

FONDAZIONE
_MeSSInA

ENTE FILANTROPICO



The MeSSInA Foundation

THE FOUNDATION

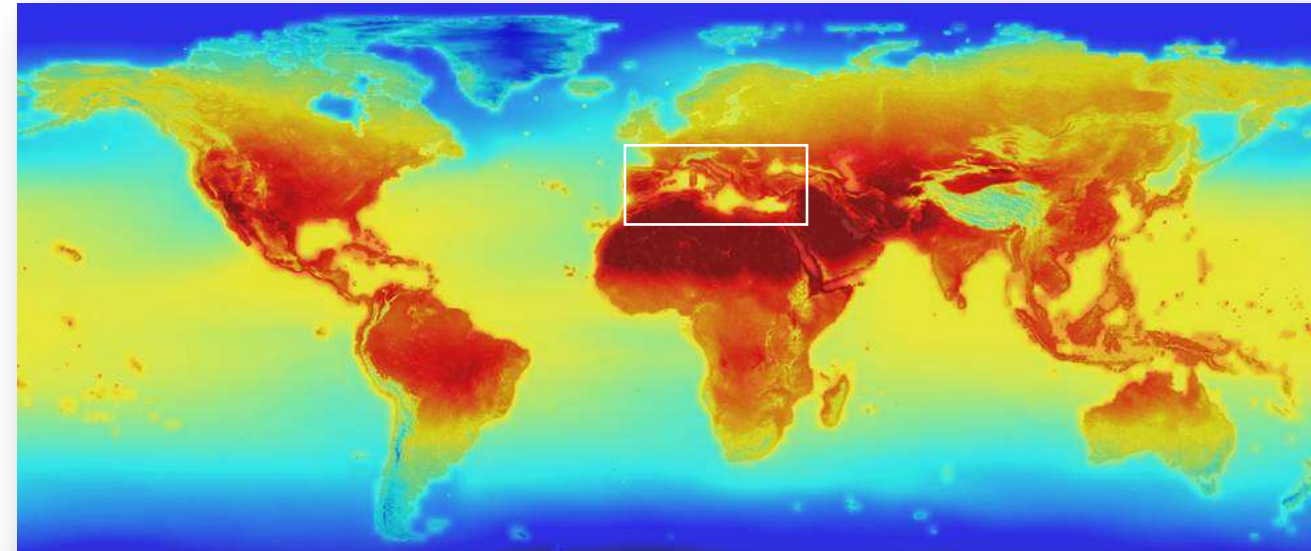
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- The Messina Foundation was created in 2010 to promote **social justice and sustainable economic and human development** by designing, experimenting and promoting **new socio-economic policies**, following the *capability approach*
- The Foundation works creating **fruitful interconnections** among the welfare, cultural, production, financial, research and technology systems, breaking down the silos between them, and today **leads a wide Cluster of Social and Environmental Innovation (CSEI)** made of foundations, social enterprises, CSOs, etc., which is active in several communities throughout Sicily

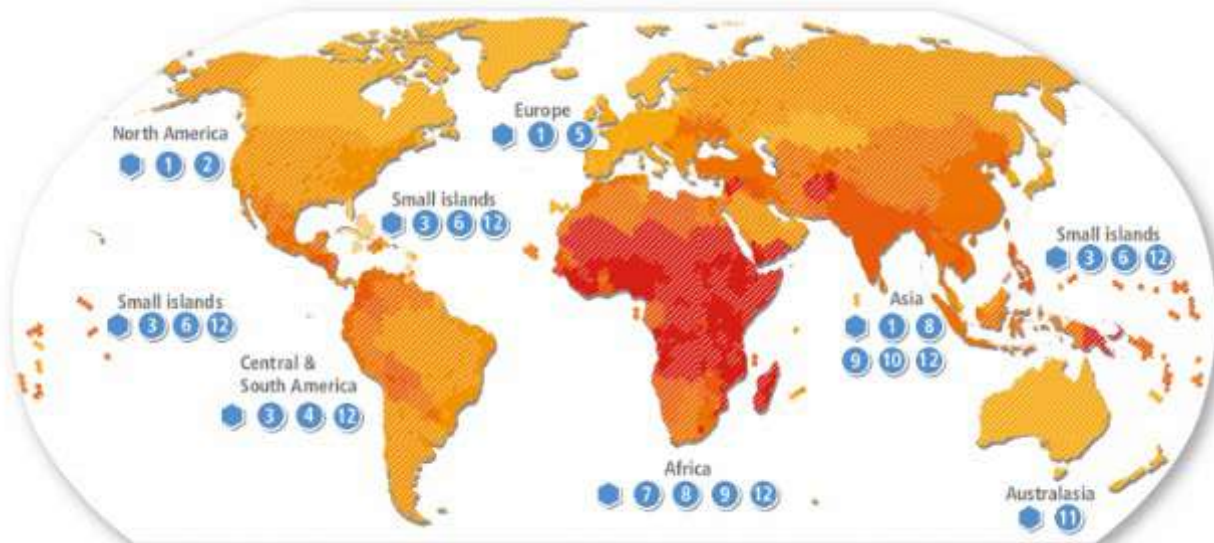


THE CONTEXT: THE MEDITERRANEAN



Observed human vulnerability differs between and within countries and strongly determines how climate hazards impact people and society

(a) Map of observed human vulnerability based on two comprehensive global indicator-systems using national data, plus examples of selected local vulnerable populations and Indigenous Peoples



Messina is a city in Sicily, located in the very center of the Mediterranean which is today **one of the most critical areas** when it comes to climate change:

- Here rising temperatures and rising seas are higher than on a global scale.
- Approximately **260 million people** in the area will be forced to migrate in the coming years due to climate change. Sicily is the most important place of arrival for migrants from the southern shore of the Mediterranean.

THE CONTEXT: SICILY, THE CORE OF THE MEDITERRANEAN



Sicily (4.8 M inhabitants):

- the highest unemployment rate in Italy (21.5%)
- 22.5% of families live below poverty line
- 19.2% of economy is black and illegal



Messina (220,000 inhabitants):

- per-capita income in the city centre is 4 times higher than in the northern part of the city and 6 times higher than in the southern.
- more than 2.000 families dwell in slums built in the aftermath of 1908 earthquake



Due to its «extreme» conditions Sicily is a relevant territorial laboratory to test policies addressing climate change and social inequalities and vulnerabilities

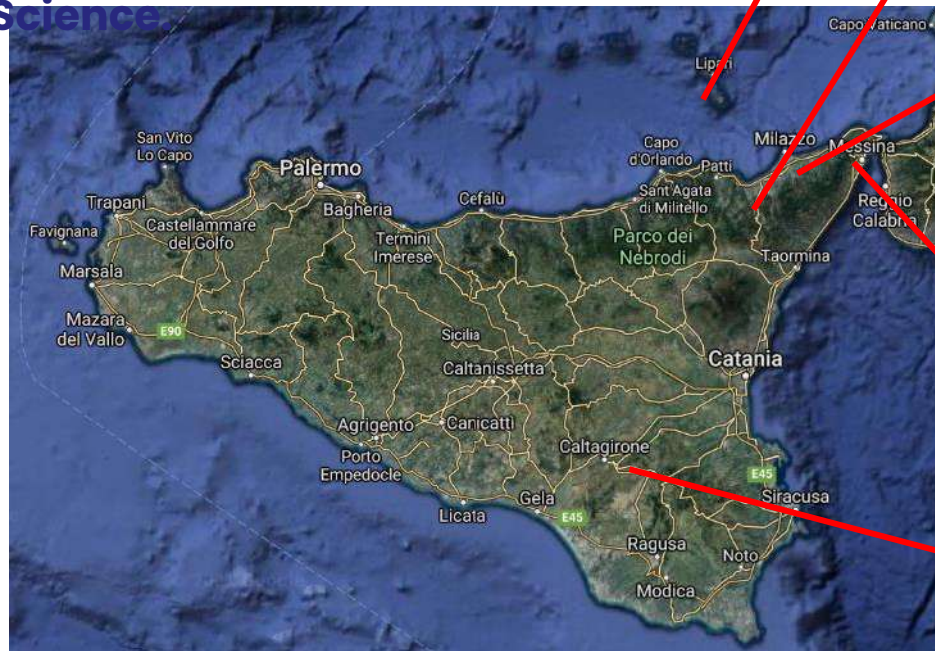
THE APPROACH

- **The dynamics of local communities and territories are chaotic**, in the scientific sense of the term: **a generative fluctuation can alter the course of history** of local communities by changing negative trend that seems unavoidable.
- The **role of the MeSSInA Foundation** is that of implementing long-lasting programs in the target territories that can become **the event capable of activating change over the long period**.
- Foundation's programs are focused on the creation in target territories of **socio-economic systems** integrated, incremental, sustainable and not dependent on public funding. These systems are **capable of triggering and catalyzing processes to expand the individual and social capabilities of communities**.

GEOGRAPHICAL DEVELOPMENT

In all communities for which the Foundation has created a Fund, a **core starting activity is the regeneration of an abandoned/disused building**, which becomes the Foundation's operational headquarters and a physical hub promoting sustainable local development policies.

We call these places **Parks of Beauty and Science**.



SALINA ISLAND



NOVARA DI SICILIA



ROCCAVALDINA



MESSINA:

- Forte Petrazza
- Capo Peloro
- Fondo Saccà



MIRABELLA
IMBACCARI



The Park of Beauty and Science

The network of the Parks of Beauty and Science (PBS), is a social, educational, economic and research infrastructure promoted by the Community Foundation.

All PBS stem from and evolve around the main contemporary issues that our societies are facing: the need of contrasting economic and social inequalities on the one hand, and climate change on the other hand.

The hosting territories have suffered for the past decades from a critical decay: today, they are investigating and experimenting urban and social regeneration processes.

All PBS are based on the interconnection between scientific/technological research and needs, desires and sustainable development of territories and local



**I PARCHI DELLA
BELLEZZA E DELLA
SCIENZA (IPBS)**

The Park of Beauty and Science in Roccavaldina

Roccavaldina is a small town located in an inland area of the province of Messina, in Sicily. It is also characterized by socio-economic and demographic indicators typical of inland areas. It is no coincidence that its artisanal area has been completely abandoned for years.

Among other actions, the Foundation's activities in Roccavaldina (funded by LIFE program and co-funded by the Foundation) aim at producing **manufacts made by biodegradable plastics**, giving adequate answer to some of the most pressing **environmental issues** related to **Beer Spent Grain (BSG) disposal** and **Fossil based Plastic (FbP)** production, tackling **at the same time relevant social issues**, thanks to the engagement of the **social economy sector**.



Context: the beer industry

- **39.5 Million L of beer** were produced in EU in 2020
- Every **1hL of beer** produced generate **20 kg of BSG**
- **70% of BSG is used as animal feed**, around 10% goes to produce biogas, and the remaining **20% is landfilled**
- every **ton of BSG landfilled releases 513 kg CO₂** equivalent of greenhouse gases, raising the surface temperature of the planet
- according to a 2019 survey:
 - an increasing number of Farmers are declining to take BSG as animal feedstock
 - none of the breweries own technologies for on-site storage of the spent grain
 - BSG waste disposal costs are between 75-100€/t in EU.

Beer production linked to the Foundation



- ❓ Birrificio Messina is a cooperative created as workers buyout, incubated by FM.
- ❓ the Brewery has been profitable since its very first year of activity, becoming a national best practice of workers buyout and now employs 28 people, producing 45.000 hectolitres/year which are sold all over Italy.
- ❓ In this framework, Birrificio provides BSG, coming from the beer production and implemented semi-industrial pilot plant for BSG pre-drying and wastewater purification in order to: reduce transportation costs and impacts of BSG and recover water for internal use.



Context: the fossil based plastic industry

- Global consumption of plastic is accelerating. Over half of the plastic production ever manufactured has been produced since 2000 and we are set to double our current global annual production by 2050.
- A report by the World Economic Forum showed that if we do not act on the plastic problem, there will be more plastic by mass than fish in the oceans by 2050.
- In western Europe, the average annual plastic consumption is around 150kg per person — more than twice the global average of 60kg.
- annual emissions related to plastic production in the EU amount to around 13.4 million tonnes of CO₂.



Context: bioplastic

- Innovative biobased, biodegradable and compostable plastics play a substantial role in fighting plastic pollution.
- Bioplastics currently represent roughly 0.5 percent of the over 400 million tons of plastic produced annually in the world.
- Bioplastics are used for an increasing variety of applications.
- Global bioplastics production capacity is set to increase significantly between today and 2028.
- The biodegradable and compostable plastics industry is represented in **Italy** by **271 companies**.
- Totally the sector has **3,005 employees**.
- The **turnover** of the whole industry has grown significantly **over the last ten years**, from under 370 million euros in 2012 to 1,168 million euros in 2022, with an **average annual growth rate of over 10%**.
- the **total volumes of bioplastic products in Italy** had an increase of 2.1% over the previous year and the **growth rate between 2012 and 2022 was 226%**.

Business idea and present situation

The business idea consists in the valorisation of the BSG produced by Birrificio Messina, using it as filler for the production of new bio-plastics.

Today:

The production plant is fully installed and the last works for the activation are undergoing.

The production of small quantities of compound for tests is feasible and running.



the compou

ecobuddy



Business idea – social and environmental dimensions

The production plant is located in a marginalized village affected by depopulation and lack of economic opportunities: the new factory is part of a wider local sustainable development strategy designed by the Foundation in cooperation with the municipality.

The production site was previously abandoned and has been fully regenerated. The plant will play a core role in the development of the area and will also host:

- 1) An educational centre on biomaterials, on ecological transition and on the protection of seas and oceans, whose pollution is mainly due to fossil-based plastics;
- 2) A green fab lab where, through 3D printers, creative workshops are being organised for local young people, focusing on the design and development of prototypes and objects made of bioplastics. This will open new green job opportunities for local people.
- 3) At the same time the plant will become the central hub of a local Renewable Energy Community, sharing the energy produced with local households.

The surplus generated by the company will be reinvested in local actions to tackle education poverty. This action is also creating specific job opportunities for disadvantaged people. 1 person, selected in cooperation with the local Health Authority, has already been hired in the production plant.

THANK YOU!

www.fdcmessina.org

