ENI CBCMED
Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

ATHENA Research & Innovation Information Technologies

LIVINGAGRO

Course I
Climate change policy framework & Agroforestry, Business Innovation

Dr Conrad Landis

Senior Researcher, Athens University of Economics and Business

Lydia Papadaki

PhDc, Athens University of Economics and Business;

Researcher, AE4RIA

Forestas
Agenzia forestale regionale pro s'isviluppu de su territòriu e de s'ambiente de sa Sardigna
Agenzia forestale regionale per lo sviluppo del territorio e dell'ambiente della Sardegna
SardegnaForeste

Consiglio Nazionale delle Ricerche

NARC

LARI

CIHEAM MAI CHANIA

ATM CONSULTING sas

AE4RIA

Alliance of Excellence for Research and Innovation on Aephoria

www.ae4ria.org

200	100	150	543	500M
PEOPLE	PROJECTS	CONFERENCES ORGANIZED	PUBLICATIONS	FUNDING

Professor Phoebe Koundouri
Founder and Scientific Chair

RESEARCH INSTITUTIONS

ATHENA Research & Innovation Information Technologies
Sustainable Development Unit

ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ — ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

ReSEES Research laboratory on Socio-Economic and Environmental Sustainability

Stochastic Modeling and Applications Laboratory

ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ — ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

ICRE8 International Centre for Research on the Environment & the Economy

DTU
DTU Management
Department of Technology, Management and Economics

ACCELERATORS

SDSN Global Climate Hub

eit Climate-KIC Hub GREECE

Funded by the European Union

MENA MARITIME Accelerator

BRIGAID CONNECT

Water Europe Technology & Innovation

Nexus Cluster

ACADEMIES,NETWORKS, ASSOCIATIONS

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

SDSN Europe

SDSN Greece

EAERE European Association of Environmental and Resource Economists

Academia Europaea ~1988~

World Academy of Art and Science

iap SCIENCE HEALTH POLICY
the interacademy partnership

AE4RIA

Alliance of Excellence for
Research and Innovation on Aephoria

Interdisciplinary Thematic Priorities

SDGs – ESG measurement

Sustainable Finance

Sustainable Pathways Climate Neutrality

& Resilience

Sustainable Pathways for Seas and Oceans

Sustainable Pathways Land Use &

WEFB Nexus

Innovation Acceleration

Education

Upskilling/Reskilling

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

Climate Change and Sustainable Development

Climate Change: How is it caused?

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

- Climate change is real and human activities are the main cause (IPCC)
- The concentration of greenhouse gases in the earth's atmosphere is directly linked to the **average global temperature** on Earth (IPCC)
- The concentration has been rising steadily, and mean global temperatures along with it, since the time of the Industrial Revolution (IPCC)
    - Carbon dioxide in the atmosphere has risen by 25% since 1958, and about 40% since the Industrial Revolution.
- The most abundant greenhouse gas, accounting for about two-thirds of greenhouse gases, **carbon dioxide** (CO_2), is largely the product of **burning fossil fuels** (IPCC)
- **Methane**, the primary component of natural gas, is responsible for **more than 25% of the warming** we are experiencing today.
    - It is a powerful pollutant with a global warming potential over **80 times greater than CO2** during the 20 years after it is released into the atmosphere. (Methane Emissions fact sheet, UNEP)

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

The Consequences of Climate Change for the natural world

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

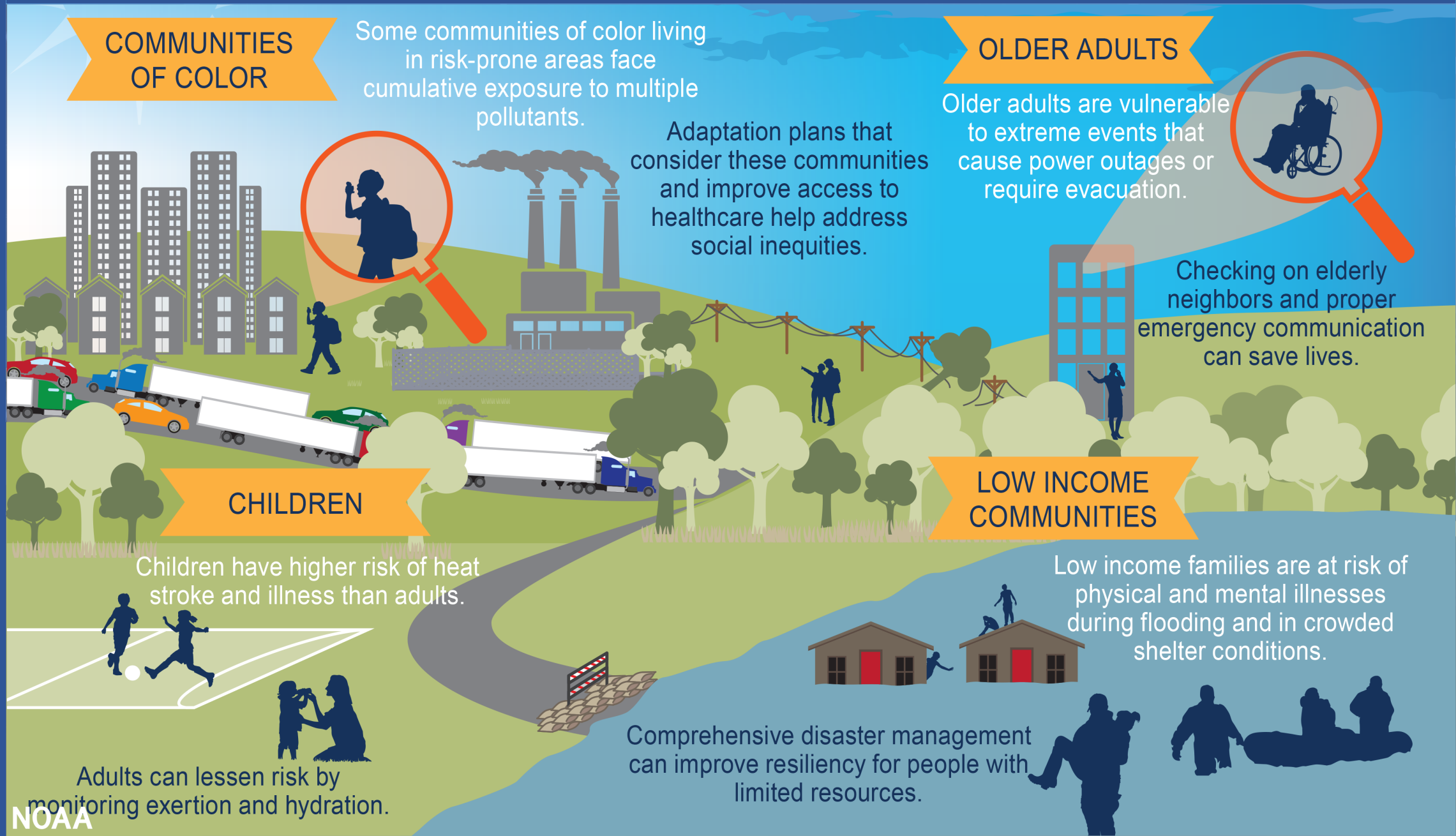
B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

- **High Temperatures:**
  - Global temperatures rose about 1°C from 1901 to 2020.
- **Drought & wildfires**
  - More frequent and severe droughts will increase the length and severity of the wildfire season, particularly in the Mediterranean region.
- **Availability of freshwater**
  - The increase in sudden extreme rainfall is also likely to influence the quality and quantity of fresh water available, as stormwater can cause uncleaned sewage to enter surface water.
- **Sea-level rise, coastal areas & floods** due to thermal expansion of the oceans
  - Sea level rise has accelerated from 1.7 mm/year to 3.2 mm/year since 1993.
  - Glaciers are shrinking: the average thickness of 30 well-studied glaciers has decreased by more than 18 meters since 1980
  - The Arctic's area covered by sea ice has shrunk by about 40% since 1979.
  - Sea-level rise will increase the risk of flooding and erosion around the coasts.
- **Biodiversity & Soils**
  - Direct impacts include changes in phenology (the behaviour and lifecycles of animal and plant species), species abundance and distribution, community composition, habitat structure and ecosystem processes.
  - Saline soils are expected to increase in coastal areas as a result of saltwater intrusion from the seaside because of rising sea levels and (periodically) low river discharges.

Examples of populations at higher risk of exposure to adverse climate-related health threats



Agroforestry & Climate Change mitigation & adaptation

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

- According to the UN Food and Agriculture Organization (FAO**), more than 1.2 billion people around the world practice agroforestry on around 1 billion hectares of land**.
- Moreover, agroforestry can **contribute to climate change mitigation and adaptation** by increasing:
  - ✓ carbon storage,
  - ✓ preventing deforestation,
  - ✓ increasing biodiversity conservation,
  - ✓ producing cleaner water and
  - ✓ controlling soil erosion, thus enabling agricultural lands to better cope with floods and drought events.
- The United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD) recognise the potential of agroforestry to contribute to sustainable development, justifying increased investment in its development.

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

Paris Agreement (2015)

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

- The Paris Agreement is a **legally binding international treaty on climate change**.
- It was adopted by **196 Parties** at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016.
- Its overarching goal is to hold "*the increase in the global average temperature to well below 2°C above pre-industrial levels" and pursue efforts "**to limit the temperature increase to 1.5°C above pre-industrial levels"*** by the end of this century.
- To limit global warming to 1.5°C, greenhouse gas emissions must **decline 43% by 2030.**
- Starting in 2024, countries will report transparently on actions taken and progress in climate change mitigation, adaptation measures and support provided or received based on an **enhanced transparency framework (ETF).** The information gathered through the ETF will feed into the **Global stocktake** which will assess the collective progress towards the long-term climate goals.
- The Paris Agreement is a **landmark** in the multilateral climate change process because, for the first time, a binding agreement brings all nations together to combat climate change and adapt to its effects.

Sustainable Development Goals

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

Six Transformations to achieve the Sustainable Development

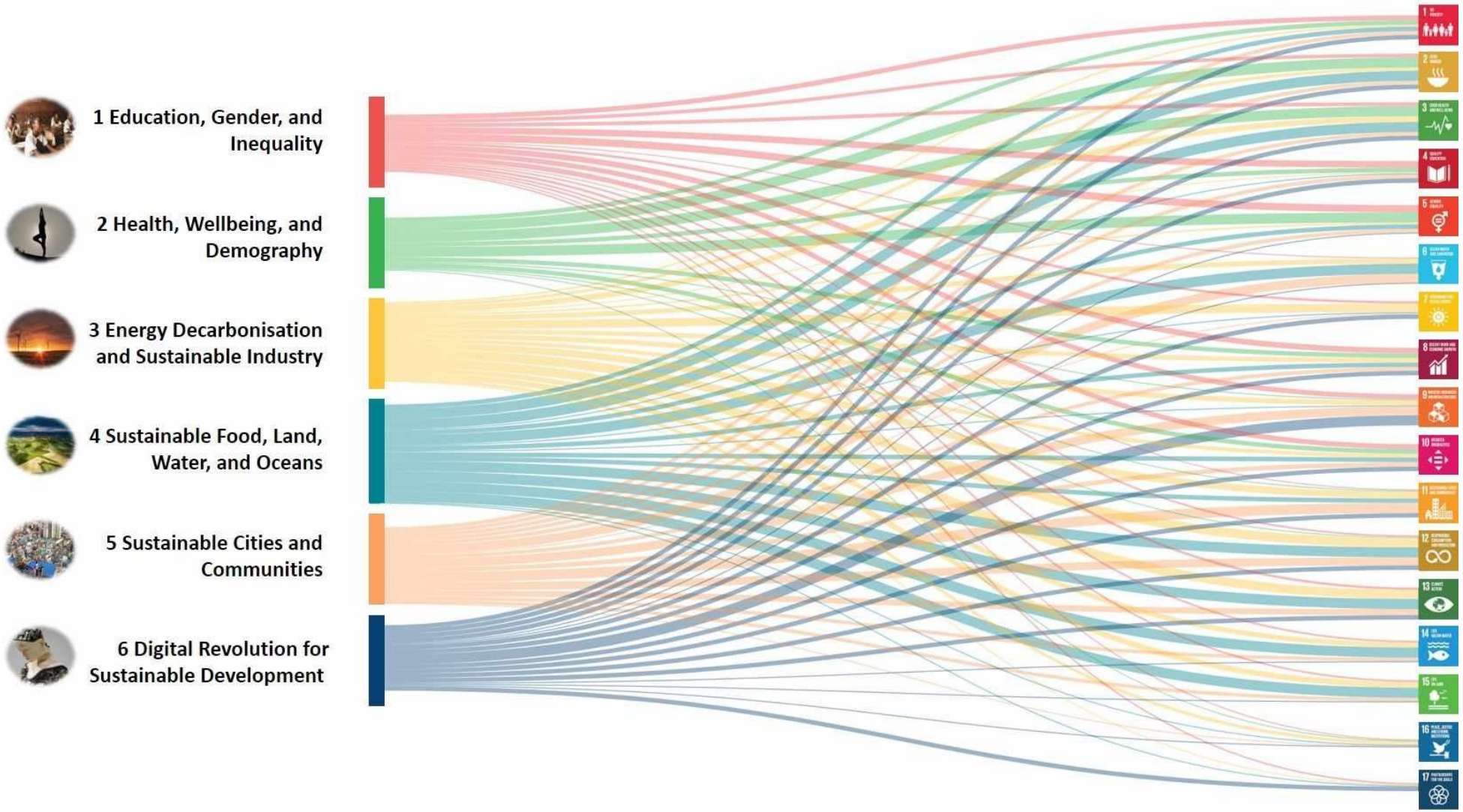
A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models



ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

Transition to Sustainability

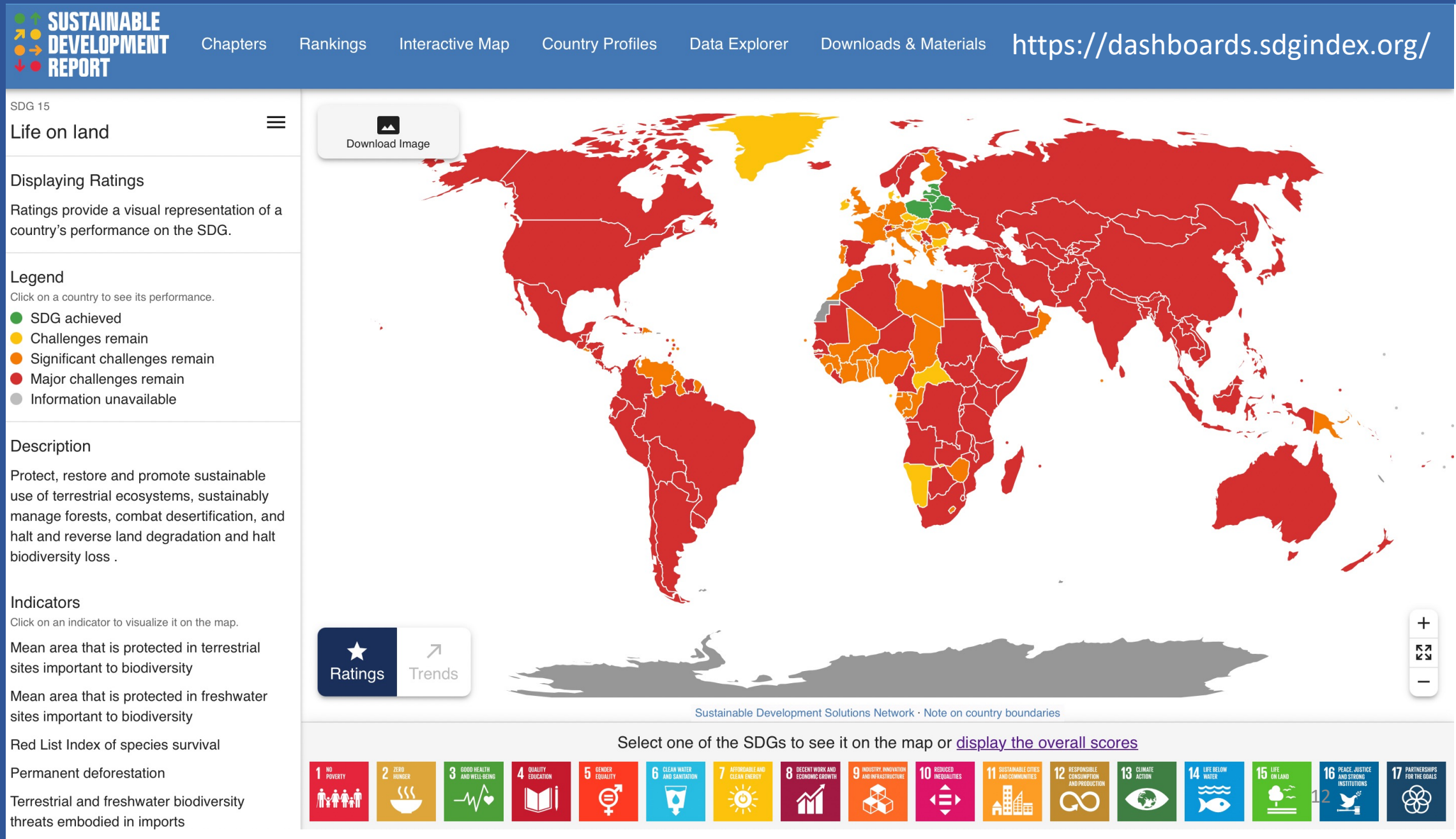
A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models



Transition to Sustainability

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

SUSTAINABLE DEVELOPMENT REPORT

Chapters | Rankings | Interactive Map | Country Profiles | Data Explorer | Downloads & Materials

https://dashboards.sdgindex.org/

SDG 15

Life on land

Displaying Trends

Trends indicate whether a country is on track to achieve the SDG by 2030.

Legend

Click on a country to see its performance.

- On track or maintaining SDG achievement
- Moderately improving
- Stagnating
- Decreasing
- Trend information unavailable

Description

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss .

Indicators

Click on an indicator to visualize it on the map.

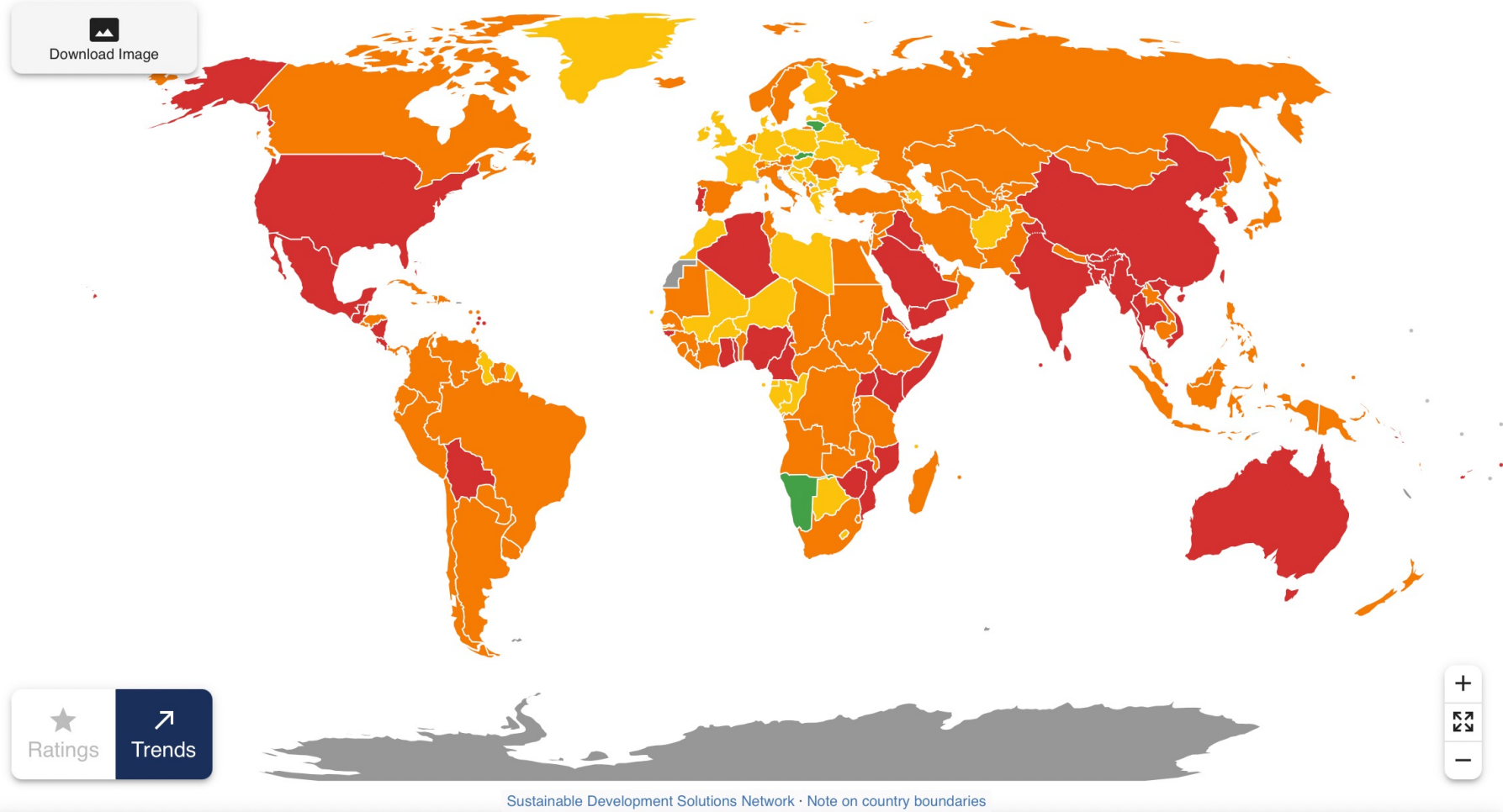
Mean area that is protected in terrestrial sites important to biodiversity

Mean area that is protected in freshwater sites important to biodiversity

Red List Index of species survival

Permanent deforestation

Terrestrial and freshwater biodiversity



Select one of the SDGs to see it on the map or display the overall scores

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

Innovation

From and idea to a start-up

What is innovation?

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

What is innovation?

Innovation is… *seeing a version of the world that doesn't exist yet, and then painting a picture of what this looks like for the rest of the world*

1. Go to www.mentimeter.com
2. Voting code: 5946 9732

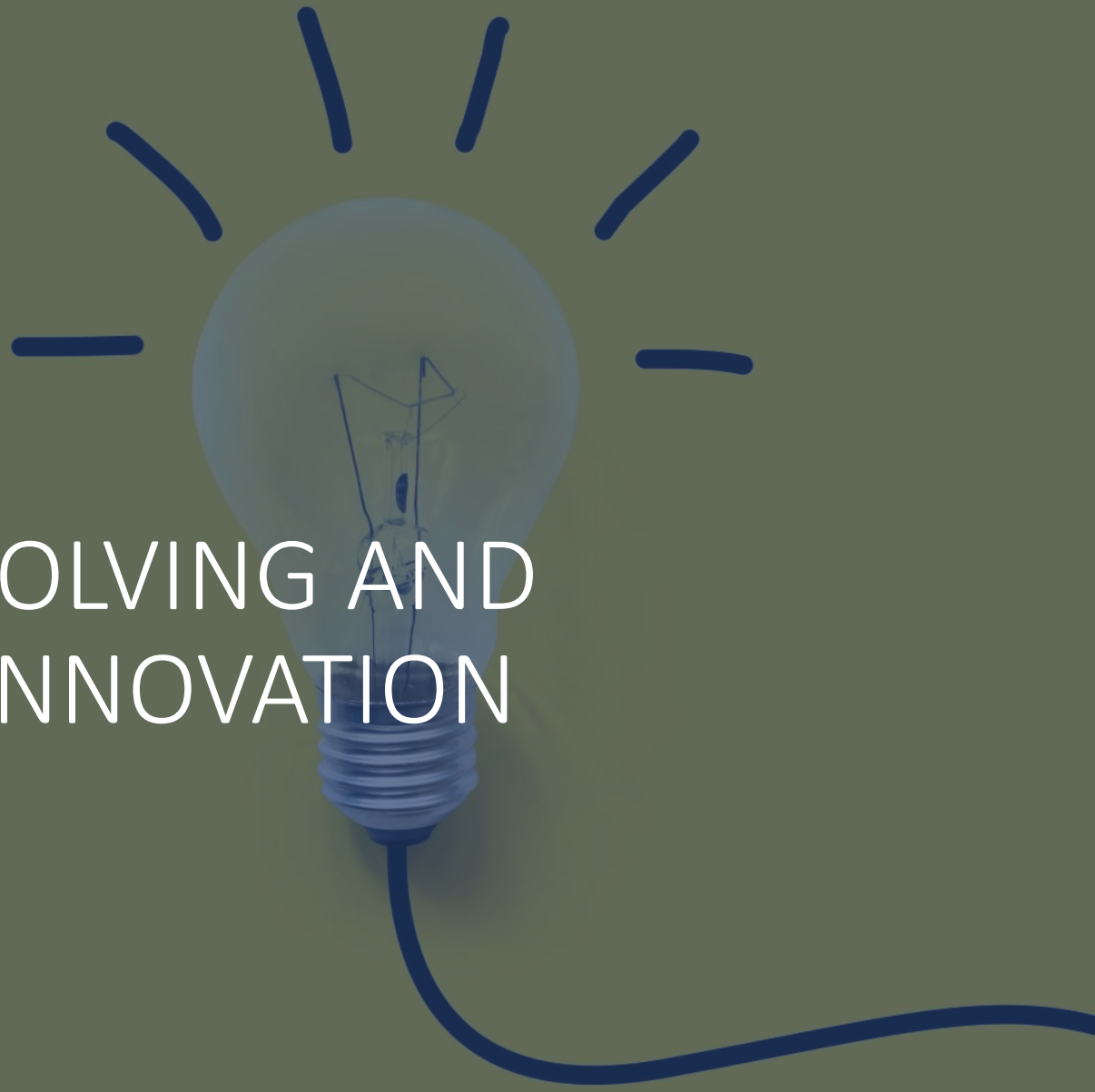
A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models



1. PROBLEM SOLVING AND SYSTEMATIC INNOVATION

A. Climate Change and International Policy Framework

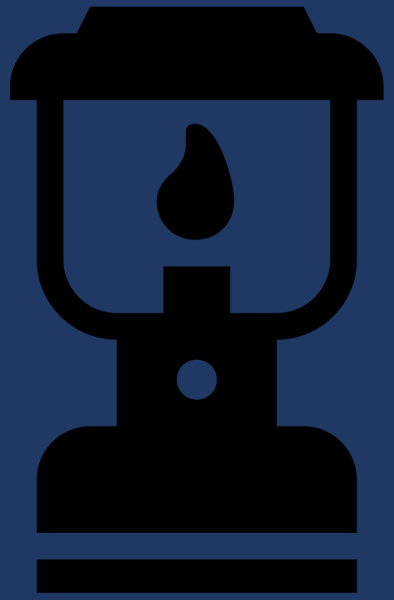
B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

INVENTION



INNOVATION

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

INVENTION

- The process of developing a new technology or capability.
- Invention can occur for its own sake, without serving a demand or specific need.

INNOVATION

- The process of accurately representing a problem and finding a solution, thereby matching a capability (seed) with a problem (need).
  - In a start-up context, that solution will be something that customers want and will pay for.
  - In a non-profit context, it may be something that is highly valuable for the society that some entity will fund.

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

Technology Transfer is…

the process of moving a technology or capability developed in a laboratory or other research setting to a commercial use form through a start-up, large established business, or other organization.

This is also sometimes called **technology commercialization**, although some consider the terms to have separate meanings.

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A.OUTCOME-DRIVEN INNOVATION APPROACH

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

Outcome-Driven Innovation Approach *is…*

a framework and process of innovation that focuses on accurately representing customer needs in terms of the outcome they are trying to achieve or utility they are trying to derive, rather than the product that they are using.

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

B. LINKAGES-DRIVEN INNOVATION APPROACH

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

TEMPORAL EXPANSION

Creating a new activity within a customer's primary activity chain.

SPATIAL EXPANSION

Creating a new activity within an adjacent (non-primary) activity chain.

TEMPORAL RECONFIGURATION

Improving or changing the structure of an activity in a customer's primary activity chain. This typically involves a shift in the boundaries of what activities are typically performed by the firm and what activities are typically performed by the firm's customers.

SPATIAL RECONFIGURATION

Improving or changing the structure of an activity in a customer's adjacent (non-primary) activity chain. This typically involves a shift in the boundaries of what activities are typically performed by the firm and what activities are typically performed by the firm's customers.

A FRAMEWORK TO PROBLEM SOLVING

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

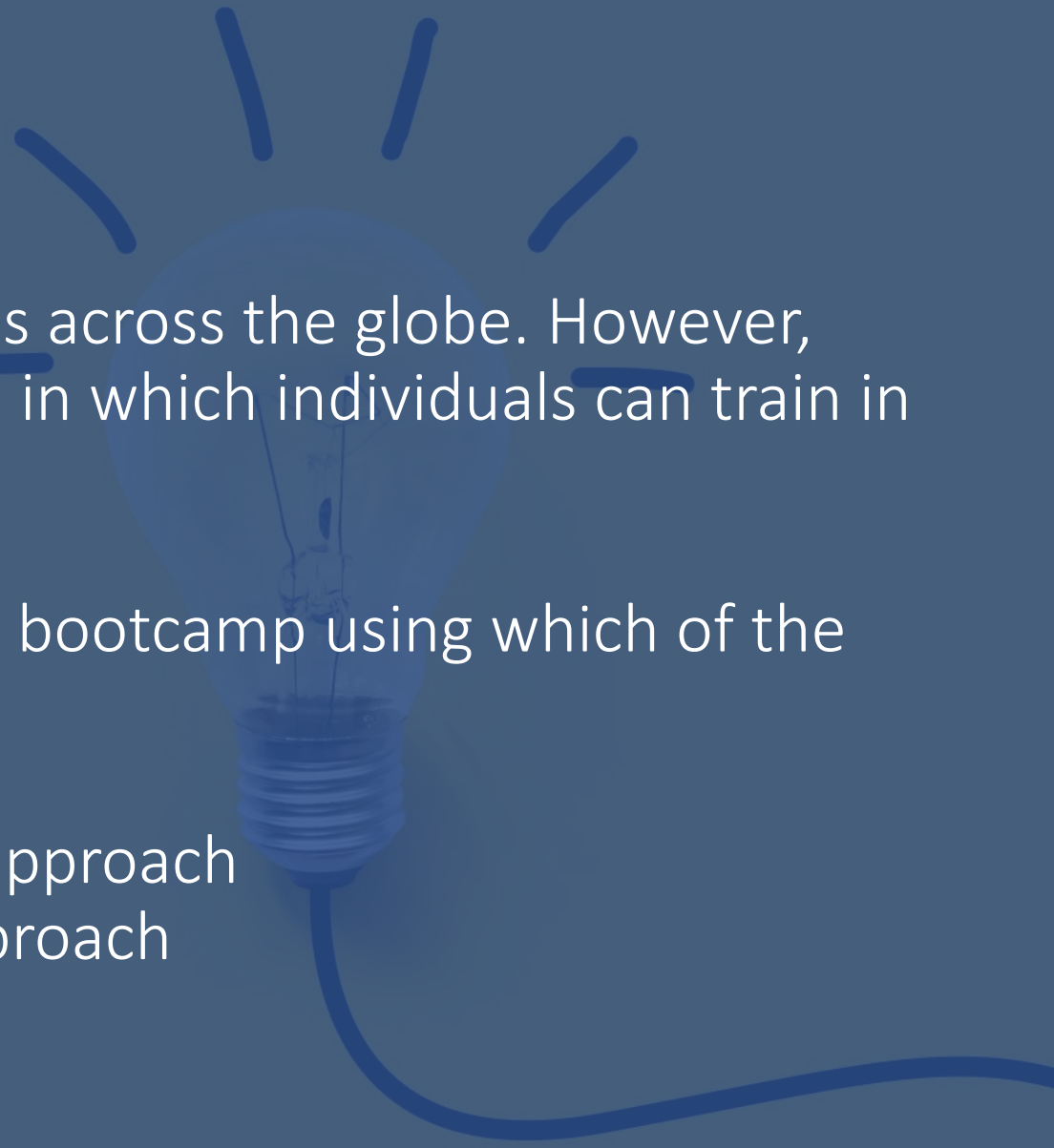
A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models



Nike sells athletic clothes and shoes across the globe. However, recently, they created a bootcamp, in which individuals can train in groups for free (TBC).

Do you think that Nike created this bootcamp using which of the two approaches?

A. An outcome-driven innovation approach
B. A linkages-driven innovation approach

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

2. MATCHING NEEDS AND SEEDS

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

SEEDS-DRIVEN INNOVATION

A process for innovation where the starting point is the capability that a technology can offer

APPLICATIONS INNOVATION

A term closely associated with seeds-driven innovation that describes the search for applications of a new technology or capability, or a new application for an existing technology or capability

NEEDS-DRIVEN INNOVATION

A process for innovation where the starting point is a deep understanding of a customer's needs and wants

NEEDS STATEMENT

A statement that expresses who the customer is, including information regarding: activities, behaviours, motivations, and specific problems experienced when trying to derive a benefit or utility. This is also sometimes called a market requirements document or MRD.

FUNCTIONAL FIXEDNESS

A cognitive bias that prevents people from seeing beyond the traditional applications for a product or technology.

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

B4. Determining Readiness and Market Fit

B5. Financing your venture

B6: From Zero to Hero

B7: Case study

C. Circular Economy: How can I identify new market opportunities using Circularity concepts?

Three Critical Parts of Technology Commercialization

Articulate	Identify	Adapt
Articulate what the technology does	Identify where the functions are needed	Adapt the technology (economically)

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

COMMERCIALISATION

The process of converting technological advancement into economical value

Parameters of commercialisation:

INNOVATION

MAIN PARAMETERS OF VALUE

FUNCTIONS

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

THE PROCESS OF FUNCTIONAL ANALYSIS

A) Discovery	What are we looking for?
B) Search	Search for new application
C) Synthesis & Selection	Which ones are the most promising? Which ones could create the highest value for end users or customers?
D) Validation	What needs to be done to successfully apply our technology for this new application?

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

THE PROCESS OF FUNCTIONAL ANALYSIS

1. Discovery stage

PARAMETERS FUNCTIONS

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

THE PROCESS OF FUNCTIONAL ANALYSIS

2. Search stage

SUBJECT

ACTION

OBJECT

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

THE PROCESS OF FUNCTIONAL ANALYSIS
3. Synthesis & Selection

Our goal is to find patents that perform similar functions that ours, and then see if our technology could do better.

- Which ones are the most promising?
- Which ones could create the highest value?

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

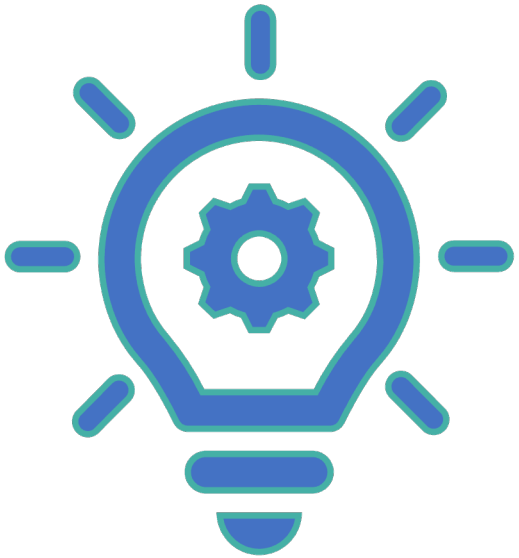
THE PROCESS OF FUNCTIONAL ANALYSIS

4. Validation

A) How easy or difficult is it to adapt our technology for new applications?

B) What value does our technology bring?

C) How big is the market?



A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

CROWDSOURCING

Today, crowds are available on demand

Example: a new formulation of fluoride for their toothpaste, which was dispersed into the atmosphere (Colgate-Palmolive)

InnoCentive: an online marketplace

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

B4. Determining Readiness and Market Fit

B5. Financing your venture

B6: From Zero to Hero

B7: Case study

C. Circular Economy: How can I identify new market opportunities using Circularity concepts?

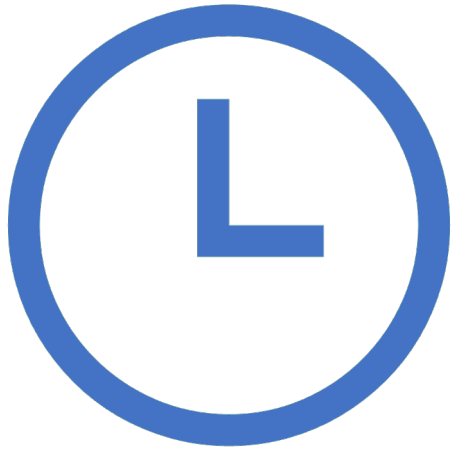
CROWDSOURCING
Marquee example

Longtitude Prize in 1707

They offered 20,000 pounds for anybody they could come up with a working solution to finding the longitude at sea.

Sir Isaac Newton as a chair of the prize committee

The winning solution for this ended up coming by the invention of a clock or chronometer that could actually keep track of time (John Harrison)



CROWDSOURCING

➢CROWDSOURCING

- ❖A method of finding information or solutions to a problem by **inviting ideas and solutions from a large set of experts** (or laypeople, depending on the case) outside the boundaries of your firm or organization.
- ❖Crowdsourcing is a relatively new term used to denote the practice of posting problems and inviting solutions over the internet, though the practice has been around for centuries in different forms. Innovation contests, competitions on technical and design challenges, and data analysis open challenges are all examples of crowdsourcing.

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

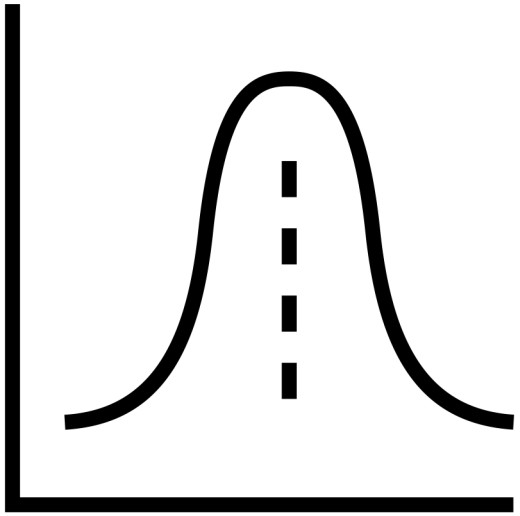
B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

CROWDSOURCING

- Why is it that the crowd can outperform the most elite institutions?



PROBABILITY DISTRIBUTION

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

Crowdsourcing framework

"...GOING TO THE CROWD FOR SOLUTIONS, CAN, IN FACT, OPEN UP DIVERSE PERSPECTIVES AND HEURISTICS THROUGH POTENTIAL PARTICIPANTS FROM DIFFERENT KNOWLEDGE DOMAINS. CROWDS CAN DO THIS SYSTEMATICALLY, AND TODAY CROWDS ARE AVAILABLE ON DEMAND."

-- Karim Lakhani

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

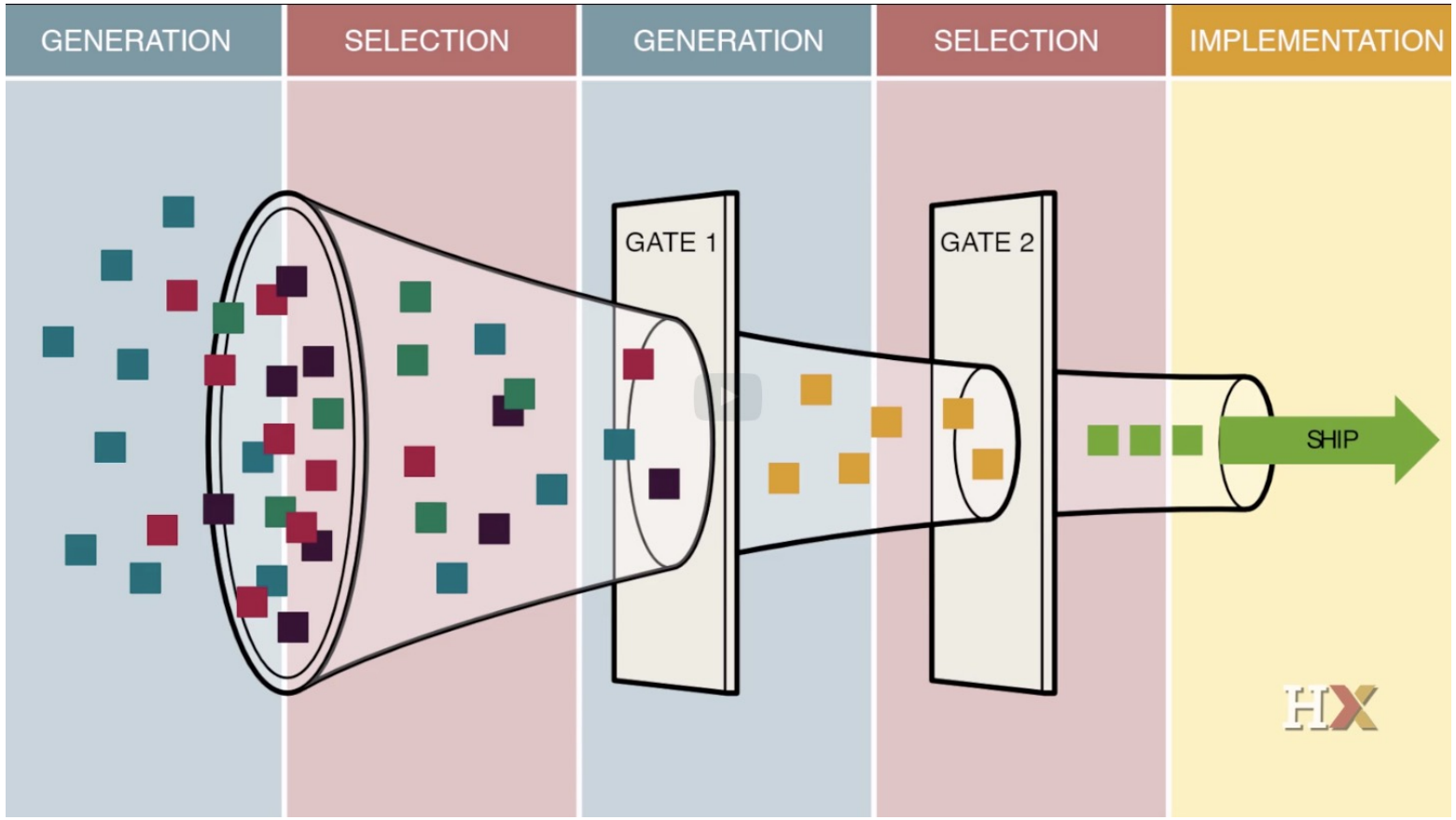
B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

Crowdsourcing framework



A. Climate Change and International Policy Framework

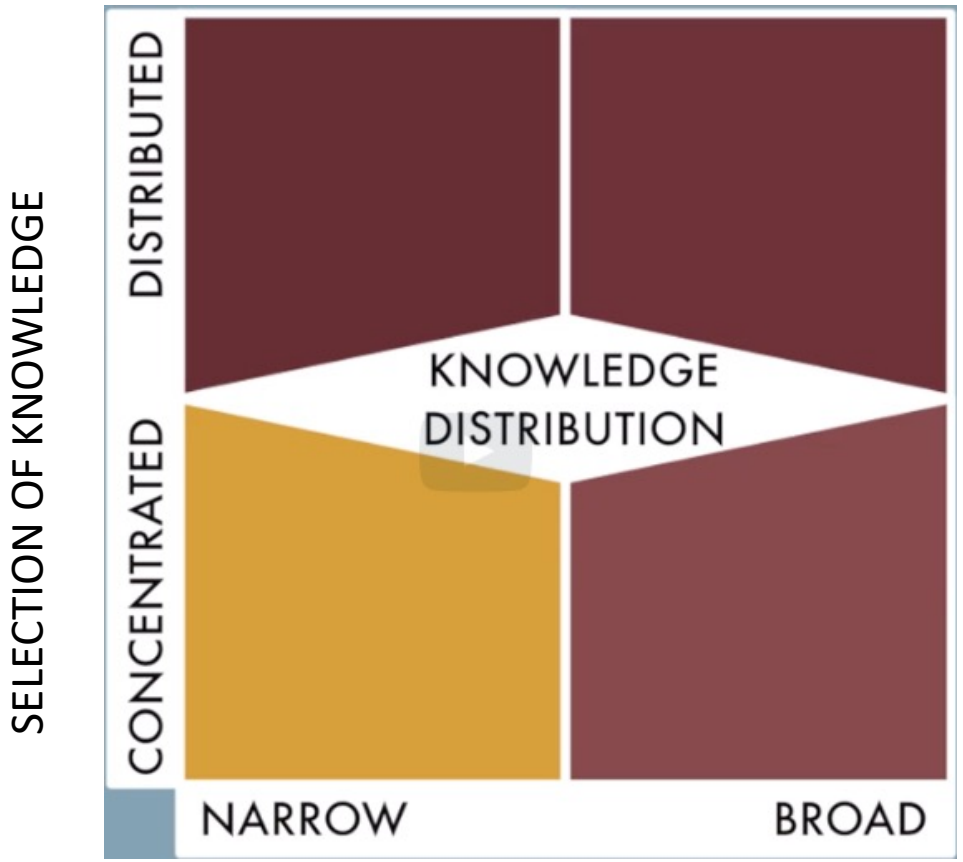
B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

Crowdsourcing framework



ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

What are the steps that you need to consider to commercialize your innovation?

- Innovation
- Main parameters of value
- Functions

1. Go to www.mentimeter.com
2. Voting code: 5946 9732

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

3. GENERATING BUSINESS AND OPERATING MODELS

A. Climate Change and International Policy Framework

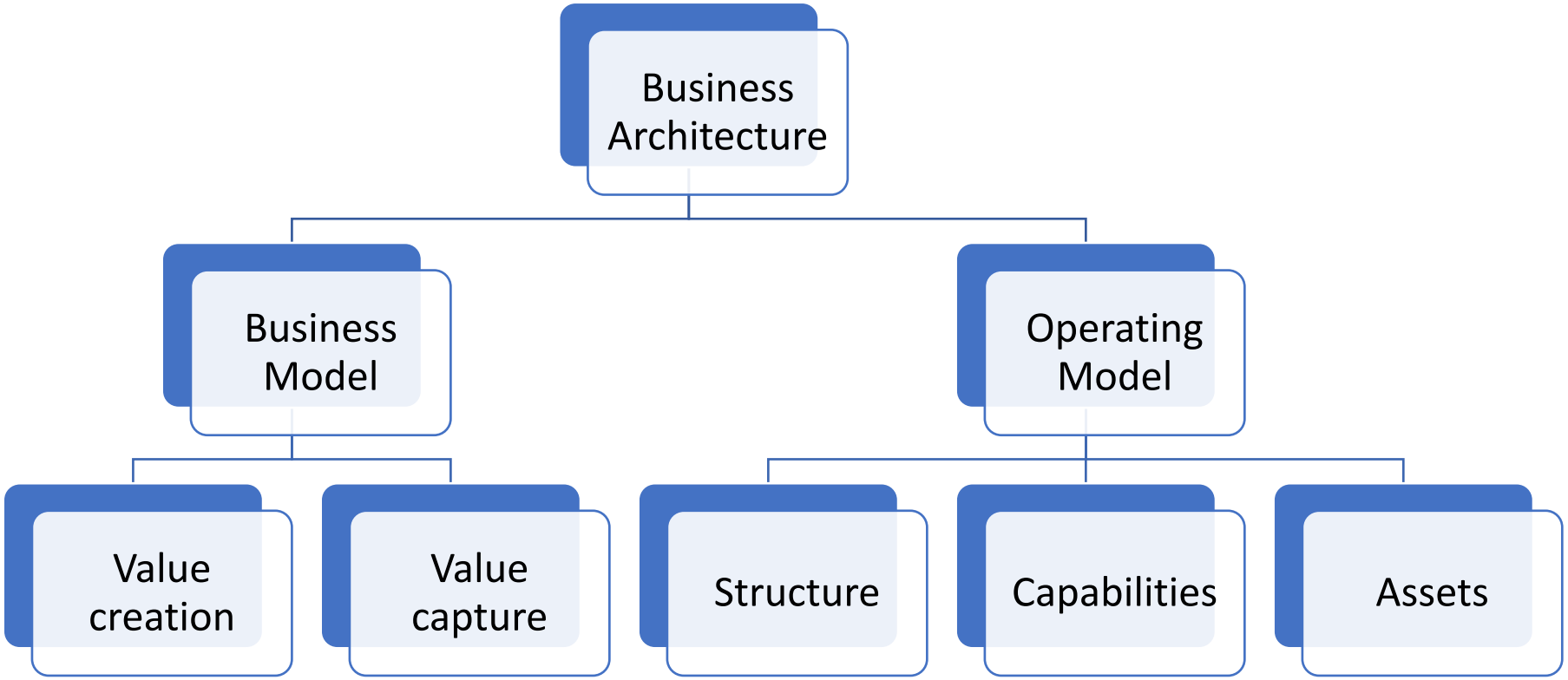
B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

Business architecture



ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

Business model

BUSINESS MODEL

A component of the business architecture that describes how your firm creates value for its customers and captures some of that value as revenue.

VALUE CREATION	VALUE CAPTURE
The process of providing economic, social, and emotional benefits (value) for a customer or society. - **DIFFERENTIATION** - **FOCUS STRATEGY** - **NETWORK EFFECT:** An effect observed in certain products and services, where the value of the product or service increases as more users use it. e.g. Facebook and Uber are examples of platforms that exhibit network effects. - **COMPLEMENTARY SERVICES/ASSETS** - **PERSONALISATION**	The process by which a firm captures or recovers some of the value it has created in the market and for its customers in the form of revenue. - **MARGIN** - **LICENSING** - **SUBSCRIPTION** - **PAY PER USE** - **ADVERTISING SUPPORTING SYSTEM** - **TRANSACTION FEES** - **REVENUE SHARING** - **OUTCOMES-BASED**

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

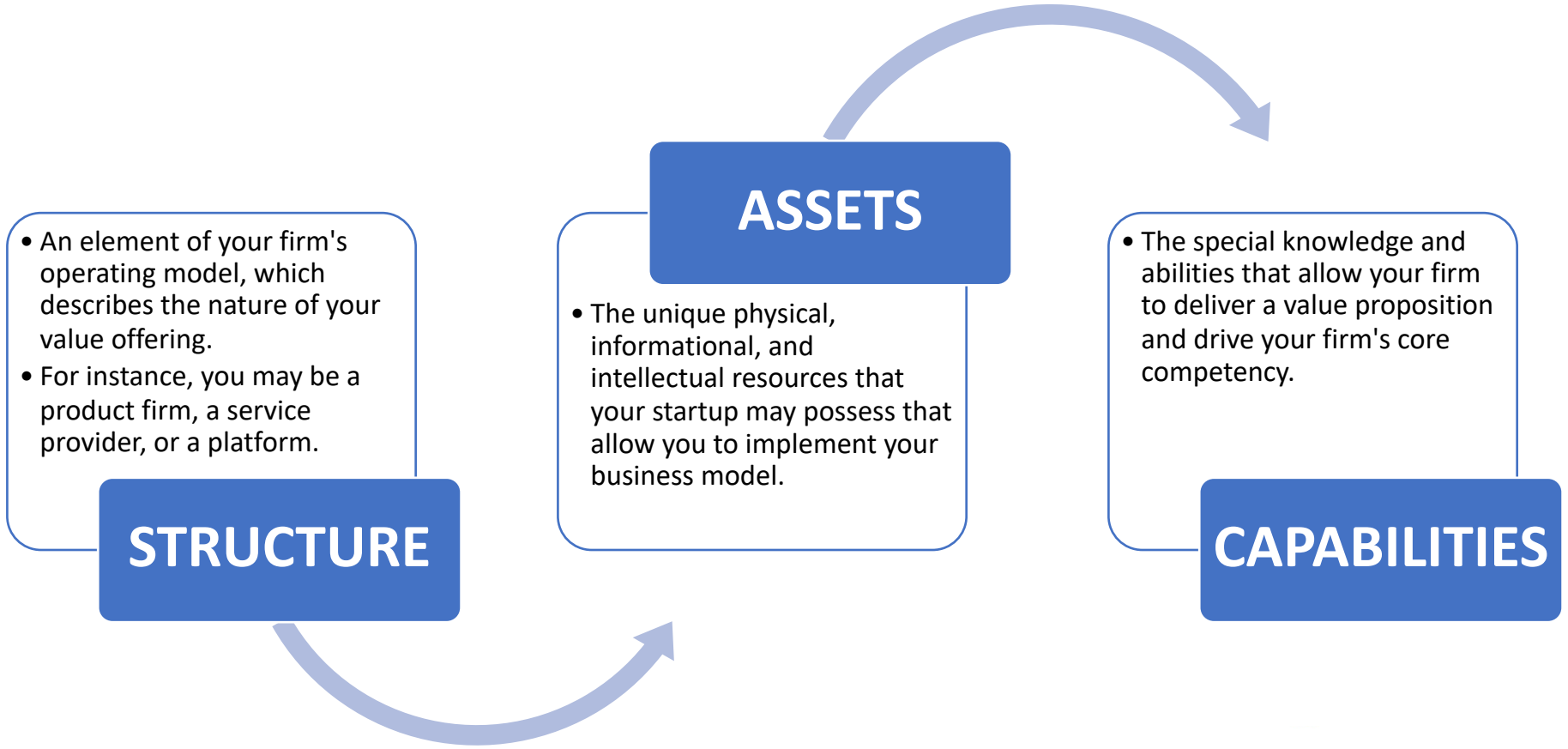
B3. Generating Business and Operating Models

Operating model

OPERATING MODEL

A component of the business architecture, which details the resources at your disposal and how your firm will deliver value to your customers and implement your business model.

The major elements of the operating model are your firm's structure, assets, and capabilities.



A. Climate Change and International Policy Framework

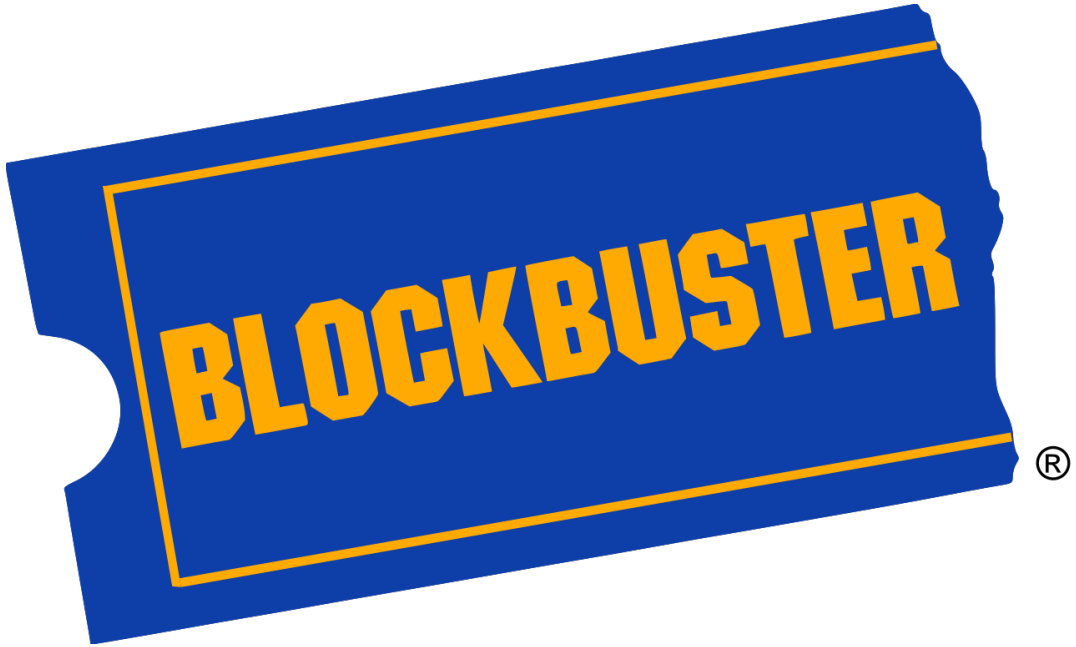
B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

EXAMPLE: Blockbuster & Netflix (1)



ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

EXAMPLE: Blockbuster & netflix(2) business model

	Blockbuster	**Netflix 2.0**
Value Creation	"Hollywood" Hits	Streams
	Store/Locations	On demand
	Recommendations	"Unlimited" supply of content
	Curation	Recommendations via collaborative filtering

	Blockbuster	**Netflix 2.0**
Value Capture	Rental $	Subscription (all you can eat)
	Late fees	
	Rewind fees	
	Snacks	

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

EXAMPLE: Blockbuster & netflix(3) operating model

Blockbuster	Netflix 2.0
Store operations	4,000-5,000 employees
Design/Location (9,000 stores)	Data science
Recruiting (84,000 employees)	Software development
Logistics/Supply chain	Marketing
Demand forecasting	Content development
	Amazon Web Services

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

New entrants

Major challenge: market access

=> Strategy #1: Partner with established companies

LICENSING ARRANGEMENT

- A contract between two organizations or individuals wherein one (the licensee) agrees to pay a fee for the use of intellectual property or other asset that the other (the licensor) owns the rights to.
- In a start-up context, its importance is also that it is a way for highly inventive organizations with strong R&D capabilities to earn revenues from the products resulting from their R&D activities, without having to directly manufacture and sell products or services to mass consumers.

JOINT-DEVELOPMENT PARTNERSHIP

- An agreement between two organizations to develop a new product, service, solution or business line.

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

New entrants

Major challenge: market access

=> Strategy #2: License your breakthrough technology.

- Give a partner the permission to use your discovery in their broader product or system.
- This licensing approach is particularly helpful if your innovation is really a feature of some other company's well-entrenched, well-established product or system.

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

INCUMBENTS

Major challenge: launching breakthrough inventions that impact an existing business

=> Strategy: to spin off the breakthrough technology as a separate venture or business while these breakthroughs can be nurtured and developed independently, like a start-up.

Canon

SONY

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

IDENTIFYING YOUR MARKET

- ✓*What are the industries you're never going to play in because they don't match your core values.*
- ✓*Which of these industries do you actually solve a real problem for?*
- ✓*What is that pain point that you're solving?*
- ✓*How big is this industry?*
- ✓*How big is your play within it?*

ATHENA Research & Innovation Information Technologies
ENI CBCMED Cooperating across borders in the Mediterranean
Project funded by the EUROPEAN UNION
REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA
LIVINGAGRO

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

What is the main difference between a business and an operating model?

1. Go to www.mentimeter.com
2. Voting code: 7731 9968

REFERENCES

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

- Peter Drucker, "The Discipline of Innovation," *Harvard Business Review*, August 2002.
- Priya Ganapati, "Dec. 23, 1947: Transistor Opens Door to Digital Future," *Wired*, December 23, 2009.
- Tom Grasty, "The Difference Between 'Invention' and 'Innovation,'" *MediaShift*, March 29, 2012.
- Michael Riordan, "How Bell Labs Missed the Microchip," *IEEE*, December 1, 2006.
- Mohanbir Sawhney, Sridhar Balasubramanian and Vish V. Krishnan, "Creating Growth With Services," *MIT Sloan Management Review*, Winter 2014.
- Emanuel M. Sachs, John S. Haggerty, Michael J. Cima, Paul A. Williams. *Three-Dimensional Printing Techniques*. U.S. patent 5,204,055 issued April 20, 1993.
  - U.S. Patent and Trademark Office record
  - Google Patents record
- John Hart, "An Introduction to Additive Manufacturing," *YouTube*, published November 28, 2017, accessed September 1, 2018.
- Scott Shane, "Prior Knowledge and the Discovery of Entrepreneurial Opportunities," *Organization Science* 11, no. 4 (2000).
- https://youtu.be/Ft-160cAx38 (MIT Technology Review)
- Giff Constable, Frank Rimalovski, Tom Fishburne, "10 Tips to Remember," *talkingtohumans.com*.
- "Strategies for Qualitative Interviews," Department of Sociology, Harvard University.
- Salim Virani, "The History of Lean Startup," *Salim Virani*, July 20, 2016.
- Tom Nicholas, *VC: An American History* (Cambridge, MA: Harvard University Press 2019).

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

REFERENCES

A. Climate Change and International Policy Framework

B. Innovation: From an idea to a start-up

B1. Problem-Solving and Systematic Innovation

B2. Matching Needs and Seeds

B3. Generating Business and Operating Models

- Kevin J. Boudreau and Karim R. Lakhani, "Using the Crowd as an Innovation Partner," *Harvard Business Review*, April 2013.
- Bryan Gardiner, "Glass Works: How Corning Created the Ultrathin, Ultrastrong Material of the Future," *Wired*, September 24, 2012.
- Lars Bo Jeppesen and Karim R. Lakhani, "Marginality and Problem-Solving Effectiveness in Broadcast Search," *Organization Science* 21, no. 5 (2010).
- Andrew King and Karim R. Lakhani, "Using Open Innovation to Identify the Best Ideas," *MIT Sloan Management Review*, Fall 2013.
- James F. Kowalick, "Use of Functional Analysis and Pruning, with TRIZ and ARIZ, to Solve "Impossible-to-Solve" Problems," *TRIZ Journal*, December 5, 1996.
- Moore's Law. https://www.intel.com/content/www/us/en/silicon-innovations/moores-law-technology.html
- Small Business Innovation Research (SBIR)
- Erica R. Hendry, "7 Epic Fails Brought to You By the Genius Mind of Thomas Edison," *Smithsonian.com*, November 20, 2013.
- In the **search** stage, it is recommended that you conduct a systematic patent search using the United States Patent and Trademark Office Patent Database, instead of a standard web search. The goal of the systematic search is to discover patterns and application areas, not to review/read every patent document in your search. Using the patent database is not as intuitive as performing a standard web search. Experiment with your search terms and be prepared to refine your approach as needed.

ATHENA Research & Innovation Information Technologies

ENI CBCMED Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA REGIONE AUTONOMA DELLA SARDEGNA

LIVINGAGRO

ENI CBCMED
Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

ATHENA Research & Innovation Information Technologies

LIVINGAGRO

Thank you for your attention!

Dr Conrad Landis
conrad@aueb.gr

Lydia Papadaki
lydia.papadaki@athenarc.gr

This course has been presented thanks to the financial support of the European Union under the ENI CBC Mediterranean Sea Basin Programme. The contents of the course are the sole responsibility of the Mediterranean Agronomic Institute of Chania (MAICh) and can under no circumstances be regarded as reflecting the position of the European Union or the Programme management structures.

Forestas
Agentzia forestale regionale pro s'isviluppu de su territòriu e de s'ambiente de sa Sardigna
Agenzia forestale regionale per lo sviluppo del territorio e dell'ambiente della Sardegna
SardegnaForeste

Consiglio Nazionale delle Ricerche

NARC

LARI

CIHEAM MAI CHANIA

ATM CONSULTING sas