

Water and Environment Support

in the ENI Southern Neighbourhood region

Green Innovation Intellectual Property Rights

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KEY CONCEPTS
IN GREEN &
CIRCULAR
ECONOMY

TOWARDS A CIRCULAR ECONOMY

Moving from a linear model

To keeping resources and products within the production cycle for as long as possible.

AN INVITATION TO THINK DIFFERENTLY

- How can our waste build capital rather than reduce it?
- What if products of today (or parts in them) become the resources of tomorrow?
- What if we never owned our technologies?
- How will innovation and technology shape the circular economy?



GREEN ECONOMY

DEFINITION

Defined as low carbon, resource efficient & socially inclusive. It includes:

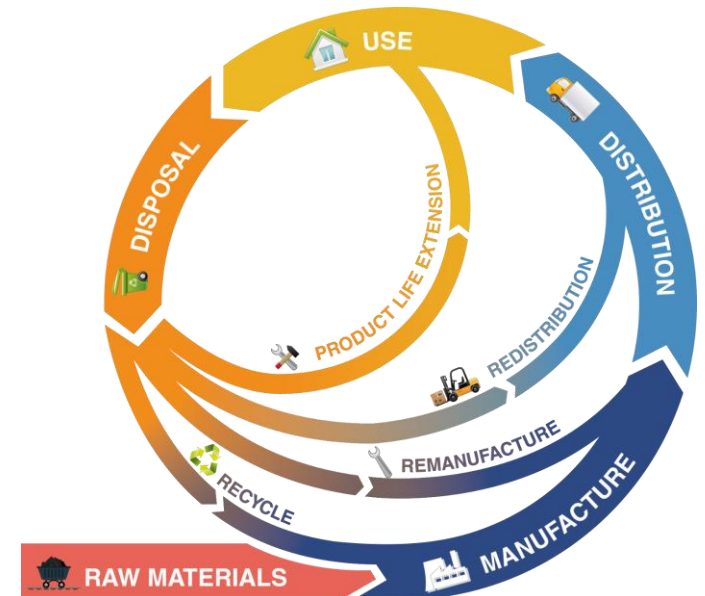
- 01** Economic activities, infrastructure and assets that allow reduced carbon emissions & pollution.
- 02** Enhanced energy & resource efficiency.
- 03** Prevention of the loss of biodiversity & ecosystem services.

CIRCULAR ECONOMY

DEFINITION

A model of production and consumption that aims at extending the lifecycle of products and materials as much as possible.

Considering the whole value chain cycle.



CIRCULAR ECONOMY STRATEGIES

- 01 Prevent pollution & Save resources
- 02 Recover resources after disposal
- 03 Extend resources use & Reduce disposal
- 04 Increase resources utilization rate
- 05 Shift to circular supplies & renewable resources
- 06 Facilitate demand for circular products & services



GREEN GROWTH

“The act of growth and development while maintaining natural resources and environmental sustainability. As sustainability tackles all three elements, economy, society, and environment simultaneously, innovation is required in order to achieve growth.”

VERSUS

GREEN INNOVATION

“The act of **updating the markets** and generating **new employment opportunities**, in addition to paving the pathway in front of **sustainable development** and easing the transition towards an **eco-friendlier economy**.”

It covers all innovations used to **encourage sustainability** and reduce greenhouse gas emissions, or to actions that **diminish our impact** on climate change. ”

Highlighting the Importance of Green Innovation



CURRENT CONTEXT



Leveraging on Green IPR to shift towards a greener future is key

Greener economy → Positive regional market transformations → New green jobs



"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 essentially linked with intellectual property [IP] and its supporting innovation ecosystem."

(2030 Agenda for Sustainable Development)

THE PROCESS



01 Developing Green IP Innovation Projects

02 Protecting Green IPR in Lebanon

03 Commercializing Green IPR

Shifting towards IP Capacities for Smart, Sustainable and Inclusive Growth in the Mediterranean region.



02

GAPS, TRENDS AND
OPPORTUNITIES



ECOSYSTEM GAPS

REGIONAL SCALE

Limited Funding for green IPR Prototypes and Go-to-market

Limited Market Driven Models and collaboration between green industry, intermediary organizations and academia

Curricula needs to include more Green Innovation and Commercialization concepts

Limited Green IP policies

Lack of Technology Transfer / matchmaking structures for green IPR collaboration

Limited technical skills adapted to green sectors

Lack of green incubation / acceleration programs with an international and research focus

Limited data in the green sector

TRENDS & OPPORTUNITIES IN GREEN IPR

HOW IS CIRCULAR ECONOMY DRIVING GREEN IP INNOVATION?



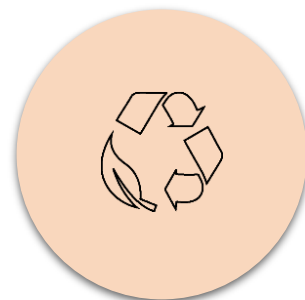
PARTNERSHIPS INNOVATION

Innovating practices with local and regional partners to unlock circularity benefits



PROCESS INNOVATION

Innovating in business, production and industrial processes to close the circular loop



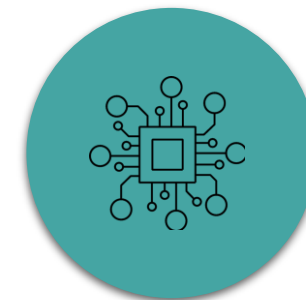
PRODUCT INNOVATION

Developing new, durable, modular products to implement circularity



PACKAGING INNOVATION

Innovating in the product packaging to reduce waste and loss of raw material



PROPOSITION INNOVATION

Creating consumer propositions to build circularity and impact the consumer behavior



TRENDS & OPPORTUNITIES IN GREEN IPR

Creating IPR value in circular economy

- 01** Produce a *visual value chain* identifying IPR factors starting from the extraction of raw materials till their life end.
- 02** Capture value through IPR. Make use of the data and highlight novelty.
- 03** Illustrate your financial, social, as well as environmental inputs and outputs. Identify main actors and build partnerships.
- 04** Set your invention impacts (economy, environment, society)
- 05** Target your audience and develop your commercialization strategies



TRENDS & OPPORTUNITIES IN GREEN IPR

Integrate IPR in circular business models

Sharing platforms

Resources recovery

Circular supplies

Product life extension

GREEN IPR across sectors

Renewable Energy

Sustainable Tourism

Green Hydrogen

Water Conservation and Water Recycling

Eco-Construction, Green and Sustainable Buildings

Waste Management











Sustainable Agriculture and Organic Food

TRENDS & OPPORTUNITIES IN GREEN IPR TECH & NON-TECH

INNOVATION DRIVERS: LEVERAGING ON TECHNOLOGY TRENDS

● Technology Trends

▶ Non-Tech Trends

				
Internet of Things	Digitization	Blockchain & Big Data	Platforms & Applications	Biometrics
				
Robotic Process Automation	Nano technology	Virtual & Augmented Reality (VR/AR)	Artificial Intelligence (AI)	eCommerce

Technology Trends

TRENDS & OPPORTUNITIES IN GREEN IPR TECH & NON-TECH

INNOVATION DRIVERS: LEVERAGING ON NON-TECHNOLOGY TRENDS

▶ Technology Trends

● Non-Tech Trends

 Frugal & Inclusive Innovation	 Eco-Friendly	 Clustering	 Sharing Economy
 Crowdsourcing	 Gamification	 Self-Learning	 Hygiene
 Cultural & Domestic Production	 Women & Youth Empowerment	 Intra-preneurship	 Sustainability

Non-Technology Trends

03

INTELLECTUAL PROPERTY RIGHTS

Focus on Green Economy



DEFINING IPR IN GREEN ECONOMY

IPR is defined as the creations of the mind such as inventions; literary and artistic works, designs and symbols, names and images used in commerce. (WIPO)

What makes an IPR “Green”?

Innovation must have an environmental impact across the value chain on:



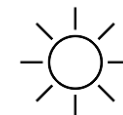
ENVIRONMENT
PROTECTION



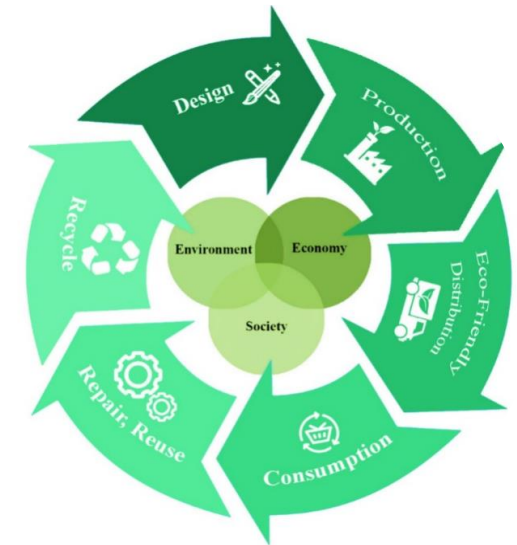
SUSTAINABLE
CONSUMPTION &
PRODUCTION



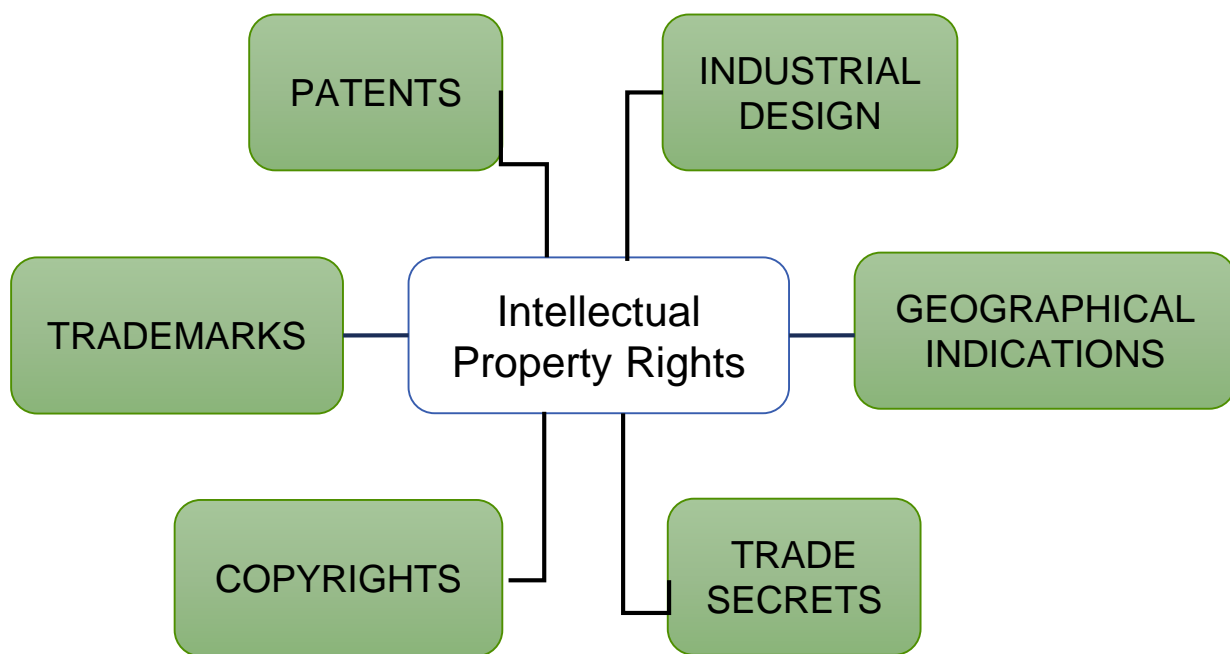
REDUCING
POLLUTION



CLIMATE
ACTIONS

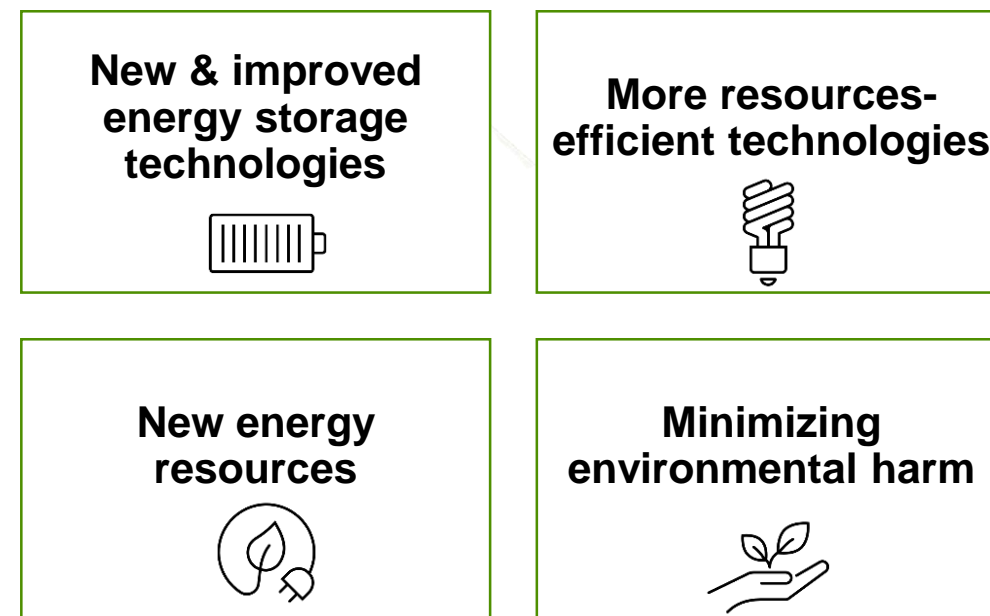


TYPES OF IPR



PATENTS

IN WHICH AREAS DOES A PATENT SUPPORT GREEN TECHNOLOGY?



TYPES OF IPR

TRADE SECRETS

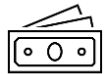
Trade secrets are IP rights on confidential information which may be sold or licensed (a secret device or technique in manufacturing). SMEs rely on trade secrets to secure their data.



Have unlimited time



Have unlimited subject matter



Don't have registration costs

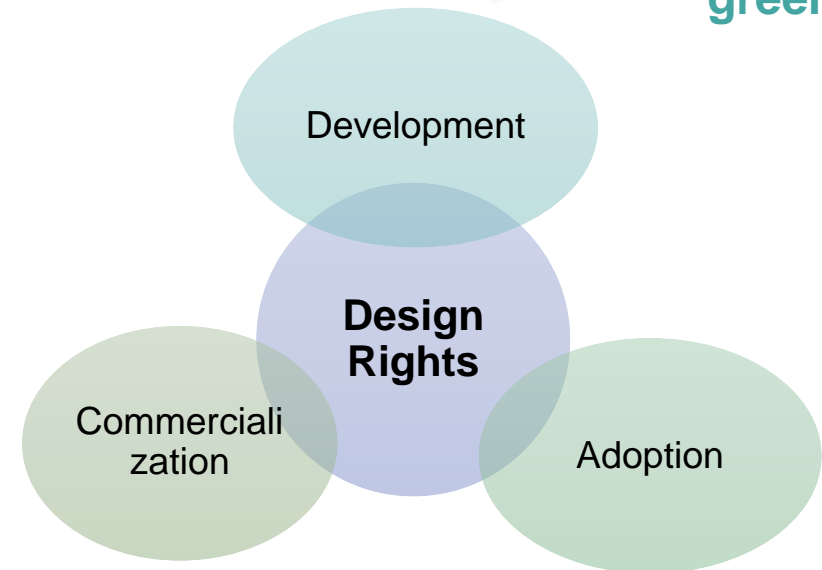


Are immediately effective

INDUSTRIAL DESIGN RIGHTS

in Relation to Green Novelty

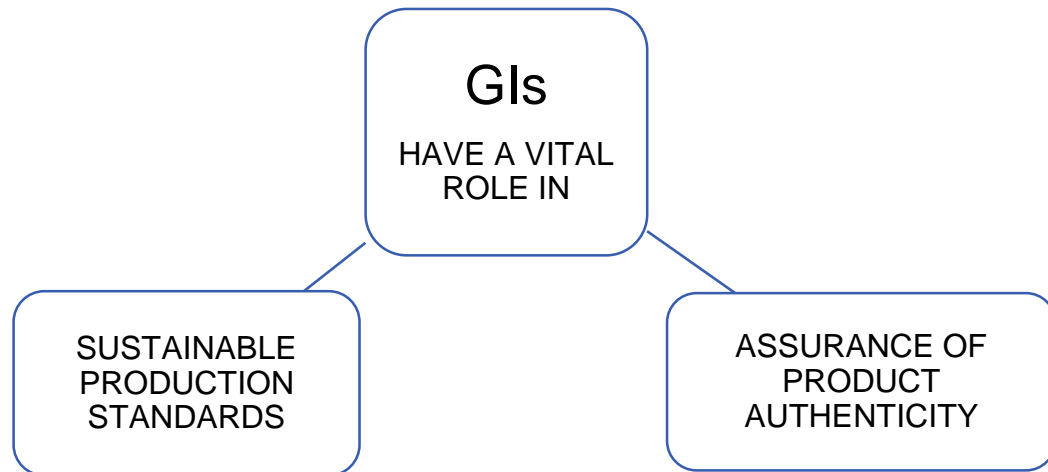
Designing products that are environmentally sustainable is indispensable for seizing the green shift.



TYPES OF IPR

GEOGRAPHIC INDICATIONS

GI indicate the original place of a particular product (Culture, Perception and Reputation).

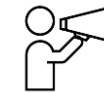


TRADEMARKS

Have important indirect impact on Green Tech:



INCREASED SALES and resulting REVENUES



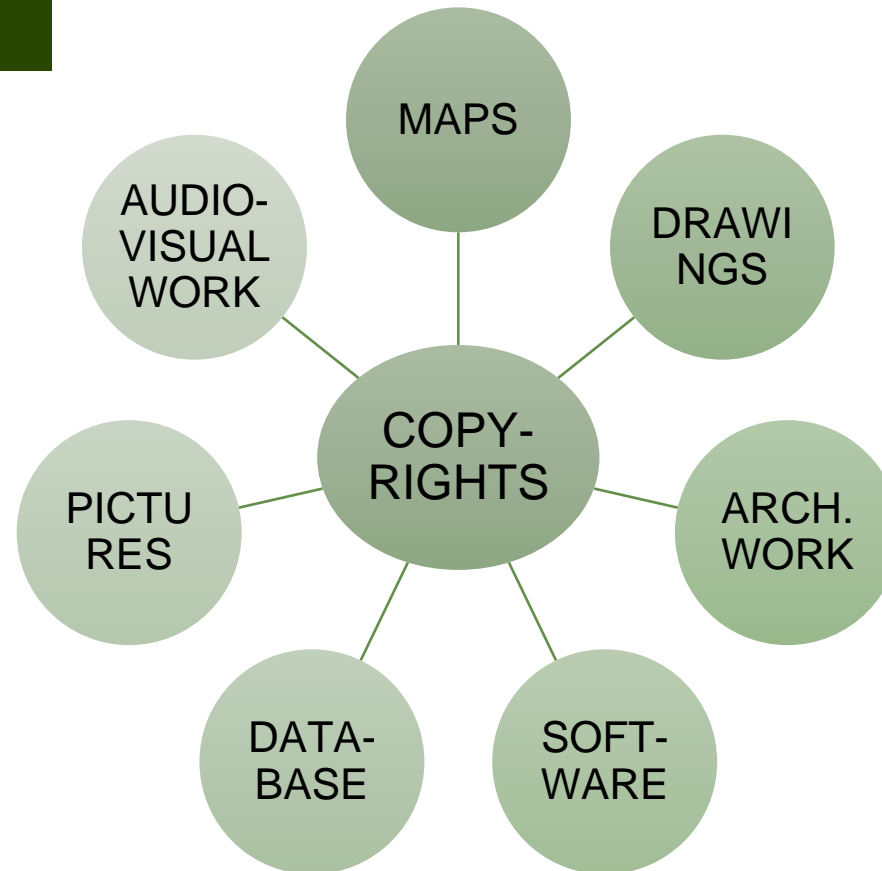
Diffusion of INNOVATION through MARKETING



Increased resources investment

TYPES OF IPR

COPYRIGHTS



EXAMPLE: Partners with Sun



LEBANESE STARTUP – CLEANERGY (BERYTECH)

Patent was successfully tested and launched in the year 2022.

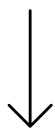
INVENTION: Partners with Sun invented and patented the first **Industrial Solar Oven**.

IP IN CIRCULAR ECONOMY:

A standard bakery oven with a new heat exchange mechanism connected to an industrial solar panel:

- It can reach up to 250°C
- It has a high-end insulation material that keeps the temperature inside constant for long periods.

IMPACT:



CUTS 80% OF A
BAKERY'S FUEL BILL



SAVES PRODUCTION
TIME BY 25%



IOT TECHNOLOGY TO
OPTIMIZE ENERGY
CONSUMPTION AND
PRODUCTION PROCESSES

The Growth
Summit 2023

WORLD
ECONOMIC
FORUM

This Lebanese bakery makes bread using sunlight

An aerial view of a modern city street, heavily tinted with a green color. The street features multiple lanes, crosswalks, and several buses. Buildings with large glass windows and modern architectural designs line the street. A large, stylized graphic overlay is present, consisting of a blue number '04' and a large white arrow pointing upwards and to the right. The overall scene is bright and clear, suggesting a clean, modern urban environment.

04

GREEN IPR
COMMERCIALIZATION

GREEN IPR COMMERCIALIZATION

KEY FACTORS

Eco labeling and certification

Enable tech transfer & Build green partnerships

Capturing & promoting green impact

Comply with green market requirements and standards

Green marketing: stimulate sustainable innovation

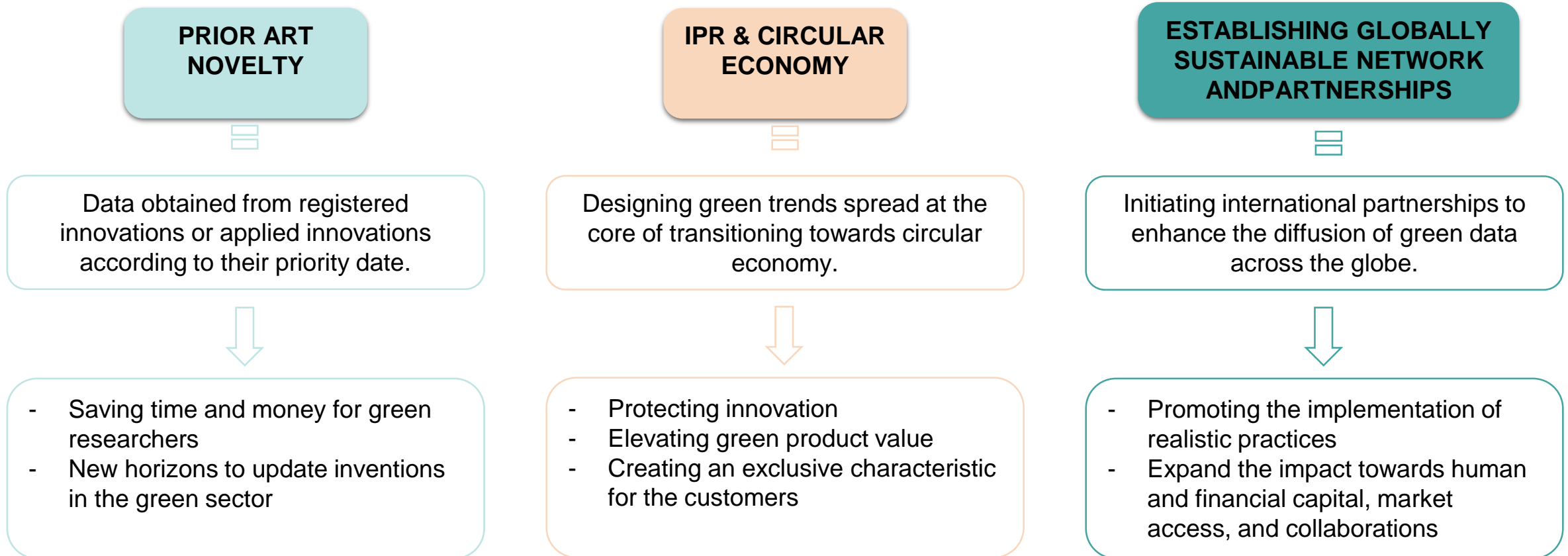
Create incentives for green consumption

05

GREEN IPR ON A MACRO LEVEL

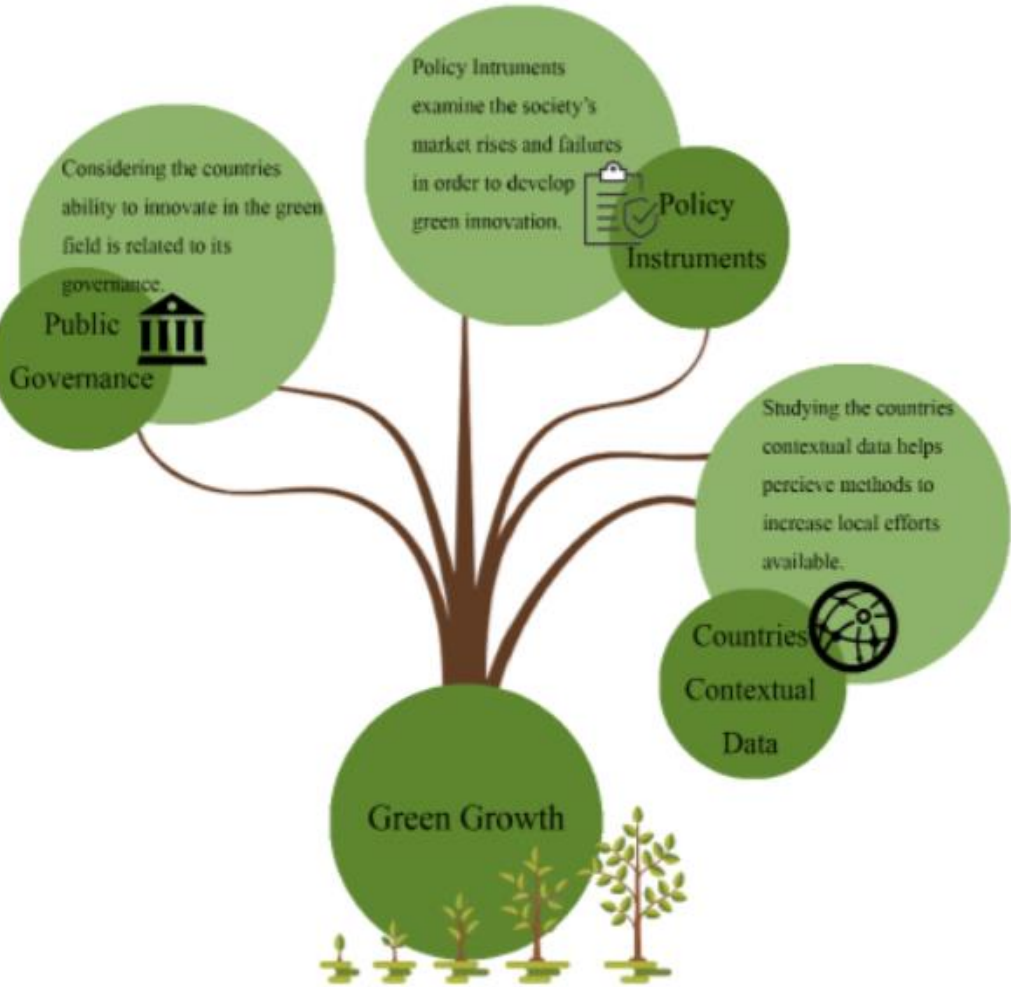
IMPACT OF GREEN IPR ON CIRCULAR ECONOMY

Developing Green IPR can have an important impact on encouraging circular activities:



ROLE OF PUBLIC AUTHORITIES IN GROWING GREEN IPR IMPACT

Policy measures take an essential role in facilitating green acts in public authorities.



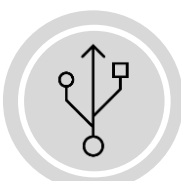
PUBLIC GOVERNANCE

Institutional mechanisms & Incentive structures
Affecting public and private entities



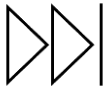
POLICY INSTRUMENTS

Analyze markets and systematic failures and improve the field of green innovation



COUNTRIES CONTEXT

Strengthen local capacities in tech transfer and R&D
Create incentives



Sustainable future & circular economy
&

ACCELERATION of the achievements of eco-friendly initiatives



06

ROLE OF
INNOVATION
STAKEHOLDERS IN
SUPPORTING GREEN
INNOVATION

INNOVATION ACTIVITIES TO ENABLE AND GROW GREEN IPR



INNOVATION HACKATHONS
WITH UNIVERSITIES &
INDUSTRIALISTS



TRAIN OF
TRAINERS FOR
EXPERTS &
CERTIFICATIONS



GRANTS, IPR
VOUCHERS &
ACCESS TO
GREEN FINANCE



ADVOCACY, NATIONAL
STRATEGIES,
AWARENESS & POLICY
DIALOGUE



CROSS BORDER VISITS &
SOFT LANDING



MATCHMAKING
& ACCESS TO
NETWORKS



OPEN ECO-INNOVATION



GREEN CAPACITY BUILDING,
INCUBATION &
ACCELERATION WITH GREEN
SUPPORT TOOLS

THE CONTEXT OF GIMED

Turn Your Green Innovative Solution Into A Successful Business

Join our 10-month program for green researchers & innovators

APPLY BY OCTOBER 30



Green Applied Research and Innovations Support Program



#GRID2022

Exchange The Latest Innovations & Opportunities In The Green Sector

GREEN
INNOVATION DAYS - 2022


Le Royal Hotel, Beirut
11, 12, 13 October 2022

GIMED: 8 entrepreneurs from Lebanon at the Rimini Fair, the largest exhibition center in Italy



GIMED IMPACT across 5 countries

-  **448** Trained entrepreneurs
-  **199** Trainees women
-  **339** capacity building workshops
-  **920** coaching sessions

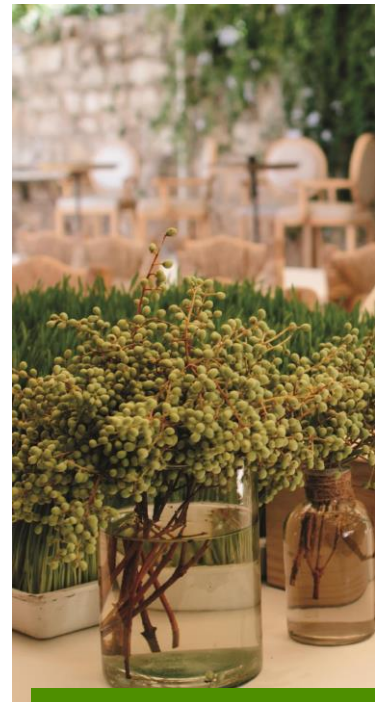
27  Startups have developed new products or prototypes

14  Startups achieved trade deals and collaboration

28  Startups reporting operations growth during GIMED

83  New jobs created in the green & circular economy sector

9  Startups achieved investors' interest



EXAMPLE: LEBANON WASTE MANAGEMENT

Business Model Innovation



ROLE OF Berytech

MAIN ACTIVITIES & INDUSTRY VERTICALS



AGRICULTURE
AND FOOD



WATER, ENERGY,
FOOD NEXUS



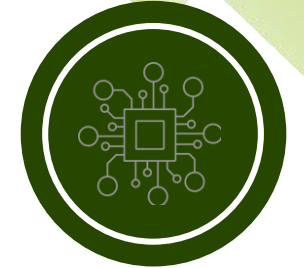
CLEAN
TECHNOLOGY



GREEN
ENTREPRENEURSHIP
& CIRCULAR ECONOMY

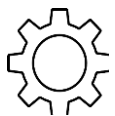


SOCIAL
ENTREPRENEURSHIP



INFORMATION
COMMUNICATION
& TECHNOLOGY

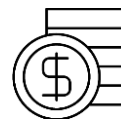
MAIN AREAS OF SUPPORT



PROGRAMS



CAPACITY BUILDING
& NETWORKING



FUNDING



FACILITIES

EXAMPLE: NADEERA



LEBANESE STARTUP – CLEANERGY (BERYTECH)

In the process of registering a patent.

INVENTION: Nadeera invented the **Smart Bin for automatic recyclables drop-off.**

IP IN CIRCULAR ECONOMY:

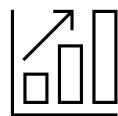
Implementing waste tracing to monitor performance, optimize efficiency, and ensure higher material and value recovery.

This enables municipalities to reduce their waste management costs, recover value from waste, and alleviate health and environmental issues due to waste mismanagement.

IMPACT:



MATERIAL RECOVERY
RATES AT SORTING
FACILITIES



INCREASING REVENUES
FROM SELLING
RECYCLABLES



UNLOCKING A VALUE OF
120\$ PER TON OF WASTE
CURRENTLY NOT BEING
EXPLOITED

Berytech

The Ecosystem
for Entrepreneurs



07

RECOMMENDATIONS

RECOMMENDATIONS

1. FILLING KNOWLEDGE GAPS IN THE CIRCULAR ECONOMY, IP, INNOVATION

SUPPORTING MSMEs



- Adopt green innovation processes
- Cooperate within clusters/networks
- Elaborate international collaboration agreements

GREEN INVESTMENTS



Public and private investments



Should be socially and environmentally oriented

COLLABORATION OF PUBLIC AND PRIVATE ACTORS



Strengthening PPPs – to assure:



- The implementation of CE practices by MSMEs
- The social and environmental responsibility investments by Public and private actors

RECOMMENDATIONS

2. POLICIES THAT FOSTER LOW-CARBON INNOVATIONS



ENVIRONMENTAL POLICIES &
REGULATIONS (NATIONAL &
INTERNATIONAL)



EFFECTIVE PROTECTION &
ENFORCEMENT OF IPR



BETTER A2F & SUPPORT
SERVICES FOR SMEs



PROMOTION, MARKETING
& AWARENESS



INCREASED R&D AND SUPPORT
TO PRIVATE R&D



SHIFTING TO
ECOLOGICAL ECONOMIES



RECOMMENDATIONS

3. RAISING THE PROFILE OF INNOVATION IN THE GREEN ENTREPRENEURIAL SECTOR AND HIGHLIGHTING THE ROLE OF PUBLIC BODIES TO SUPPORT AND PROTECT THIS INNOVATION:

- Social / Policy Dialogue & Raising awareness
- Capacity Building green entrepreneurship development
- Transition to Green Jobs
- Environment – Labor Market Linkages
- Lessons Learned from other countries (Ex. Eco taxes in Germany with positive impacts on environment and jobs)
- Investment in human capital /teaching young generation skills can fill the gap
- Embed Skills of Sustainability knowledge in vocational education



**Water and
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in the ENI Southern Neighbourhood region

Thank you for your attention!

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Full report available on <https://berytch.org/green-innovation-intellectual-property-rights-guidebook/>

