot be attained through renewable energy and electrification only²⁴. The path towards decarbonization must be assisted by developing the concept of green hydrogen and putting it into action. Green Hydrogen delivers zero-carbon raw material for industries, zero carbon energy to generate heat and electricity, and powers modes of transport like cars, buses, trains and ships.

Countries in the Mediterranean with good renewable energy potential can produce green hydrogen locally. This leads to the creation of new jobs that sustain the society, boost the energy security, and minimize the effects of oil price change and use. Already available infrastructure connecting some countries in the Mediterranean can help aid the transport, since according to the Maghreb region, the existing pipelines connecting North Africa to the EU at multiple points can be deployed for hydrogen export. In other words, Libya, Tunisia, and Algeria can export hydrogen to Italy; Morocco and Algeria can export it to Spain.

The trend of Green Hydrogen is already on the rise in some countries in the Mediterranean region. “Green Hysland” in Mallorca, Spain, is the first green hydrogen project in the Mediterranean region to get the largest grant from the European Commission body. “Green Hysland” will distribute and use at least 300 tons of renewable hydrogen annually, yielded from solar energy on the island of Mallorca. Moreover, the project is a part of the “Hydrogen Road Map: A Commitment to Renewable Hydrogen” recently ratified by the Spanish government, which elevates Spain as a technological benchmark in the production and use of renewable hydrogen, with a production capacity of 4GW by 2030.²⁵

Due to the complementary relationships between the EU’s green and technological objectives and the huge natural resource potential across the MENA region, the Mediterranean region aspires to become one of the main hotspots for the hydrogen economy.

2.3. Eco-Construction, Green and Sustainable Buildings

The trajectory leading to a more sustainable future should be aligned with changing the way we build and perceive our building strategies. In the field of Eco-Construction, many concepts such as green buildings, sustainable buildings, energy efficient buildings, smart buildings, and net zero buildings. All of these buildings' criteria have lower operational costs than conventional buildings, since they require lower or no fuel supply, electricity, and water use over time. Besides, these buildings can sustain the economy, generate jobs, safeguard the occupant's health, as well as protect the environment. In addition to updated building types, new designing ideas like eco-morphic, bioclimatic and bio-eco regenerative designs appear. An Eco-morphic Design explains how the environment and its inhabitants form an ecological whole. Bioclimatic Design is based on local climate, through which the main goal is thermal and visual comfort using natural renewable resources available. Bio-eco Regenerative Design introduces buildings that have an advantageous effect on the environment.

Biomimicry is another design approach that explains that humans can find solutions to their challenges through observing natural systems and forms. It aims at mimicking the form, process, or ecosystem in order to achieve sustainable methods that solve problems. Besides biomimicry, nanotechnology shows a revolutionary approach in the construction field as it provides materials and designs with doubled efficiency.

In addition to all the revolutionary sustainable themes presented, the Mediterranean region is rich in its own traditional construction methods that are characterized as being eco-friendly. The patio, the courtyard, and all their relative elements represent a sustainable way of living that interacts with the available climate components.

Entrepreneurships in the field of construction unfold new construction patterns. "SHTAYYA Architecture and Sustainability" is a firm created by the architect Shtayya in Palestine. Shtayya uses sustainable construction materials in his designs. For example, he utilizes recycled plaster, heat, and water insulators. From Italy, Shtayya employs cobiax, hollow plastic boxes inserted into concrete slabs that are more environmentally friendly. Cobiax is a recycled material made entirely from plastic garbage. Besides other sustainable concepts Shtayya induces in the architecture presented, to speak for green

sustainability.²⁶ Practices in the field of eco-construction are diverse and numerous to highlight in the field of eco-construction in the Mediterranean area.

2.4. Sustainable Agriculture and Organic Food

Climate change is forcing the urgency for sustainable farming. Reduced seasonal rainfall threat is increasing. Agriculture has effects on both water and organic matter. It is predicted to account for over 80% of total water demand, compared to a global average of 70%.²⁷ This fact emphasizes the importance of the connection between food and water. Meanwhile, due to excessive cultivation of farmlands, organic matter is subjected to exhaustion and pollution by chemical fertilizers. Mediterranean countries encounter diverse obstacles starting from climate change, soil, and environmental break down, and finally rural depopulation. Besides, all of the mentioned challenges, nutrition appears as an indispensable topic at risk. Tendency towards shifting away from the traditional Mediterranean diet is causing obesity, diabetes, and heart disease. This strains the health systems available and puts the social health security in danger.

Addressing SDG 2: Zero Hunger, SDG 3: Good Health and Wellbeing, SDG 10: Reduced Inequalities, SDG 12: Responsible Consumption and Production, SDG 13: Climate Action and SDG 15: Life on Land, the trend of sustainable agriculture and organic food is growing in the Mediterranean district. SOILS in Lebanon demonstrates an example of a non-profit organization that stimulates permaculture ideals and environmentally-friendly agriculture practices among the country's farmers. Many green entrepreneurs are working in the field of eco-farming and organic food. For instance, "Ezra" has evolved a small hydroponic system to be installed in medium and small houses. The project will provide a partial self-sufficiency in vegetables and fruits for households, excluding the need for large gardens.²⁸ Another success story in this scope is Souk El Tayeb in Lebanon. Souk El Tayeb is a social enterprise working on national and international projects and promotes farmers' market.²⁹

2.5. Sustainable Tourism

According to the UN Environment Program and UN World Tourism Organization, sustainable tourism is a "tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities."

Positive effects incorporate job creation, cultural heritage, wild life and landscape mending. As the Mediterranean attracts a great number of tourists each year, tourism practices must be organized.³⁰ The GSTC criteria defines the global standards for sustainability in travel and tourism. It is constituted of four main pillars: sustainable management, socio-economic impacts, cultural impacts, and environmental impacts. GSTC defines two sets of criteria: GSTC Industry Criteria and GSTC Destination Criteria. The first criteria concerned with industry describes the sustainable management of the private sector travel industry, emphasizing on hotels and tour operators. While the second criteria related to destination defines sustainable management of Tourism Destination.³¹(For more information about sustainable tourism standards, visit <https://www.gstcouncil.org/gstc-criteria/>)

Practices in “Sustainable Tourism” are various and many. “La Maison de la Forêt” in Bkassine, Lebanon, demonstrates sustainable thrives in the domain of tourism. A relaxation space, located at the heart of the forest in Lebanon, is characterized by wooden bungalows with red tile roofs dispersed throughout the trees, associated with a restaurant that serves Lebanese food, maintaining the Lebanese culture. Social spaces are generated through the terraces and grounds available. Wood used in wooden bungalows was imported in order not to cut wood from the preserved Bkassine forest, and buildings were built in a way that assimilates existing pine trees. Furthermore, recycling sanitary systems, chargeable Polaris cars, recycled paper products and waste recycling systems are used in the resort.³² Similarly, an Ecolodge was built in Siwa, Egypt, that supports cultural heritage, environmental awareness and living enhancement. The project represents recreational activities, organic products and launches a solid waste management program.³³

2.6. Water Conservation and Water Recycling

The Mediterranean Basin's total renewable freshwater resources are estimated to be between 1212 and 1452 km³ yr⁻¹ and are dispersed unevenly. Mediterranean water resources are scarce, unequally distributed, and frequently fail to meet human and environmental needs. Agriculture is the primary water consumer, particularly on the southern and eastern rims. ³⁴ Thus, water conservation and water recycling become a must. They can take different forms and actions, as well as stimulate the invention of products that promote them. Water recycling recovers water from different resources and reuses it for a variety of applications including agriculture and irrigation, portable water supplies, groundwater

replenishment, industrial processes and environmental restoration.³⁵ Green pioneers in the Mediterranean race to find eco-solutions that address the water issue. For instance, Difaf Sal, a business enterprise in Lebanon concerned with water sustainability and environmental solutions, has multiple services that promote water conservation and treatment such as conveying solutions that enhance freshwater resource conservation (rivers, lakes, groundwater) and management (rainwater harvesting, water-retention landscaping). In addition, they treat, monitor and reuse wastewater and decrease water usage by introducing water wise irrigation and responsible household water-use. Another successful enterprise case in the Mediterranean is in Tunisia, where Elma Eco. by Mona Lamine intends to provide water treatment systems that rely on natural filtration by plants and laterites.³⁶ These are just a few examples of eco-solutions that have emerged in this sector.

2.7. Waste Management

The daily amounts of disposed wastes in the Mediterranean are affecting the soil, water, and air. The amount of plastic tossed is estimated to be 730 tons on a daily basis, meanwhile, 60% of marine litter on the seaside is made up of single use plastic. The mass of microplastics at the surface of the Med Sea surpasses the maximum threshold, marking more than 64 million floating particles per km³.³⁷

In addition to the notable quantities of plastic wastes and the 184 million tons of solid wastes disposed per year, the Covid 19 pandemic marked an extra unforeseen increase in the volume of healthcare waste.³⁸ As a result of the Covid pandemic, adding to the effects of growing waste dump that impede the contribution towards the overall objectives of reducing CO2 emissions, cracks in the waste management systems arise.

Increasing waste management is of vital importance. Dr. WEEE, a company in Egypt targeting electronic waste to be recycled for health and economic purposes, has presented a sustainable scheme through treating e-waste by an application designed to make recycling easier for consumers. The application was based on asking each person in the country to sell their old e-wastes to Dr. WEEE and receive in its turn service money. Another example of successful enterprises in the domain of waste management is “Geocycle” in Italy, which provides sustainable and innovative solutions for the simultaneous recycling and recovery of waste. (For more information about Geocycle, visit <https://www.geocycle.com/>). In Lebanon, Zero Waste Act functions as a catalyst for the generation of practical waste management

concepts based on what is possible in terms of time and money.³⁹ Italy has leading initiatives in the management sector by recycling municipal waste, plastic packaging, biodegradable and solid waste, from collection to sorting to recycling.

Waste management holds substantial potential in Spain as it can generate new products in textiles, furniture, housewares, and paper ware, from managed waste sources from wood industries, graphic arts, plastic and cardboard waste. (GeoCycle Spain has been awarded with sustainability seals from the Ministry for Ecological Transition, as well holds 3 ISO certifications).

3. Legal Framework Supporting Green Innovation

Despite the considerable capacity the Med area comprises, some challenges impede the transition towards a greener future and in achieving the Agenda 2030 goals. The lack of green industry laws that sponsor green marketing and support green innovators is a basic one. With the introduction of the Agenda 2030, countries in the area have set their goals to achieve green growth through several sectors. To achieve these goals, plans and strategies have been placed that make the green shift feasible. Tunisia has set its strategic plans, as well as its National Adaptation Plan (NDC) to mitigate climate change and support a sustainable framework in the country.⁴⁰ Egypt, in a similar approach, has had its own perspective in the Sustainable Development Strategy (SDS) - Egypt Vision 2030, and in 2020, it was the only country in the MENA region to establish a positive GDP growth rate.⁴¹ Furthermore, in 2018, Spain published its Action Plan for the implementation of the 2030 Agenda.⁴² In addition to the countries' local plans and strategies carried out, regional tactics have been scheduled, such as the Mediterranean Action Plan, the EU Neighborhood Policy (ENP), and the SOED. The support necessitates constructing a base for green inventions to build upon. Attaining a sustainable lifestyle cannot only be achieved by placing strategies and plans; instead, there is a demand to initiate laws that protect the environment and incentivize eco-friendly actions. Legal frameworks are indispensable for the safety of environmental implementations. Plans and agendas issued by Mediterranean governments that target this domain are many. In case of Lebanon, the government has issued a number of laws that target the green sector for the protection of the environment in Lebanon by developing a National Adaptation Plan, which will serve as a framework for integrating climate adaptation into the country's governing structures. In addition to the above, some of the environmental incentives that support the green sector are **the National Energy Efficiency and Renewable Energy Action (NEEREA)**: It was signed between BDL and UNDP on March 2,

2010, to encourage energy efficiency and renewable energy use by private sectors, commercial banks, public entities, and international organizations.

The Lebanese Environmental Action (LEA): It covers projects related to recycling, landscape, organic products, green roofs, eco- tourism, and green walls.⁴³

Law 78/2018 on the Protection of Air Quality

In 2018, the Lebanese Parliament enacted law 78, dated 19/04/2018, on the Protection of the Environment. The law comprises 34 articles related to ambient air pollution, monitoring air pollutants, assessment of their levels in the Lebanese atmosphere, prevention, control and surveillance of the ambient air pollution resulting from human activities.

Law 78/2018 on the Protection of Air Quality

In 2002, the Lebanese Parliament enacted law 444, dated 29/07/2002, on the Protection of the Environment. Of importance is section V of law 444 on the protection of environmental resources, where by chapter 1 of section V relates to the protection of air quality and control of unpleasant odors. Specifically, article 24 prohibits every interest of public, natural or legal person, to cause any emission or leak of any pollutant to the air environment and states clearly that emissions shall not exceed the limit values of environmental quality standards including NAAQS. Article 25 states that emissions from the burning of any kind of fuel or others in industry or energy production facilities or for any other purpose shall remain within the allowed limits.

Law 150/1992 bans the import of cars whose date of manufacturing exceeds 8 years.

ME's Decision No.9/2000 reforms and organizes Land Public Transport sector in Lebanon and proposes a reduction in number of public transport vehicles.

Law 341 dated 06/08/2001 calls on the reduction of air pollution from transport sector and encourages the use of less polluting fuel.

Decree 8442/2002 defines standards for gasoline and diesel oil used in vehicles including their Sulfur content.

Section III: Green Innovation, Intellectual Property and Commercialization

1. Intellectual Property Rights Definition

Intellectual Property refers to the creations of the mind, such as inventions; literary and artistic works; designs and symbols; names and images used in commerce, as per WIPO.⁴⁴

IP is the product of the human intellect including creativity concepts, inventions, industrial models, trademarks, literature, symbols, names, brands, etc. Intellectual Property Rights allow the owner to completely benefit from the product which was initially an idea that has developed and grown. They also entitle the idea-holder to prevent others from using, dealing, or tampering with the originality without prior permission. The owner of the product can in fact legally sue the illegitimates and force them to stop and compensate for any reparations.⁴⁵

The topic of intellectual property is of great importance in terms of being related to a sensitive issue. Furthermore, the enormous developments in the fields of technology and innovations, which result in the emergence of new and advanced means of exchanging knowledge in easy and effective ways, increase the importance of the topic.

Intellectual property is a recognized creation that responds to intangible things such as industrial, literary, and artistic properties, where the emergence of these rights has an impact in confronting the takers and has credit for saving innovators, authors, and researchers from the robbery of their rights and looting them publicly, which, in the past, had seldom protection.

The importance lies in the fact that countries' correlation nowadays to the field of intellectual property is increasing due to the role it plays in revitalizing the movement of the global economy and the significant financial income it achieves. The subject of intellectual property also emerged through the attention that has been given to it by economic, political, social, and law scholars.

The industrialized countries have been interested in the issue of intellectual property rights. On the scientific and practical levels, researches and books have been added, and study programs have been initiated in universities and institutes about this subject. Hence, attention to intellectual property rights has become an urgent national necessity, especially in the light of an advanced agricultural, commercial, and industrial era, driven by machines and controlled by technology. IP constitutes one of the most dynamic joints in commercial law and global commercial markets. Although in Lebanon it is still

somehow archaic, it has been a general source for the protection of innovations, as evidenced by the renewal movement in legislative texts in recent years around the world.⁴⁶

Given the increasing importance of intellectual rights, the WIPO has called on all countries to authorize laws regulating these rights in order to encourage innovative and creative activity.⁴⁷ The European Union Intellectual Property Office (EUIPO) is responsible for managing the EU trademark and registered Community design, working with IP offices in member states, registering each year 135,000 trademarks. However, now the shift is happening to ecological economics, identifying limited resources, in-order to accelerate sustainable innovations and transition to SDG goals of Agenda 2030, so that investments will be commissioned and competitive advantage gained through enabling technology transfer.

The power of IPR is prominent through enabling its holder to ban other people from copying or using their IP innovation or invention without their authorization. In its turn, it generates a chance for the innovator to make revenue from their invention by charging for their IP. Taking into account the green novelty, such revenues can help advance the R&D funds leading to business growth and generating jobs in the society. The effect of integrating IPR into green technology possesses different effects on the tertiary levels, mainly the environmental, the social, and finally the economic.

Attaining *a low carbon future* will not be an easy step if not accompanied by the encouragement of green inventions. Increasing access of eco-friendly projects into IPR will in turn produce durable profit in the economy that will be inverted as sustainable services that guide into the circular economy model. Moreover, the necessity on this topic lies behind its deep effect on the society. Not only do sustainable initiatives produce new hires, but they also enhance the wellbeing of the social fabric. According to the World Health Organization (WHO), "Air pollution is a major environment- related health threat to children and elderly and a risk factor for acute and chronic respiratory disease."⁴⁸

Pollution is not limited within the borders of a certain country. Thus, inducing green advancement in one country has to imply effects on the global level, leading to a worldwide interest. As IPR is a promising way to boost green business conception, it is vital to start the beginning steps to integrate it in the green field.

In addition to the global pollution the world is combatting, an international economic crisis resulted from the COVID-19 pandemic. This has called for recovery strategies to aid the situation. Mediterranean

countries, in their turn, have started putting plans and policy measures that stimulate the retrieval. However, despite the fact that COVID- 19 has affected world global health and economy negatively, it has provided an unprecedented break for the environment. Although COVID caused a rise in health trash, however, due to lockdown, nature has experienced a breathing space from human activities. This signifies the importance of this stage in recovering sustainably.

In this approach to retrieve back life, the European Union Intellectual Property Office (EUIPO) initiated the European Union Fund for small and medium enterprises in Egypt to safeguard their IPR and aid their recapture from the emerging Corona Virus pandemic. Furthermore, the green digital transformation for the next years till 2024, will be supported by a budget of 47 million euros setting prominent goals of sustainable development and green banking. The strategy of this project is based in indicating the challenges available, making use of experiences, regulating future strategies and setting up an independent department for sustainable development in future banks.

Besides the EUIPO, the International Conference on Intellectual Property Development and Innovation in Green Technologies, that took place in November 2021 at the initiative of the World Intellectual Property Organization (WIPO), emphasized the vitality of sustainable development goals by embracing innovative green policies. The conference highlights the importance of patents and other incentives in the development of innovative green technologies, as well as the support of green technology firms, particularly SMEs, in their Intellectual Property Strategy. The common future of the region will be shaped by considerations about which sectors these flows will go into and if green jobs and renewable energy will be favored over sustainable business.

Meanwhile, the Contracting Parties to the Barcelona Convention and its Protocols are making important steps. The UNEP/MAP- Barcelona Convention system can support the generation of the green renaissance through:

- Increasing Knowledge aiding evidence based policies development

Multiple reports and assessments are being published in order to raise the awareness about the environmental topic. The SOED report, produced by Plan Bleu, explains insights about the causes of environmental challenged noticed in the Med region. The first Mediterranean Assessment Report

(MAR1), which is a science policy interface that UNEP/MAP support, will be introduced by the Mediterranean Experts on Climate and Environmental Change (MedECC). These reports will create a common credible knowledge base that guides social activities in their green transformation.

- Monitoring and Assessment

In order to develop coordinated environmental data, the UNEP/MAP developed the Integrated Monitoring and Assessment Program (IMAP). IMAP, which was adopted by the Contracting Parties to the Barcelona Convention in 2016, is revolutionizing the way environmental data is collected and processed. Using a set of indicators based on the Ecosystem Approach, IMAP improves monitoring capacity for assessing the impact of future development paths on the Mediterranean marine and coastal environment.

- Adaptation to Climate Change where Land and Sea Meet

The Mediterranean region is considered a prominent environmental site. It is rich with more than 510 million people with one in three living in the coastal areas. This stresses the coasts and causes urban pressure, which calls for immediate strategies to help solve the problem. The Integrated Coastal zone Management (ICZM) Protocol of the Barcelona Convention sets and essential legally binding instrument that safeguards the coastal zones. PAP/RAC also supports national climate change adaptation initiatives that strengthen the climate change resilience while leveraging the blue economies potential.

- Defending the Mediterranean's Endangered Wildlife

Ecosystem integrity can help regulate illnesses by sustaining a diversity of species, making it more difficult for one pathogen to spill over, magnify, or dominate, according to one of the lessons learnt from COVID-19. The Contracting Parties to the Barcelona Convention have established a growing network of Specially Protected Areas of Mediterranean Importance (SPAMIs), totaling 1,233 Marine Protected Areas, by restoring the health of stressed ecosystems and halting the relentless encroachment on the marine and coastal environment (MPAs).

- Creating the conditions for a productive and sustainable circular economy

The Conceptual Framework to Guide the Development of Sustainable Business Models was recently given by SCP/RAC. The framework is the latest in a long series of rules and instruments aimed at replacing the unsustainable linear model of "take-make-dispose" with a thriving circular economy.

- Ensuring that shipping does not jeopardize ecosystem health

Air quality degradation, oil and chemical pollution, marine trash, and the introduction of non-indigenous species are all consequences of maritime traffic.⁴⁹

In the past years, the phenomenon of some countries appropriating bio-piracy and green washing to obtain patents has spread.

Since the protection of these alleged innovations through patents constitutes a threat to the biological wealth of countries - especially for developing countries - and includes an attack on indigenous knowledge, it is permissible, in application of the provision of Article 27 (2) of the World Trade Organization (WTO).

Perhaps the statement that 'some developing countries have been subjected to occurrences' shows the extent of the seriousness of this phenomenon and the importance of addressing it to prevent breaches and occurrences.

At the beginning of August 2021, the Intergovernmental Panel on Climate Change (IPCC) released a report stating that climate change is "widespread, rapid and intensifying". The report, prepared by scientists across 66 different countries, has been described by the United Nations (UN) secretary-general as a "code red for humanity". This report came only three months before the UK hosting COP26, a summit bringing parties together to accelerate the action needed to meet sustainability targets worldwide. Climate change and sustainability is becoming an ever more prioritized point on corporate agendas as governmental, regulatory; investor and consumer focus heighten. It is an issue that affects businesses from all industries, sectors, and territories. It is important for businesses to consider the importance of Intellectual Property (IP) while undertaking their sustainability journey and some of the current issues arising in relation to 'green IP'.⁵⁰

IPR allows companies to attain earnings on their expenditure in money, time and energy induced to evolve eco-friendly outputs, but it also enables innovators and entrepreneurs to utilize an innovation on non-commercial terms.⁵¹

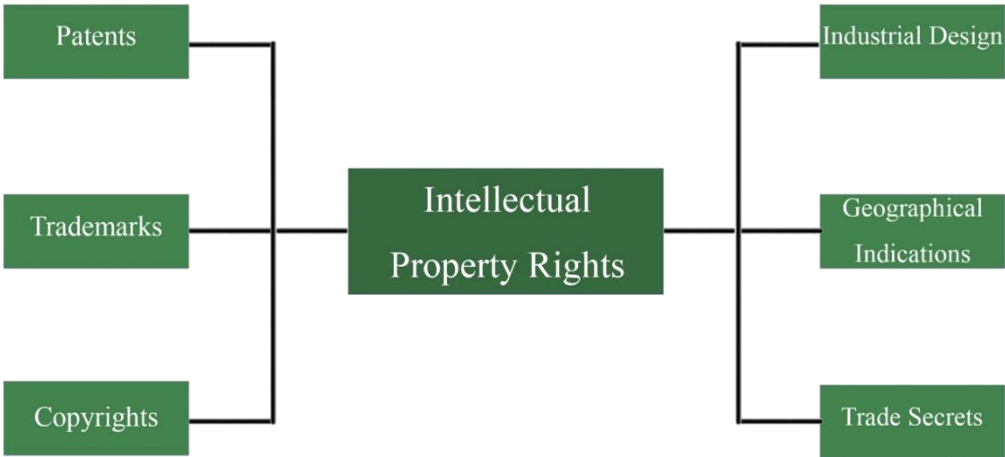
“IP Rights encourage innovation and creativity in all areas, including the development of eco-friendly technologies, products and services”.⁵²

Green IPR has had its positive role in capturing firm-driven “markets for technology”.⁵³ For small firms, patents do appear to play a positive role in attracting venture capital, particularly in the biotechnology industry.⁵⁴ This positive impact can be reflected on the green sector by integrating IPR in it. Recent documents explained how IPR can be adapted to green technology.

Copyright can also play an important role in protecting green technologies such as software and algorithms, and the data produced from such technologies. Software can be central to a business’s sustainability journey, from helping to evaluate, measure and record emissions to improving existing technologies or creating new technologies.⁵⁵

2. Types of Intellectual Property Rights

The main types of the intellectual property rights are: patents, trademarks, copyrights, industrial design, geographical indication and trade secrets. Following the type of invention, as well as the type of protection the green innovator requires can be classified into one of these types.



2.1. Patents and Trade Secrets Translation in Green Economy

1. According to WIPO, a **patent** is an exclusive right granted for an invention. In other words, a patent is given to a product or an invention that, in general, introduces a new way of doing something or a new technical solution to a problem. In order to obtain a patent, special conditions must be applied and the application must give full technical details about the invention.
2. Patent applications and patents are published to the public.
3. For a limited time, the patent holder possesses the legal right to prevent others from creating, using, selling or importing an innovation.
4. The duration of the protection available is usually 20 years from the application's filing date.

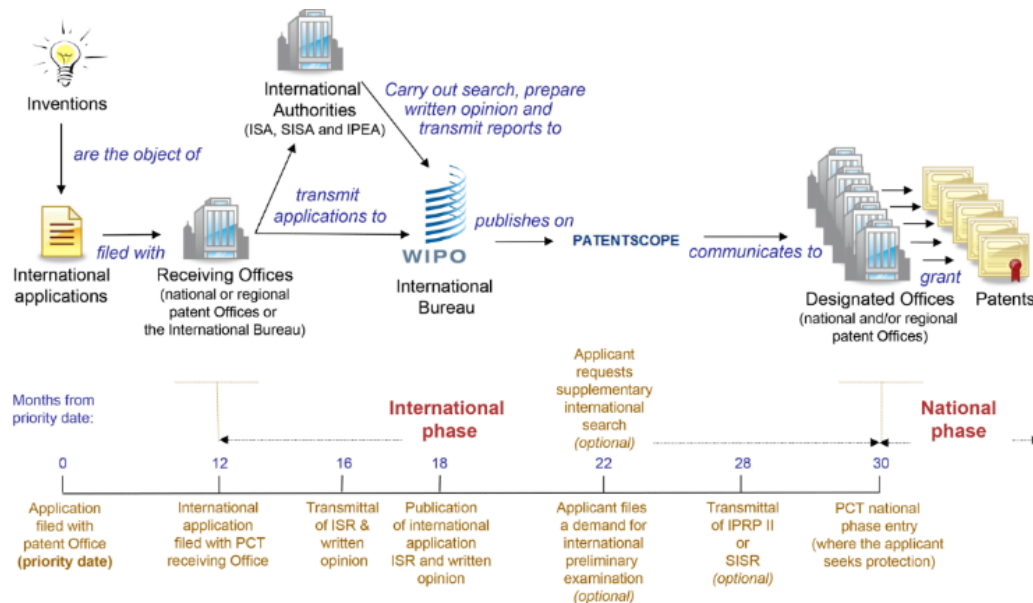
The importance of patents lies in the fact that:

- A- It promotes invention through the recognition of investors, allowing them to achieve economic rewards.
- B- It obliges innovators to fully provide the technical details of their novelty invention and publicize it once approved, which generates inspiration to other developers to progress the innovation process.
- C- PATENTSCOPE, for instance, is a WIPO patent database that allows users to search over 78 million patents for free, which is vital for the generation of new technologies, as well as diffusion and adaptation of current available technologies.
- D- Patents can also help spread new green technologies and create green enterprises by facilitating patent licensing, knowledge transfer agreements and non-commercial licenses.
- E- In relation to green technology, patents can aid developments targeting global environmental challenges according to the report presented by the International Association for the Protection of Intellectual Property (AIPPI): Patents are already supporting the transition towards a green future through providing new energy resources (solar, wind and wave energy), promoting the development of new and improved energy storage technologies (batteries), delivering more efficient light systems (LED lighting), and other non-polluting and resource- efficient technologies

that allow for improved waste management and recycling operations, maximizing resource efficiency and minimizing environmental harm.

In order to develop green intellectual property principles, every effort must be made to spread cultural awareness in this regard and intensify advertising and orientation campaigns. In all cases, it must be noted that the absence of legal protection does not encourage inventors, creators and authors to research and create, but rather propels the creative forces of the nation to travel to countries where their rights are protected and supported.

Overview of the Patent Cooperation Treaty (PCT) System



Trade secrets lie as an alternative to patents. Businesses from various economic sectors, including the clean technology sector, rely on trade secret to protect their invention. Small and Medium sized enterprises, in particular, rely on trade secrets to secure their data for many reasons. Trade secrets have unlimited time, unlimited subject matter, don't have registration costs and are immediately effective.⁵⁶

2.2. Industrial Design Rights in Relation to Green Novelty

Designing products that are environmentally sustainable is indispensable for seizing the green shift. Design rights are essential for the development, commercialization and adoption of clean technology and related products and services. Design rights protect the aesthetics of a product (shape and form), which may be registered or unregistered relative to the country concerned.⁵⁷

2.3. Trademarks

Brands include trademarks, company names and domain names. By utilizing brands, companies can establish a market reputation. Further information about brands and how to develop them will be shared in green innovation commercialization below.

Trademarks describe a word, slogan, symbol or combination thereof. Innovative shapes, colors, logos and packaging styles can all be trademarked. In relation to the green industry, in many cases, adding the word “Eco”, “Green”, or “Enviro” can be used to inform the customer that the product is environmentally friendly. Additionally, certification marks, subtitles under trademarks that assist in fostering green credentials of a company, help identify that the product complies with published standards related to health, environment or safety. There are several products on the market that may bear the phrase “environmentally friendly product” but in reality, they are not; this is called green-washing. The consumer must always ensure the quality and source of the products in a clear manner⁵⁸.

2.4. Geographical Indications

Geographical Indications (GIs) are marks used to designate items, quality traits, and /or reputations firmly related to the place where they are made. GIs can play a vital role in enduring sustainable production standards, in addition to providing consumers with an assurance of product authenticity and provenance. The producers who own the GI together determine these standards. Examples of GIs are Olive Oil Teboursouk (Tunisia) and Peach Bekfaya (Lebanon).⁵⁹

2.5. Copyrights

Maps, drawings, architectural works, software programs, databases, pictures, and audiovisual works are all protected by **copyrights**. Copyrights ascend under the Berne Convention for the Protection of Literally and Artistic Works (1886).⁶⁰

3. WIPO GREEN

WIPO GREEN is a public-private partnership established in 2013 by the World Intellectual Property Organization (WIPO). It is an online platform for technology exchange that supports global efforts to address climate change by connecting providers and seekers of environmentally friendly technologies.

Through its database, network, and events, WIPO GREEN brings together key players to catalyze green technology innovation and diffusion.

A review of WIPO GREEN's 5-year implementation strategy for the years 2018 - 2023 found that the actions and activities taken so far have been useful and relevant to users and contribute to achieving strategic goals:

GOAL 1: Link green technology providers and those seeking solutions in a targeted manner, catalyzing and maximizing the potential for green technology transfer and diffusion.

GOAL 2: Accelerate access to green technology innovation opportunities for countries at all levels of development.

GOAL 3: Support member states to leverage IP and innovation in global efforts to address major policy issues related to climate change, food security and the environment.

Moreover, the Southern Mediterranean region faces different environmental problems such as water scarcity, arable land depletion, air pollution, inadequate waste management, loss of biodiversity, declining marine resources, and degradation of coastal ecosystems. Despite the significant impact of these threats on the quality of life of the population, they are still not consistently part of the development strategies. South Med public policies are predominantly focused on salient threats to development such as high unemployment (especially youth unemployment), poverty, income inequality, limited intergenerational mobility, food insecurity, political instability, and military and social conflicts. The current situation limits public policy in implementing widespread environmental instruments requiring alternative approaches. Among the latter, promising solution is offered by

GreenTech startups, ecological initiatives that often take the form of small- and medium or social enterprises⁶¹. Technological opportunities are limited due to poor innovation capabilities. Thus, the Global Innovation Index 2020 ranks the South Med region from 65 (Tunisia - the best, most efficient in the region) to 121 (Algeria - the least efficient in the region) positions in the list of 131 countries.

The link between the public regulation and eco-innovations is not clear. While the majority of researchers have shown the positive relationship between the regulation intensity and the environmentally-friendly initiatives of firms, there is some evidence that does not consider this

relationship. The success of ecological public policy heavily depends on the type of implemented instruments, their stringency, coordination, and design in the view of particular characteristics of the economy. According to Climate Change Performance Index 2020, the efforts of the South Med regions lead to slight but mixed improvements in climate protection; only Morocco is ranked as a very high performer while Algeria and Egypt - as medium performers.

The entrepreneurs are facing lack of legal framework to create their enterprises as well as to tackle the ecological and social problems in question. The registration process is not clear and requires a lot of efforts. For example, there is no elaborated social entrepreneurship pathway in Jordan. Consequently, SE can be registered as an NGO by the Ministry of Social Development or as a company by the Ministry of Industry and Trade. Both options correspond to complex registration processes and are not adapted for an SE. Moreover, a status of a company is related to an unfavorable tax regulation.

4. How to Obtain a Green IPR?

The method of obtaining Green IPR, regarding patents and trademarks, is based on three main steps. First, in case of patent application, the invention must be compliant with the conditions provided. Second comes drafting the application, followed by the examination. The examination of the application is itself done upon 4 steps: examination as to form, search, examination as to substance, and finally grant and publication. In case of trademarks, the examination involves examination as to form, examination as to substance and finally acceptance or refusal which will be followed up by registration in case of acceptance. In addition to IPR registration, another type of certification that fosters green innovation is Eco-labels or green certification. Green certification is granted to products that meet environmental standards. Both IPR and Eco-labels generate a strong power that enhances a green invention.

4.1. Eco-Labels

Green Certification demonstrates the environmental value presented in the product, building, or energy produced. It proves that the invention has met environmental sustainability standards in its design, construction and performance. Product Labelling is a marketing tactic that helps promote markets with unique qualities. Labels act as a reliable and credible source that indicate the characteristics of the product. Eco-Labels are a specific type of certification that are granted to green products that meet the standards indicated by each label.

In order to get an Eco label, a product or service must exemplify its ability in decreasing the total environmental effect of its production or use by meeting a particular and a predetermined criterion. Therefore, Green Labels prescribe products that are more sustainable and eco-friendlier than conventional ones. Entrepreneurs, companies and industries develop Eco labels popularizing green production and consumption.

The essentiality of Eco labels lies in the fact that they:

- Stimulate sustainable innovation
- Catch the attention of the consumer, encouraged by that sustainable consumption
- Support the economy
- Reassign environmental improvement expenses ⁶²

The ISO classifies the types of green labels that denote products into three categories:

Type I	ISO 14024	For multi-attribute requirements, a seal of approval is given.
Type II	ISO 14021	Single-attribute environmental claims that can be verified for issues like energy use, emissions, or recycled material. First-party, self-declared manufacturer claims are possible. In response to industry demand, several manufacturers are beginning to seek third-party verification of their assertions.
Type III	ISO >14025	Environmental product disclosure is extensive, as is product information. An Environmental Product Declaration is a similar concept (EPD)

Many green certifications that imply particular standards are available. Some are single attributed and others are multiple- attributed. The following are the most used Eco labels present:

1- Single Attributed Labels



Energy Star focuses on energy consuming products. Appliances, heating and cooling equipment, lighting, home electronics, commercial roofing, and office equipment are among the Energy Star-certified products. Energy Star standards are generally updated and become more demanding every two years.

Water Sense aims to protect the future of nation's water supply by providing people with methods to decrease water by using water efficient products, new homes and services. Water Sense products that have earned the label must be at least 20% more efficient without missing performance.



Federal Stewardship Council (FSC) aims at encouraging responsible foresting and licensing resulting wood products. The placed standards are directed by the FSC, while certification is accorded by third parties such as the Rainforest Alliance and Scientific Certification Systems. Various standards for different forest products and different regions.

Similar to FSC, SCS Global Services is a third- party certification claims. SCS Global Services is responsible for recycled content, biodegradable liquid products, and no added formaldehyde products. SCS Global Services backs its certifications with strong and transparent standards. Indoor air quality, recycled content, and FSC chain-of-custody requirements with green building rating systems such as LEED.



2- Multi-Attributed Labels⁶³



Green Seal is a third-party certification and labeling scheme that encompasses a wide range of products with industry-specific specifications, including consumable items used in construction. When defining a standard, Green Seal evaluates a product's consequences across its full life cycle. Paints, adhesives, lighting, electric chillers, windows, window films, and occupancy sensors are among the building materials covered. Green Seal is mentioned in numerous LEED grading systems, including LEED for Existing Buildings in Operations and Maintenance.

Cradle to Cradle Certified framework promotes the use of safe materials that can be disassembled and recycled as technical nutrients or composted as biological nutrients, and the program provides assistance to businesses on how to adopt it. It evaluates a product's design and production practices as a whole. Each product's material and production procedure are evaluated in five categories: Material Health, Material Reuse, Renewable Energy Use, Water Conservation and Social Responsibility.



TCNA created Green Squared—Certification, which consists of one industry, one standard, and one mark, and covers all goods used in a tile installation. Green Squared examines product attributes, manufacturing, end-of-life management, progressive corporate governance, and innovation in order to provide sustainability criteria for products over their whole life cycle. Green Squared recognizes items that have been independently verified to meet the requirements of ANSI A138.1.

Green Guard is a third party certification and labeling organization that meets with California Section 01350. Green Guard ratifies that a product meets threshold for formaldehyde, total volatile organic compounds (VOCs), and one tenth of the threshold limit value (a regulatory benchmark) for many other compounds.



**For more Information on
Ecolabels, visit:**

<https://www.ecolabelindex.com/ecolabels/>

<https://www.wbdg.org/resources/green-building-standards-and-certification-systems>

4.2. How to Obtain Patents?

How to Obtain Patents?

Subject matters that are excepted from patency are as follows:

- Discoveries of materials or substances already present in nature
- Scientific Theories or Mathematical Methods
- Plants and animals other than microorganisms, and mainly biological processes for the production of plants and animals, other than biological and microbiological processes
- Schemes, rules or methods like the ones used for doing business, performing purely mental acts or playing games
- Methods of treatment for humans or animals, or diagnostic methods on humans or animals
- Inventions through which commercial use would be a violation of public morals and order

Patentable Subject Matter

The invention must be under the title of patentable subject matter identified by regulations and defined by exceptions to patentability.

Industrial Applicability

The invention must not be purely theoretical; it should be applied in a practical purpose. If the invention is a product, it must be able to make that product or if the invention is a process, it must be able to carry out this process or "use" it.

Novelty

Novelty must be emphasized; however, it is not something which can be analyzed and examined. Only its absence can be proved. An invention is considered new if it is not preceded in "Prior Art".

Prior Art" refers to all the knowledge that gave rise to the relevant filing or priority date of a patent application, regardless of whether it was disclosed in writing or orally.

Disclosure

The invention must be disclosed completely in the patent application, in a way that a person with skilled art can carry it out.

Inventive Step

Often referred to as "non-obviousness", it questions whether the invention would have been evident for a person having ordinary art skill. The protection should not be granted to what is previously known as "Prior Art" or what an ordinary person can conclude obviously.⁶⁶

Often, assessing the inventive step should be done on three levels;

- The problem to be solved
- The solution to that problem
- The advantageous effects, if available

4.2.1. Green Patents Incentives



Fast Tracking

Green Patent

Application

According to WIPO, Intellectual Property systems, particularly patent laws, are among the most essential regulatory tools for fostering technological innovation. As a result, a number of national IP offices have implemented policies to expedite “green” patent applications.

Eligibility Requirements

Determining which patent applications are eligible for the fast-track programs is determined by eligibility standards. Subject matter eligibility, in particular, identifies the types of green technologies that are appropriate for rapid view. The type of green technologies accepted for fast examination can vary among countries.

How to Request Fast Tracking of Your Patent Application?

Submit a letter to the responsible patent office that includes;

- 1- A request for an advanced examination
- 2- A statement showing that the application describes a technology that when implemented will help alleviate environmental challenges or conserve natural resources
- 3- An early laid open date. It is only required if the request is made before the application has been made public (usually 18 months after the filing date)⁶⁷

4.2.2. Drafting a Patent Application

STEP
01

Identifying the Invention

- Enumerating all of the necessary characteristics, that when combined, solve a certain technical challenge
- An assessment of this combination to see if it meets the patentability standards, particularly the inventive step requirement, in opinion.

What if the invention contains multiple new features?

It is crucial to identify the critical feature or

features and explain why they contribute to an effective solution to the problem.

This is due to the fact that, the claims should be as broad as possible. Moreover, after identifying the important elements and their effects, it's time to consider how else this effect can be achieved.

Drafting a
Patent
Application

STEP
02

Practical Features of Identifying a Patent Application

Despite the fact that drafting practices and requirements vary among countries, there are three main common steps,

1

“**Unity of Invention**” is very critical. The application must pertain to only one invention, or a series of ideas that are sufficiently related to create a single broad inventive notion.

2

The description should reveal the invention **in a clear and thorough way, in such a way that a person with ordinary skills can evaluate it and carry it out.** This is important because one of the description's key responsibilities is to convey new technical information to other parties.

3

The application must include claims that define the extent of the protection. The statements must be precise and succinct, and the description must back them up completely. In this way, third parties can learn what they are allowed to do and what they are not allowed to do based on the claims presented.⁶⁸

4.2.3. Sections of a Patent Application

Sections of Patent Application

Section 1

Contains:

- The title of the invention
- Brief indication of the technical field in which the innovation is included- It is mentioned in the opening of the paragraph that begins with “This invention relates to...”

Section 2

Section 2 is critical to understand the invention and compare it with prior art. It contains the background of the invention is discussed. In this part, the patent agent lists:

- Existing problems and challenges that the invention solves. Solutions to the addressed problems that were priorly available must be mentioned, in a form that distinguishes the earlier solution from the new presented ones.
- A description of the invention’s goal, or what the invention intends to accomplish.

Section 3

Presents a summary for the invention in such a way that it can be easily understood.

- The patent agent will begin describing the invention in broad words that match to the language they wish to employ in the primary claim. The agent can avoid any conflicts that may occur as a result of differences between the invention reported and the invention detailed in the claims.
- This basic explanation is followed by a series of paragraphs describing the innovation various desirable features.

Section 4

Two aspects are often present.

- Brief description of the drawings, in case illustrations are relevant
- Comprehensive description of one or more embodiments of the invention

In case the invention is mechanical, drawings depicting the object’s plan, elevations and sectional views could be used.

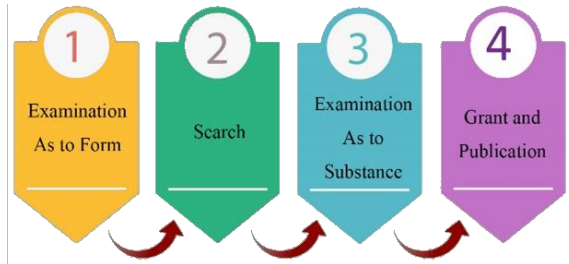
In case the invention is an electric circuit or something related to it, drawings can be utilized successfully to demonstrate the connections between the various elements or components of an electric circuit.

In case the invention is chemical or related to the chemical field, the drawing can be the chemical formula of one or more compounds.

In case the invention is related to metallurgy, the illustration may be a diagram such as phase diagram of the components.

- For convenience of reference, these elements or components should be numbered again.
- Usually, no text should be included in the drawings. Few exceptions are allowed, for example, single descriptive phrases can be utilized without interfering with the lines of the pictures.

4.2.4. Examination of a Patent Application



STEP 01

Examination As to Form

- Once the application assigns a filing date, it is usually subjected to 'examination as to form'.
- Mainly, this stage includes the following points,
 - The representation by a patent attorney
 - The contents of the request
 - The statement concerning the inventor
 - The physical requirements governing the description
 - The claims and the drawings
 - The inclusion of an abstract
- The applicant is given a chance to fix any errors discovered during the form assessment, and if those defects are not addressed within a certain amount of time, the Patent Office will reject the application.

STEP 02

Search

- The goal of the 'search' step is to determine the "prior art" the targeted field of application. It is done by the Patent Office, as they collect their database to check if there are any documents that detail a solution that is the same or similar to patent's application.
- The search will be undertaken independently from and before, or at the same time as, the examination as to substance, according to the examination procedure stipulated in the relevant statute.
- If the 'search' is done separately from the examination to substance, the applicant will receive a search report that includes the following,
 - A list of documents found during the search that reveal the same matter that reveal subject matter very similar to the invention
 - Claims in the application that must be juxtaposed with each of these documents
- In addition to the above, the report may also provide the scope of research, in other words, the type of documents that have been researched, the time span covered.
- The collection of documents in the search step is often referred to as "the search file". The Patent Office searches documents relevant to the search file, and in some cases, the Patent Office conducts an online computer search and they may use the internet as well.

STEP 03

Examination As to Substance

The purpose behind the examination as to substance process is to ascertain that the patent application meets specific patent requirements. This is done in an attempt to preclude the issue of a patent in the following situations:

- The invention is not original, does not reveal an inventive step or not industrially applicable.
- The invention is not explained clearly and completely in the disclosure in the documents presented.
- Specific provisions in the legislation exempt the invention from the patent protection.

Similar to examination to form, in the examination to substance, the patent agent has the ability to pull out any protests raised. However, if he/she fails to do that, the Patent Office will reject the application.

The ability to alter the application is of particular importance for both the patent agent, as well as, the public, since it results in a better patent grant. However, not all alterations are confirmed, in case changes go behind the original disclosure topic it will be rejected.

STEP 04

Grant and Publication

Finally, when the examination process has come to an end, and the results have shown satisfaction in all three steps, examination as to form, search and examination as to substance, as well as no opposition to the topic has been presented, the Patent Office will grant a patent on the application. This step involves the following actions:

1- The details of the patent are put into the Patent Register, after it is awarded. The Patent Register includes normally includes the following,

- | | |
|--|---|
| - The Patent number | - The applicant/patentee's name |
| - The inventor's name | - The original application number |
| - The filing date | - Certain priority application details |
| - The title of the invention | - Any licenses or assigns that have been recorded |
| - Fees that have been paid, in nations where annual fee payments are required to keep a patent in effect | |

2- The Patent Office publishes a reference to the patent grant in an official Gazette, together with the required bibliographic data. The abstract or principal claim, as well as the most illustrative drawing, may also be included on the Official Gazette entry.

3- The applicant receives a Certificate of Grant, which is a legal document proving their patent ownership. Concurrently, a copy of the awarded patent is rewarded.

4- Finally, a patent paperwork is usually published in printed form by the Patent Office. Specific types of patent applications are published electronically instead of printed, mainly when the patent includes sequence listings, or a large number of pages.

The Patent Office creates copies from the granted patent to libraries etc. as a source of technical information. Third parties who pay fees can also have a copy from the patent document.

In many cases, offices make the application public 18 months after the priority or filing date.

70

4.2.5. Patent Fee Payments

The fees payable in connection with an international patent application under the Patent Cooperation Treaty (PCT) System vary according to the receiving office, international preliminary examining authority and international searching authority chosen when filing an application.

Renewal fees vary from one country to another according to the system adopted in it and according to the duration of protection. The costs vary considerably from country to country (and even within a country). As the official fees vary widely from country to country, you can contact the relevant national or regional patent office which will be able to give you details on the fee structure.

Patents are territorial rights. In general, the exclusive rights are only applicable in the country or region in which a patent has been filed and granted, in accordance with the law of that country or region. The cost of patenting an invention depends on factors such as the nature of the invention, its complexity, patent attorney's fees, the length of the application, and possible objections raised during the examination by the patent office. Some countries offer discounts to small and medium-sized enterprises and applicants filing the application online. In addition, some countries allow expedited examination upon payment of additional fees.

In addition to the national official filing fees, once a patent is granted by the patent office, maintenance or renewal fees are paid, generally on an annual basis, to maintain the validity of the patent. In case your invention needs patent abroad, consider the relevant official filing fees for each country in question, the translation costs, and the costs of using local patent agents, which is a requirement in many countries for foreign applicants.⁶⁹

4.3. How to Obtain Trademarks- General Notes

Note 01

Applications for trademark registration must be filed with the proper government entity, which in most countries it is the same authority responsible for processing patent applications. The term “Industrial Property Office”, “Patent and Trademark Office”, “Intellectual Property Protection Office” or “Trademark Office” is commonly used.

Note 02

Certain nations provide an application form with the required details to be filled out.

1. The applicant’s name and address must be indicated in the application form.
2. In case the applicant is applying in a foreign country, he/she must put the address of the service country or utilize an agent that holds the power of an attorney signed by the applicant.

Note 03

The sign that is being registered must be included in the application form or an appendix to it must be mentioned.

Note 04

→ In case the sign intended to be registered is in color, the colors must be revealed and either a color specimen or a description of the color(s) must be given.

→ In case the sign intended to be registered is 3-dimensional, it is critical to specify that the form must be safeguarded in three dimensions. Furthermore, the sign must be graphically portrayed in such a way that it can be copied. This is because of two key factors:

- 1- Having the option of registering it. (independent of how registering is setup, in other words, whether the marks are written in a book, collected in a card index, or integrated into a computerized system)
- 2- Prior rights holders must be able to notice the trademark application, which is normally accomplished by posting it in a trademark journal.

Note 05

The applicant must list the commodities for which the sign will be registered. For the purpose of registration, trademark regulations require a classification of commodities. In certain nations, each class requires its own application, whilst in others, one application is adequate for several classes.⁷²

The Trademark Law Treaty (TLT) offers a comprehensive list of information that Contracting Parties’ Trademark Offices may request for trademark registration.

The TLT also contains Model International Forms, which must be accepted by Contracting Party Offices and must contain all the needed information.

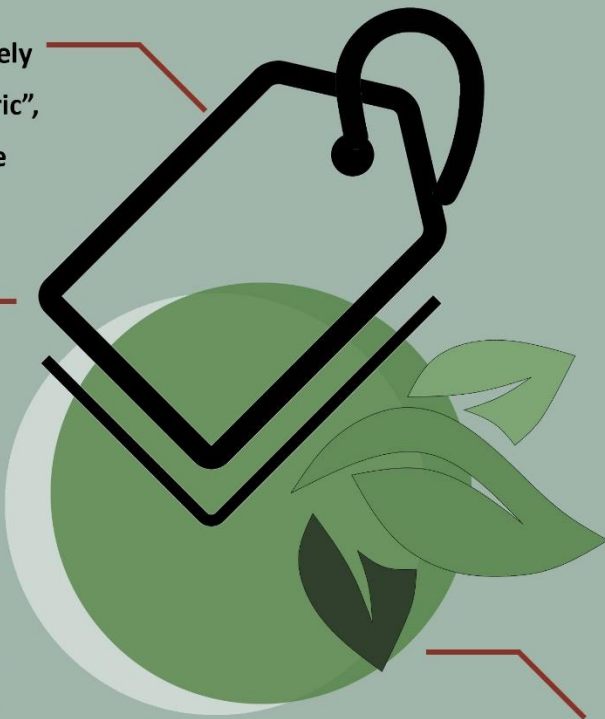
The Nice Agreement on the International Classification of Goods and Services, for the Registration of Marks, sets up an international assortment of goods and services required for trademark registration.

GREEN TRADEMARKS

In certain cases, a trademark is refused to be registered, if it is an “adjective with any good or service... that interprets that this good or service is environmentally friendly”

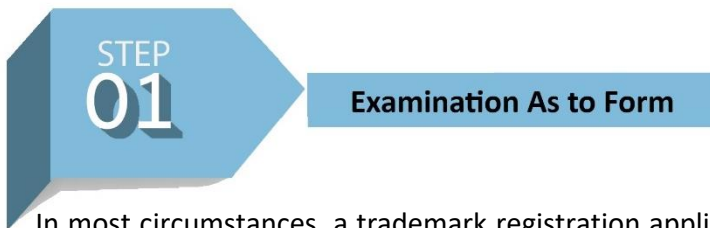
The word “eco”, “green” are considered as “merely descriptive” and “generic”, which doesn’t make the trademark distinctive.

“In re Cenveo” submitted “GREEN-KEY” and design (environmentally friendly key cards) as a trademark name, however, the trademark application was denied because the word “green” was considered generic.

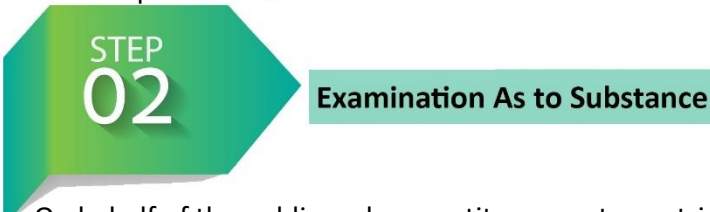


Likewise, in cases like In re Bargoose Home Textiles, Inc. including hypoallergenic/ecologically friendly bedding known as "ALLERGYGREEN" and In re Calera Corp. involving environmentally friendly cement known as "GREEN CEMENT," the rejected marks were because they were merely descriptive or generic⁷³

4.3.2. Examination of the Trademark Application



In most circumstances, a trademark registration application will be approved only if all of the formal requirements are completed.



On behalf of the public and competitors, most countries assess trademark applications for substance.

In general, three common techniques can be observed:

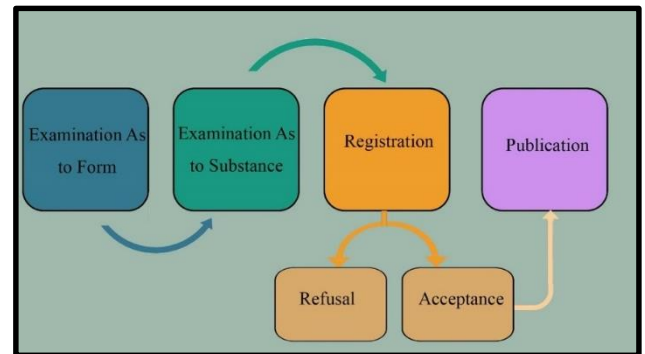
Method 1: The British program, which involves an assessment of the office for absolute and relative grounds, as well as an opposition mechanism. This approach is used in Europe by countries such as Portugal, Spain, and the Nordic countries.

Method 2: The office only searches for absolute grounds; the Act lacks an opposing mechanism, leaving the owner of older rights to file a cancellation or infringement action against the registration or use of a more current sign. Before both France and Switzerland integrated opposition procedures into their present trademark rules, this strategy was used in their previous trademark laws.

Method 3: The German one, which provides a thorough examination by the office as well as an administrative opposition mechanism via which the owner of prior rights can easily and inexpensively dispute the infringing trademark application. This method is a compromise between the two more extreme methods previously outlined, and it follows a contemporary trend mirrored in the European Community Trade Mark system.

Industry prefers the latter technique since it is less time-consuming and more adaptable. Given the huge number of trademarks on national trademark registers around the world, doing a search for prior rights is always recommended before applying for trademark registration, and much more so before commencing to use a trademark. Most applicants conduct such searches on a regular basis, and businesses have at least their most important registered trademarks monitored to stay informed of applications for registration of potentially conflicting similar marks, either by their trademark agents or by one of the international trademark monitoring services.

In principle, the registrar's standards for determining whether a trademark application should be refused due to a prior right are the same as those used in an opposition procedure or by a judge in an infringement action, though the facts of the infringement will play a larger role in the latter case.



STEP 03

Registration

In case of refusal,

1. Before issuing a total or partial refusal of the application, the office must give the applicant an opportunity to submit observations.
2. An application's denial, in part or in whole, must be appealable.
3. Depending on the legal structure of the country, the appeal may be filed with the registrar, an administrative appeal board, or the court.

In case of acceptance,

If the application is approved, the owner receives a certificate from the office. From the date of registration, the owner has an exclusive right. The primacy of the right, on the other hand, should go back to the date of registration. While the application is not generally sufficient to commence an infringement case against a subsequent right, it must be sufficient to initiate an opposition procedure. Even more importantly, the date of the registration application will be crucial in a subsequent court case. The time it takes for an application to be processed and registered varies greatly, and in some situations might be extremely long. For a variety of reasons, submitting an application later can result in registration being completed sooner, for example, if the examiner rejected the previous application. Clearly, with relation to the owner of a later application, the owner of the earlier application must have the prior right.

Furthermore, under Article 4 of the Paris Convention, the applicant can claim priority of his national registration provided the application in the foreign country is filed within six months of the original application's filing date.

STEP 04

Publication and the Access to the Register

1. The important data in the register, such as applications, registrations, renewals, and name, address, and ownership changes, must be published in an official gazette. This is crucial for holders of prior rights as well as the general public. This allows previous rights holders to take the appropriate actions, such as filing an opposition (if one is allowed) or a cancellation action. The applicant's name and address, a representation of the mark, the goods grouped according to the classification system, the claimed colors, a statement to that effect if the mark is three-dimensional, and a statement to that effect if the priority of any other mark is claimed (Paris Convention, Article 4) should all be included in the publication of applications and registrations.
2. The trademark registration should also be accessible to the general public. The register must have up-to-date information, which includes all recorded data, including not only registrations but also the contents of pending applications, regardless of the media on which the data are stored, to guarantee that owners of prior rights are effectively informed.



Duration and Renewal



Because trademarks do not provide an exclusive right that might be exploited, there is no need to limit their validity. Trademark legislation frequently includes a time limit for administrative reasons; however, after the time limit expires, it is possible to renew registrations.

The office can collect a renewal fee, which is a desirable source of revenue and one of the reasons for the time constraints. Moreover, trademark registrations without a period limit would result in an unacceptable quantity of trademark registrations that would be of no service to their owners. Even if unused marks could be removed from the register, the process would be costly and time-consuming for the interested party, and it would not always succeed. Here, it is necessary to take into account the so-called famous brands whose reputation and fame exceed the borders of certain countries, for example, but not limited to, Coca-Cola, Pepsi-Cola, McDonald's, Kentucky Fried Chicken, and others. The protection prescribed for a well-known mark does not arise from its registration, but rather from the mere fact that it is well-known in the country in which it is intended to be protected, even if it is not registered. The Paris Agreement did not set criteria for measuring the popularity of a mark, but rather left that to the discretion of the administrative bodies or the competent judicial authorities in each of the member states of the Paris Union.⁷³

4.3.3. Trademark Fee Payments

The registration of a trademark necessitates the payment of one or more sets of fees. The cost of attaining a trademark varies depending upon the filing basis selected and which initial application form is used. Each of these filing options have specific requirements that impact the fee amount. There are certain factors used to calculate the filing fee for an initial application:

- Number of marks: Only one mark may be filed per application. If you have multiple marks, they require separate applications, each with its own filing fee.
- Number of classes: You must pay for each class of goods and/or services in the application.

5. Green Innovation IPR in the Mediterranean Region

Intellectual Property Practices in many countries of the Med region date back to the 19th century. For instance, the Lebanese IP law of 1924 was published under the French protectorate according to the

French statutes and precedent; Berne Convention was inserted into Lebanon by the Resolution No. 141 LR of 1934, and then was joined in 1946.

In Palestine, The Ottoman Copyright Law of 1910 was applied as a law that preserves the rights of authors and creators, following British copyright law which was applied as of 1924.

Tunisia has ratified many international agreements related to the protection of copyright, most notably the Berne Convention for the Protection of Literary and Artistic Works in 1886. Egypt joined the Berne Convention based on Resolution No. 579 of 1976.⁷⁴ Consequently, a number of countries in the Mediterranean area joined WIPO whereby they developed model laws targeting patent protection trademarks, trade names, and unfair competition. In 1979, a model law, served as a national law in some countries by WIPO, was used as a tool for legislative advice.⁷⁵ Following Article 7, the goals are the protection and enforcement of IPRs to effectively promote technological innovation/technology transfer. Moreover, TRIPS adopted broader policy goals for IP protection, balance rights and obligations.

IPR plays an important role in creative and innovative sectors of the economy. To study the status of green IPR in the Mediterranean region, a focus group was conducted along with a survey. The next part will share the results of the focus group with green innovation representatives from Italy, Palestine, Tunisia, Spain, Lebanon, and Egypt.

5.1. Focus Group with Mediterranean Country Representatives:

The Focus Group with the country representatives involved mainly 9 questions within 3 parts; 'First Part, Green Innovation IPR', 'Second Part, Developing IPR' and the 'Third Part, Commercialization Options'. The results are shared in appendix 1.

After the meeting was conducted, a common vision was shared about the vitality of developing Green Innovation Intellectual Property Rights as many green innovators and investors lack the proper information about that. However, different points of view were presented on this subject, as some representatives believed that the intellectual property rights must not block the innovation process by sharing helpful knowledge. Some believed that green innovation is essential in projects with high investment. Challenges faced by green innovators in Spain, Italy, Lebanon, Egypt and Palestine noted the absence of proper financing as well as lack of awareness among consumers. All the countries agreed on the absence of knowledge in the intellectual property sector. (For further information, check Appendix 1)

5.2. Green Innovation IPR Survey

A questionnaire was shared through country representatives to green innovators to assess the green IPR situation (to Lebanon, Egypt, Italy, Spain, Palestine and Tunisia in December 2021). The results showed that the number of registered green innovations are only 5% of the responded participants; 21% are still in the process, and 74% don't have IPR. 73% didn't know the filing steps, 21% know some steps, and 5% know all steps required to green IPR. This notion indicates the weaknesses available in this sector among green innovators in the Mediterranean region. It was essential to them to protect their innovation through patents, trademarks, and secrecy of their innovations.

Most tackled sectors were energy efficiency and regenerative agriculture. The least ones were sustainable transportation and sustainable education. In the medium array came three sectors which are in the process of growing: clean water and water conservation, eco-fashion and sustainable textile, and sustainable services.

Green Innovators responded that 32% seek advice in obtaining green IPR from legal authorities, 21% from local patent/trademark attorneys, while others, each around 10%, pursue guidance from licensing consultants, external/local solicitors, or external patent institutions.

As for commercial partnerships, 79% believed that promoting startups' penetration is essential to international markets. Connections and networks need to be enhanced, strengthening linkages between academia and industry to create specialized incubators. When green innovators were asked about commercialization models, the highest interest was in startups and entrepreneurship, and lower percentages were aiming to develop licensing (selling intellectual property) and establish new ventures.

(For more information, check Appendix 2)

The data obtained by the questionnaire signified the need to develop a common informative base that induces the vitality of intellectual property rights in supporting green development. Strengthening the information about this topic will promote green innovators to maximize advantageous use of their intellectual property rights and protect their inventions.

6. Green Commercialization

Emerging consumption trends are coming to light with the increased environmental concern, introducing a competitive feature among green businesses. By initiating, “a clear differentiation mark”, marketing of the green idea can be enhanced. The following info graphics explain the steps of the market access.⁷⁶



01
STEP

Brand Essence

Developing Your Brand
Essence and Positioning

1- Build your Sustainable Branding SWOT. (Strengths, Weaknesses, Opportunities and Threats)

2- Find your Sustainable Brand Space and Positioning.

3- Write a Sustainable Brand Manifesto.

Step 01: Sustainable Brand Space and Positioning

Mark your distinctive branding area to carve out those branding strengths that truly set you apart from the competition and position your long-term business in your clients' minds and hearts.

1. Draw a graph and indicate your top brand strengths on the horizontal and vertical axes and rate its importance on a scale from 0% to 100%.
2. Take a position in the quadrant.
3. Place your competitors in each quadrant.
4. If the field you work in is pretty much "overcrowded", consider questioning yourself, "what discriminates your brand from others"?

Step 02: Sustainable Brand Manifesto

You can convert your sustainable objectives into tangible and actionable, by drafting and sharing your brand

1. Use a mind map to brainstorm what your call to action should be.
2. Write down actionable issues that make you stand out.
3. Get input from your teammates, friends, and coworkers.
4. Explain why you exist and how it will better people's lives to the rest of the globe.



What is the Brand Essence ?

Concepts that each brand desires and may express. These values define, distinguish and remain constant through time.

What is Brand Positioning?

A brand's positioning strategy aims to make a distinct impression that can be easily distinguished by customers and the marketplace through offering something that competitors don't sufficiently address.

What is Brand Space?

Potential value domain of your brand, spanning all regions where your brand intends to go, projecting the consumer and your brand forward into those brand areas that are critical for customer growth and business success.

What is Brand Manifesto?

A written declaration of your beliefs, motivations, and ambitions. It expresses who you are, what you stand for, what you do on a daily basis, and what you want to achieve or become.

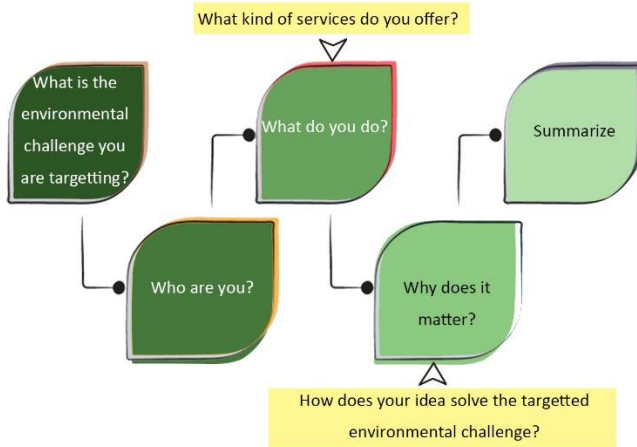
01
STEP

Brand Essence

Aligning Brand and Business Goals

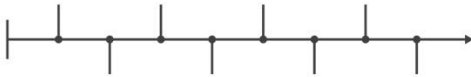
Integrate your mission into your sustainable brand essence.

Step 01: Implementing your Action Plan



Step 02: Reflect Your Journey on a Timeline

- 1- Remember all the important events that have led to this business point.
- 2- Examine the important players who had a significant impact on the outcome.
- 3- In a short paragraph, write down your origination story.



Best Practices:



What is a Brand?

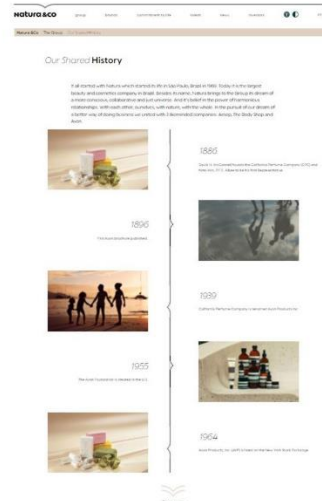
It is the name, term, design, symbol, or other features- or a combination of these- that distinguishes a maker's or seller's goods or services as different from those or others available in the market.

Sustainable Brands

Are companies or businesses that have managed to integrate the sustainability factors- environment, economy and society- into their business behavior.

What is a Brand Strategy?

Is the marketing practice of producing a name, symbol, design, words, or a combination of these that distinguishes a product from its competitors.



02
STEP

Bringing Your Brand to Life

Creating Your Visual Identity

Transform your brand's essence into a visual representation.

Best Practices



LOVE TO RIDE

In its visually appealing style guide, Love to Ride, a bicycle company, emphasizes color variation.

The brand standards for the corporation include nine color codes as well as a lot of information regarding the company's secondary logos and graphics.

What is the

Brand Style Guide ?

To assist you in the proper use of your visual brand elements, this reference sheet contains guidance on visual identity, language, templates, essential phrases, and approved statements. Ensures brand consistency throughout all promotional materials, visuals, and references to your brand, regardless of who generates them.

02
STEP

Bringing Your Brand to Life

Developing Your Narrative and Key Messages



Key Audience



Sustainable Core Messages



Story Telling Canvas

1. Segment your audience into three "personas":
 - a. Key stakeholders (early adopters or "brand aficionados")
 - b. Supporters (also known as "brand ambassadors")
 - c. The next generation of "brand believers"
2. Fill in the blanks for each of them.

Key Audience

Every brand requires a personality. Messaging is the language that your core audiences and prospects use to understand your long-term value offer. Core messaging express the promise and substance of your brand and pique interest in your green products and services.

1. Complete the three questions on the right side of the page.
2. Consider who you are, what your target audiences require, and how you would like to be described.
3. Write persuasive sentences that explain why it is important for your brand to enter your audiences' life.

Sustainable Core Messages

You may use the narrative canvas to create stories that will resonate with your audience. Stories are important to who we are, how we connect and relate to one another, and how we make sense of the world. Humans have been hard-wired to share tales since the dawn of humanity, from traditions and myths to the stuff we choose to share on social media.

Story Telling Canvas

What is Audience?

Formed by your target market, or the group of people you want to sell your products or services to. Personas are fictional profiles that depict groups of like people in your audience (e.g. core constituents, supporters, future brand believers)

What is Story Telling?

A type of marketing that focuses on telling stories to your audience rather than of simply stating facts or properties. Story telling is employed because it engages the audience and stays in their minds longer.

How does the public currently describe you now that you launched your brand?

What would you like the general public to say about your brand?

Which perception of your brand/message do you want to stay away from?

Now, after answering these questions, develop your sustainable core message!

03
STEP

Marketing and Communication

Offline Communication

Create a creative brief, create sustainable promotional materials, and ensure that your items are packaged in an environmentally friendly manner.

Best Practices:

ECOALF
BECAUSE THERE IS NO PLANET B



“Sustainable packaging in all of our endeavors”.

They do not work with virgin fiber paper.

They use 100% recycled paper for their cardboard packaging.

1. Establish a good, long-term marketing communications campaign.
2. Make sure your promotional materials are consistent with your sustainability goals.
3. Make sure your packaging is environmentally friendly.

03
STEP

Marketing and Communication

Digital Communication

1. Find out how to make a website that grabs the attention of consumers.
2. Create your social media strategy

04
STEP

Stakeholder Mapping and Partnerships

Stakeholder Mapping

Determine which issues are most important to your stakeholders, prioritize them, then map them out.



04
STEP

Stakeholder Mapping and Partnerships

Strategic Partnership

Learn about the primary obstacles, risks, and chances for forming long-term partnerships, as well as how to reach out and start building relationships.

Why? Creating strategic alliances is a great way for developing your green business.

What is Offline Communication?

Are all non-internet marketing activities that have a wide reach and engage a significant portion of our target consumers, and studies show that hard copy marketing is simpler to comprehend and recall. Billboards, face-to-face, physical print and placement, television, and radio are examples of traditional media.

What is Digital Communication?

Internet marketing encompasses all online marketing activities. Electronic mails, online forums, making comments online through various social media sites, blogs or social networking pages, and video and audio through online conferences are all examples of how they are being used efficiently today.

What is a Key Stakeholder?

Any person, group, company, or organization with an interest in or influence over your green business and the results of your business-related actions. For instance, employees, consumers, suppliers, communities, investors and funders, peer companies, and government agencies are all stakeholders.

What is a Strategic Partnership?

A long-term partnership with a significant stakeholder in pursuit of mutual goals that is perfectly aligned with your company's mission and values. Although there are several sorts of partnerships, they are usually formal written agreements.

What is Stakeholder Mapping?

The process of visualizing all of the stakeholders in a product, project, or idea on a single map. A stakeholder map's key benefit is that it provides a visual depiction of all the people who can influence your project and how they are related.

7. Creating an Ecosystem Map

Creating an ecosystem map is a process based on defining the existing situation as well as the targeted problem required to be solved. After all what was mentioned, generating your green business ecosystem map can be easier. Developing your own ecosystem map is important for distinguishing your business goals, challenges, audience, and how you are willing to combine all of these factors together to achieve a sustainable and successful business approach. Thus, when starting to draw your business ecosystem map, consider the following questions:

1. What is the business challenge you attempt to solve through your innovation?
2. Who is your targeted audience?
3. What is your green innovation's impact on the society?
4. What green business model best suits your eco-friendly idea and society?
5. What is the human hand involved in your business?
6. What are the basic requirements for developing your green business? (Consider everything even computers, desktops, tablets, building...)
7. Is energy and efficiency required in the entire business system you are trying to develop? Or is it in a single section of the system?
8. How will you finance your business? And will you obtain any tax cut offs for your green idea?
9. What are the support frameworks available in your country that can help you develop your green business?

After brainstorming the answers of the above questions, start by drawing out the components that make up the intended green business. Then:

1. Draw the ecosystem's main/central person (typically a user).
2. Make a list of the persons and/or organizations with whom/ which you have a strong connection.
3. Make a diagram of the tools that people use (cell phones, computers, smart speakers, connected devices).
4. Draw any extra information, such as the flow of money or the flow of data delivered and received.
5. Develop your commercializing strategy.⁷⁷

Summary

Agenda 2030 targeted different issues through its indicated SDGs like climate change, clean energy, water conservation, sustainable agriculture and healthy nutrition. The strife to achieve these goals requests the rise of startups and guiding their creative thoughts to the field of serving the environment. However, this direction requires finding incentivizing tactics that attract different entrepreneurs and companies to the field of sustainability and supporting them. From these tactics, “Green Intellectual Property Rights” defines its presence as a factor that activates inventiveness in the society. The term “Intellectual Property Rights” is quite relevant; however, “Green IPR” becomes a trending issue that certain parties believe generates creative lines in the society. Green IPR is vital for safeguarding human involvement leading to the sustainable development of countries and advancing novelty and eco-enterprises. It promotes Research and Development (R&D) related to sustainability, creativity, information, and economy. Green IPR regulates innovation in today’s society and economy dealing with green inventions generated in an area of attraction for initiatives, lawyers, legal scholars, and highly dominant authorities such as the European Patent Office, the International Center for Trade and Sustainable Development, the European Commission, and the National Environmental Agencies.

The methodology has comprised of desk research with reviews of different worldwide IPR Green Strategies, directed to fit the Mediterranean community. Representatives from the Med region were invited to a focus group to assess their communities’ level of awareness concerning IPR as well as the importance of setting green IPR and explaining its roadmap in Egypt, Tunisia, Lebanon, Palestine, Spain, and Italy following a green growth concept. Henceforth, the interview with green innovators has revealed important data to build upon this guidebook from their needs and challenges.

The economical evolution is rising towards green attentiveness, be it awareness of limited resources or the urgent need to accelerate sustainable innovations. Almost all startups and entrepreneurs rely on collaboration and IP of others in early innovation stages, then on different IP models at market diffusion stage. Standard licensing schemes are needed to overcome information bias as well diverse licensing approaches for low-middle income countries where circular economy directives should be incentivized from governments to increase durability. Intellectual property contributes to activating the economic movement of countries and to the development of many productive, industrial, cultural and economic sectors, and it reflects positively on public finances in many countries.

What is needed? Strategies that are designed to make the journey less complicated and less costly to register one’s innovation; funding plans to green startups to legalize their ecologic ideas and start reducing the negative impacts on the environment; assessing the ecosystem of technology transfer, identifying gaps, and proposing an action plan that can bring the green economy to light are highly recommended. The lack of awareness in educational institutions of the importance of intellectual property, the green environment and the frameworks for its protection will lead to negative repercussions on societies in general, whether in terms of economic, environmental or cultural life. The green sector is showing robust growth and the demand is increasing for innovative green products giving creators the opportunity to profit from their inventive work. What green startups need is knowledge, awareness, management skills to use green IPR for the achievement of their project endeavors especially in the innovation eco-system sector to patent their ecofriendly ideas leading to lower carbon emissions and creation of green jobs. Finally, technical and legal support such as judiciary services are needed to help green startup ideas know the value of registering and taking the decision to boost their green business by improving environmental protection, reducing negative carbon footprint, and reusing and repurposing instead of buying new raw materials. The “Green Innovation IPR Guidebook” demonstrated the methods of creating a green business starting from indicating the potentials present in the Mediterranean region to how to build the green business model, license it and finally commercialize it. Strategies were presented in a friendly graphical form in order to generate a common knowledge among all green entrepreneurs out there about green IPR.

This Green Intellectual Property Rights Guidebook has been produced for the GIMED and ENI-CBC Med Program /Green Impact MED Project Berytech is the official partner of the GIMED program in Lebanon.

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Biography: Farah is a Freelance Consultant based between Lebanon and Cyprus specialized in enriching local artistic and cultural projects. Her work includes research about sustainability and green energy, facilitating and training. She has held senior positions at BAU, Royal Institute of British Architects (RIBA) Certified University and recently Promoted to Head of Design Department at the American University of Cyprus.

Doctor of Sustainable Interior Architecture, she has designed local & international projects & participated in the following events: Meet the Eco Designers, Women in the Spotlight on the Day of International Woman’s Day, Diplomatic Spouses’ Association. She has also won a special recognition from UNIDO designing urban furniture.

She has led research for British Council Lebanon titled Build Back Better, analyzing the local arts’ scene during the times of crisis. She has also founded Year 2017 GreenShiftLeb – for Upcycled / Repurposed Furniture: an innovative green business concept, creating sustainable Furniture and interior solutions that will have a positive impact on an ecological and social level. The idea is reviving existing furniture pieces and giving them an artistic value, working with talented crafts people, wood carvers, carpenters, resin artist, and creating green jobs for young designers in a closed loop system. The Rejuvenated Pieces of furniture start a new life through creating awareness and Supporting Local Craftsmanship.

Research Assistant-Content/Graphics: Mira Hamza (Holder of a Master’s Degree of Architecture / with distinction, writer of the Online Teaching GuideBook for the Fine Arts University, has participated in the green project: Ecofriendly Beekeeping Village in West Bekaa in the research and conceptual design)

Advisors:

Environmental Consultant: Maya Karkour (Eco-consulting: Consultant for environmental and architectural projects in Lebanon and abroad, performs trainings such as Switch-Med training for green entrepreneurs)

Biography: Maya Karkour is the local representative of the Circular Economy Club in Beirut and the Managing Director of EcoConsulting which she co-founded in 2003 in the UK. EcoConsulting is a specialized sustainability consultancy with a focus on reworking the relationship between businesses, institutions, municipalities, builders, households and the Environment through greater energy-efficiency, better resource use, pollution mitigation, as well as healthier and circular solutions. EcoConsulting also has a wide experience and professional expertise in organizing and moderating conferences, workshops and events on various sustainability topics, including the circular economy, eco-design, and eco-building aiming at reducing their environmental footprint –including the eco-renovation of Casa Batroun, the first project in the Middle-East to achieve the British BREEAM “Excellent” certificate in February 2014, and the Lebanese Architects Sustainability Award in 2017. She has been a keynote speaker at various sustainable design conferences; conducted numerous green building and LEED & BREEAM seminars; and written or been featured in a few articles—including her own eco-flat renovation in central Beirut. Maya holds an MSc (hons) in Environment from the London School of Economics and Political Science and is a LEED Accredited Professional, a BREEAM Licensed Assessor, and Low Carbon Energy Assessor.

Maya is currently the President of the Lebanon Mountain Trail Association (LMTA), also in charge of developing and helping implement Environmental Education programs on the Trail, working with the Ministry of Education and public schools. Additionally, she is one of the main local trainers & mentors of the SwitchMed Green Entrepreneurship program, and has been actively promoting the Circular Economy in Lebanon through workshops. Maya is also a fellow of the Middle East Leadership Initiative (MELI), Class IV, of the Aspen Global Leadership Network.

Legal Consultant: Chady Abou Issa (Lawyer, Arbiter & Writer)

Specialized in Intellectual Property Studies and author of a book and several Publications regarding this matter

President of the International Center for Intellectual Property and Legal Studies (ICIP) فِكْر FIKR

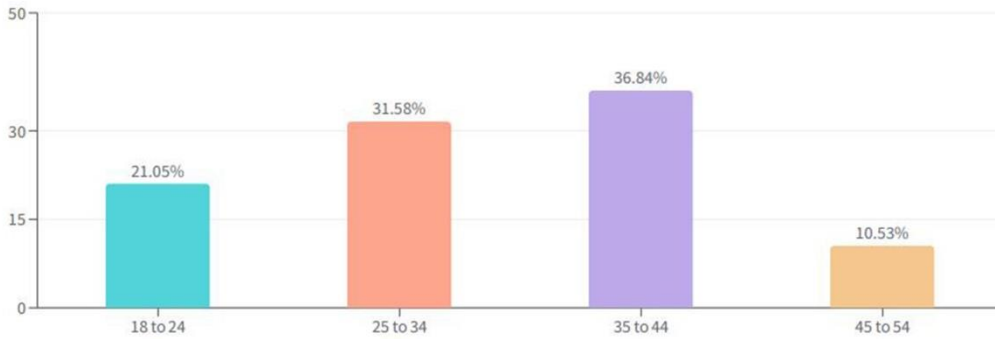
Member of the Arab Lawyers Union (ALU)

Member of the Intellectual Property Committee at the Beirut Bar Association (BBA)

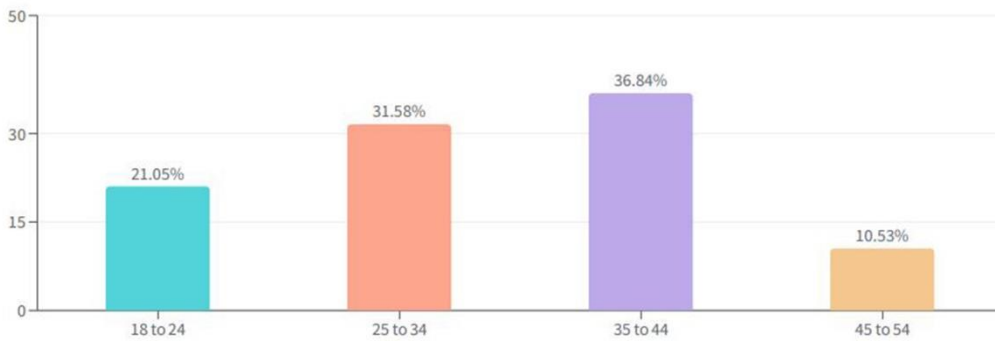
Proof Reading: Arpa Snabian (English Language University Lecturer and head of the Environmental Committee in Anjar)

Question 22 Green Trends and Basic Requirements	
Tunisia	Organic food, products, and sustainable recycling
Egypt	Eco Farming, recycling, renewable energy trends, and requirements: funding and awareness among governments.
Question 23 Community Challenges	
Italy	No IPRA awareness, mostly legal experts. The informant be found on Google. Good Practice Cooperative community common good between Spain and Italy to spread knowledge.
Spain	Entrepreneurs who had their innovation "Technology Based", were asking for patent funds to license.
Tunisia	Entrepreneurs face challenges, marketing their green products regarding absence of green industry laws.
Egypt	No formula to register entrepreneur's whole innovation, lack of green laws, no access to information how to register, takes a very long time to patent ideas.
Palestine	Lack of awareness, lack of governmental support, lack of investment in resources, and restrictions.
Question 24 Type of Green Products that require licensing	
Spain	Trends, technology-based innovation, & energy efficiency. The process of patenting here in Europe, is extremely complex.
Egypt	Innovators are struggling with registration, created as a regular company, need green copyright registration. One or two banks are aware of this and have provided actual fund for patenting.
Italy	Furniture recycling by moulding, waste reusing, recycling, bioplastic, biogas production from plant, and clothes production from natural fibers, have different markets, each with its specific patent.
Question 25 Steps to develop Green IPRA	
Egypt	Registration is a proof of ownership. According to Egyptian law, and as established and confirmed by precedent, ownership of the trademark is established by first use of the mark in the market. Copyrights are divided in Egypt to drawings, books, software codes. Patents need Novelty, inventive step, & capability of economic exploitation. (mentioned complexity of patents).
Question 26 EU Measurements alignment to integrate environmental components	
Italy	European taxonomy, the economic activities have to match in order to be considered sustainable. EU environmental confirmation. Entrepreneurs can check their ideas included in the EU measures. Different eco-labels designed at the EU level can provide specific criteria. Many regulations and criteria set by the EU that are specific for each field.
Egypt	2030 vision set by the government. The Ministry of Environment is trying to launch initiatives in order to push the sustainable development goals. Support of SIMED to know more.
Question 27 What Business Trends are you Licensing lately?	
Palestine	The most comment trends digitalization. The start of green online stores, but there is no specific licensing to green enterprises in Gaza Strip starting renewable energy projects from lack of electricity.
Italy	Market trends are the food sector, transformation, touristic sector, waste management, and recycling. Concerning digitalization, each of them has maybe one digital element like digital platforms to sell agri-food products... Moving to patents, not all projects require patent; in very few require patents.
Question 28 What are the main support frameworks in your country that help green IPRA commercialization?	
Italy	Providing networking support to boost access to markets, not only to products but also to partners, generate commercial partnerships in order to improve the product or service by combining efforts.
Egypt	The government is encouraging startups registration. Funding and access to markets is always done through incubators, accelerators and joining network events in order to get to know investors. Creating partnerships with innovation partners example an initiative to reduce carbon footprint. Exposure for entrepreneurs and linkages with big names like nestle to create contracts and promote innovation. The ecosystem for startups, which is thriving and expanding but the healthy rate mainly in fintech, e-commerce and delivery, is the one available for green startups.
Palestine	Support from many NGOs and investors (not from the country) to provide subgrants.
Question 29 How is financing green projects obtained?	
Egypt	Banking loans, venture capitalists, and investors who are the main funding resources. Green finance facilities funded by MFIs such as EBRD, AFC, etc., delivered through banks. Non-banking financial services such as financial leasing and VC are still limited with tailored products for green business, with the exception of solar energy.
Palestine	Bank loans, microfinance loans, investments, and venture capitalists.
Italy	Rent can be provided by public or private entities, loans by banks and funding institutions, and equity can be provided by investing funds or thru single investors.
Question 30 Are there emerging eco-friendly businesses in your country in the traditional knowledge field?	
Egypt	Touristic souvenirs made from Bardia Papers, an ancient Egyptian industry being revived. Working in handcrafting in order to reduce the energy usage and create eco-friendly products.

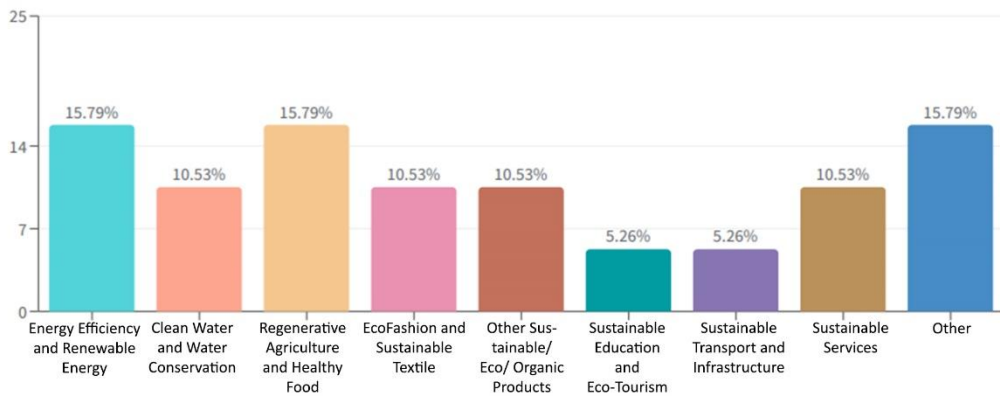
1. What is your gender?



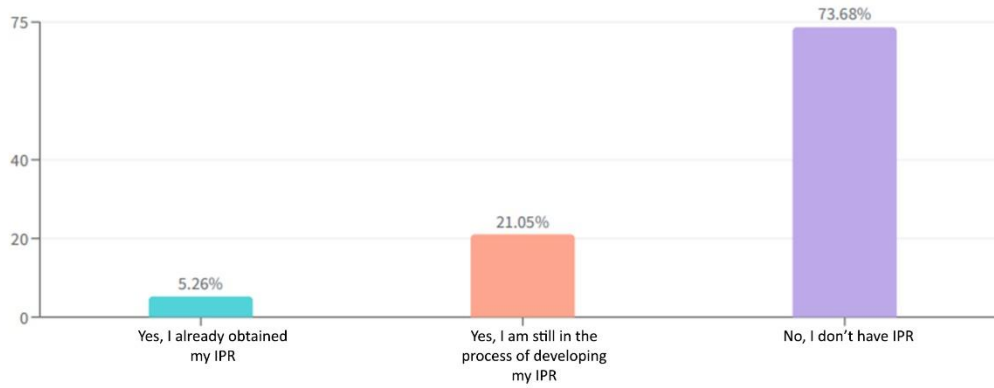
2. What is your age range?



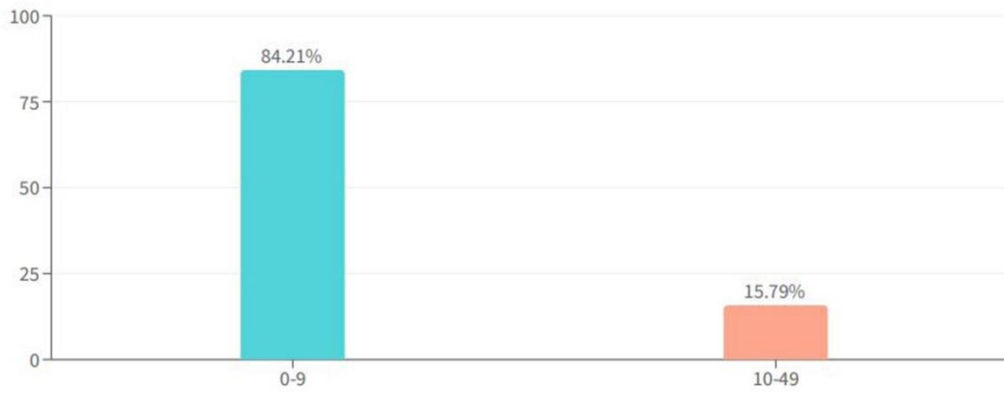
3. To which green sector does your green innovation belong?



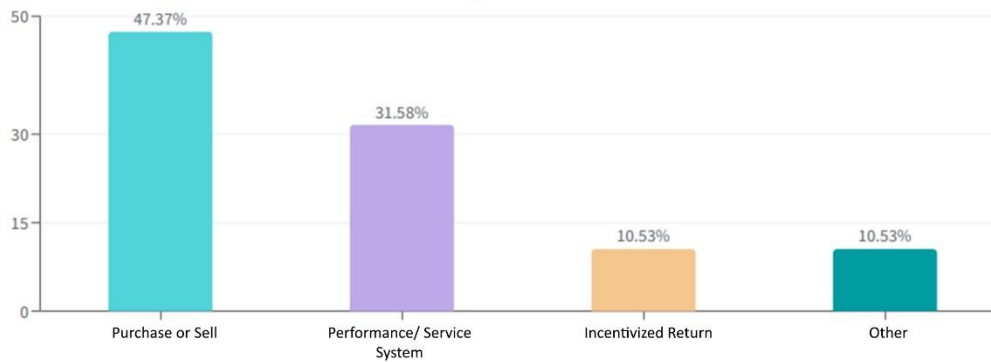
4. Do you have green IPR in the process of development?



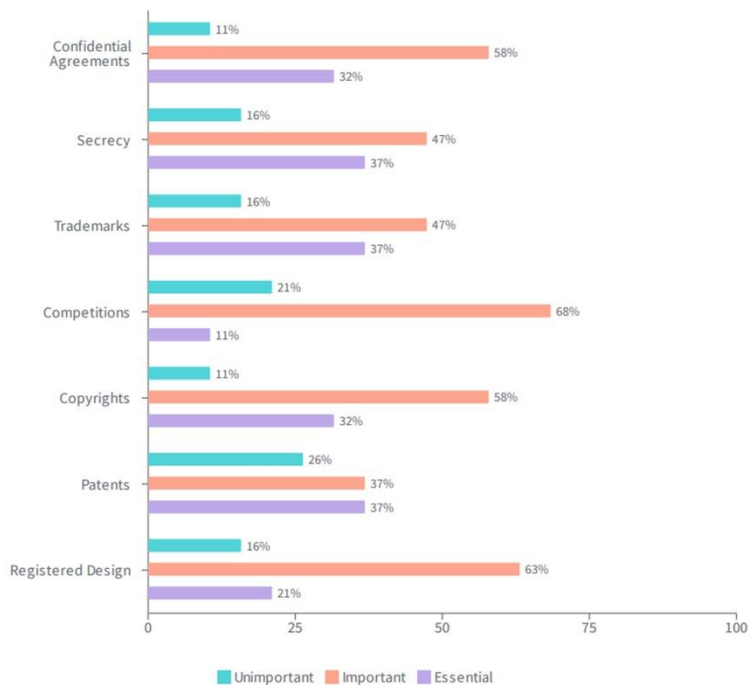
5. What is the number of employees you have?



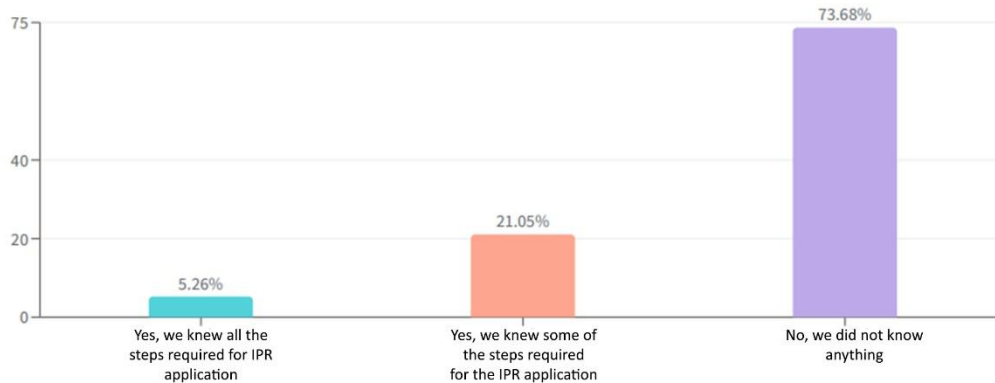
6. What is the circular business model you follow?



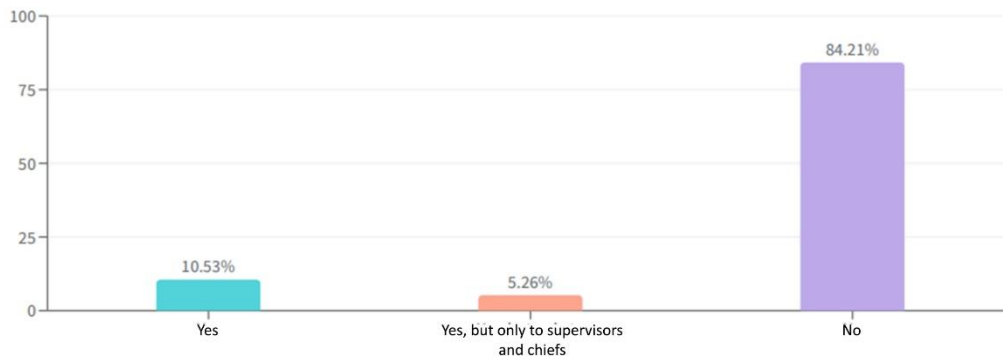
7. Please, indicate the importance to your business of each of the following methods to protect your innovation:



8. Did you know (correctly) the steps of publication before filing the patent application?



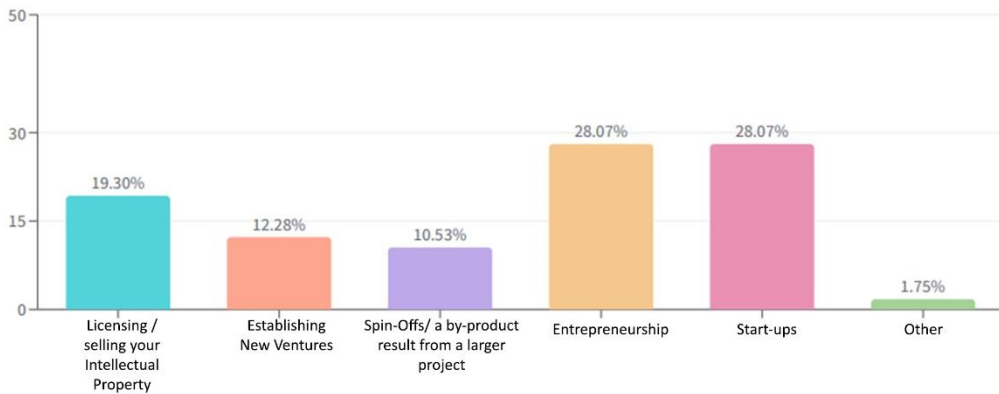
9. Is any training about IPR provided by your company to your staff?



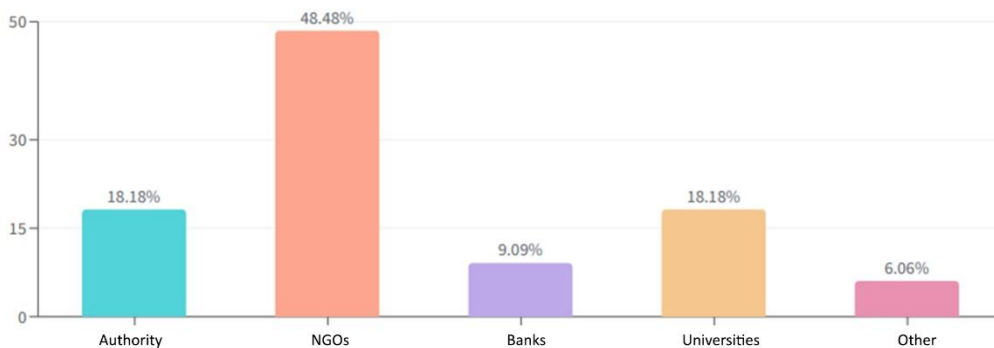
10. Where do firms seek IP advice from?



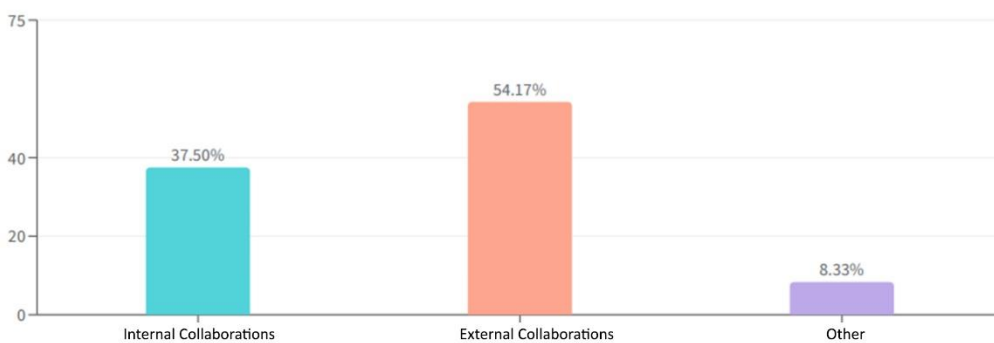
11. What is the commercialization model you aim to develop?



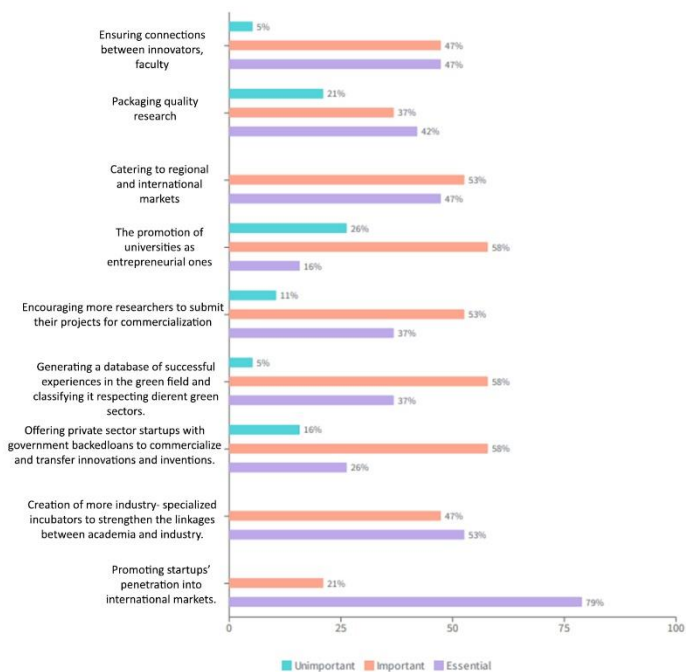
12. What are the main support frameworks in your country that help green innovation commercialization?



13. What type of collaborations are you seeking?



14. How can the players (authority, NGOs, Universities...) enable you to have more commercial partnerships?



¹(2021). Retrieved 20 December 2021, from <https://iea.blob.core.windows.net/assets/4ed140c1-c3f3-4fd9-acae-789a4e14a23c/WorldEnergyOutlook2021.pdf>

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³*Green innovations call for strong IP protection*. Dennemeyer. (2022). Retrieved 5 January 2022, from <https://www.dennemeyer.com/ip-blog/news/green-innovations-call-for-strong-ip-protection/>.

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⁵*Green Innovation*. Innovation Policy Platform. (2022). Retrieved 5 January 2022, from <https://www.innovationpolicyplatform.org/www.innovationpolicyplatform.org/content/green-innovation/index.html>.

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⁷*Green Innovation*. Innovation Policy Platform. (2022). Retrieved 5 January 2022, from <https://www.innovationpolicyplatform.org/www.innovationpolicyplatform.org/content/green-innovation/index.html>

⁸*Green Innovation*. Innovation Policy Platform. (2022). Retrieved 5 January 2022, from <https://www.innovationpolicyplatform.org/www.innovationpolicyplatform.org/content/green-innovation/index.html>

⁹Goossens, P. (2022). *Circular Economy Business Models explained by Board of Innovation*. Board of Innovation. Retrieved 6 January 2022, from <https://www.boardofinnovation.com/circular-economy-business-models-explained/>.

¹⁰Kenniskaarten - het Groene Brein. n.d. *How does circularity relate to sustainability? - Kenniskaarten - het Groene Brein*. [online] Available at: <<https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/related-schools-of-thought/>> [Accessed 6 February 2022].

¹¹Kenniskaarten - het Groene Brein. n.d. *Circular economy: a definition and most important aspects*. [online] Available at: <<https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/what-is-the-definition-a-circular-economy/>> [Accessed 6 February 2022].

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