



Milan

Circular Economy Strategy within the Resilience Strategy

Towards Circular Cities





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DEDICATED TO HELPING CITIES AROUND THE WORLD BECOME MORE RESILIENT

- 2013** Created by the Rockefeller Foundation
- 2013** The first group of 32 cities is announced in December
- 2014** The second 100 Resilient Cities Challenge is carried out, where 330 applications were received from 94 counties. 2013 – The first group of 32 cities is announced
- 2015** November marks the third 100 Resilient Cities Challenge
- 2016** Final group of cities was announced in May after reviewing over 1,000 applications from prospective cities.
- 2017** **The city of Milan joins 100 Resilient Cities in December**

Innovative mayors, a recent catalyst for change, a history of building partnerships, and an ability to work with a wide range of stakeholders.

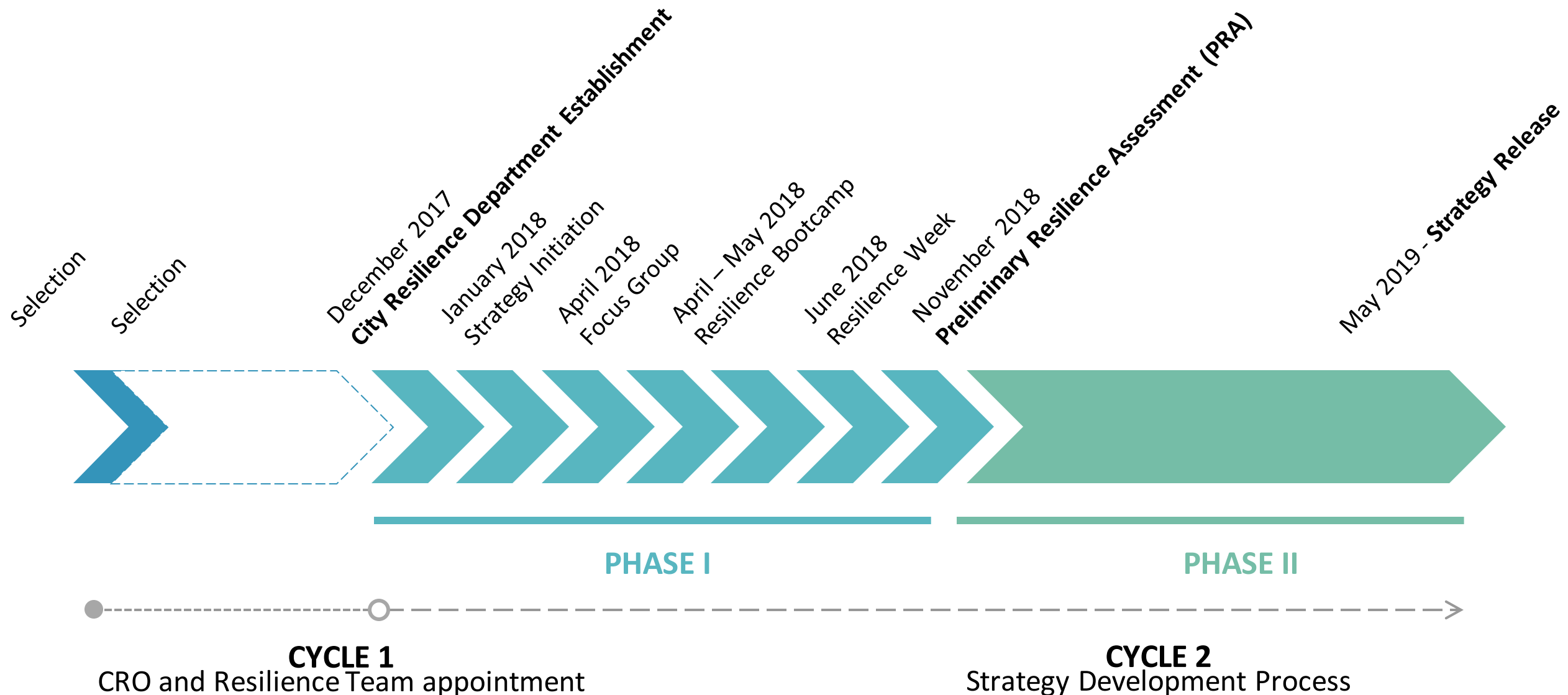


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WHERE WE ARE NOW AND NEXT STEPS

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THE RESILIENCE FRAMEWORK

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Identifying a specific figure within the administration: the Chief Resilience Officer

Development of a Resilient Strategy for the City of Milan

Access to a platform providing services and support towards implementation of the strategy

Integration in the 100 Resilient Cities Network



Helping complex urban systems become more integrated and organized

Valuing solutions efficiently



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WHAT ARE THE ENVIRONMENTAL, SOCIAL AND GOVERNANCE CHALLENGES FACED BY MILAN?

SHOCK

-  Rainfall Flooding
-  Infrastructure Failure
-  Financial/Economic Crisis
-  Cyber attacks
-  Hazardous Materials Accident

STRESS

-  Water and air pollution
-  Extreme heat and heatwaves
-  Degradation of urban areas
-  Disruption due to construction sites
-  Social exclusion and inequality
-  Terrorist attacks & security risk
-  Influx of migrants
-  Riots or civil unrest
-  Lack of affordable housing
-  Aging population

THE 6 DISCOVERY AREAS

OUR SIX DISCOVERY AREAS ENCOMPASS THE SHOCKS AND STRESSES IDENTIFIED FOR MILAN

1 Milan City of Water

Infrastructure & Energy |
Heritage & Future Services

2 Living Milan

Social innovation | Housing
Solutions | Training and Work

3 Cool Milan

Climate adaptation | Livability
and quality of life | Agriculture



4 Circular Milan

Resources | Waste | Food Policy
| Innovation | Productivity

5 Safer Milan

Security | Risk Management |
Digitalization

6 Next-US Milan

Future trends & infrastructure



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CIRCULAR ECONOMY AND FOOD

MILAN FOOD POLICY



The Milan Food Policy, developed in 2015, is a multidimensional approach around 5 key priorities, 16 guidelines, 18 actions: **food loss and waste reduction** being one of the most important, engaging several local actors such as **research centers, food businesses, food banks, non profit organizations, foundations**.

Milan wants to reach the goal of **reducing food waste by 50% by 2030** with the help of local actors. Through the Food Policy implementation the city will try to address all these actors to achieve this goal. The policies connected to the reduction of food losses and waste are combined with those related to the waste cycle management to increase the overall sustainability of the system with an approach to circular economy.



MILAN FOOD POLICY



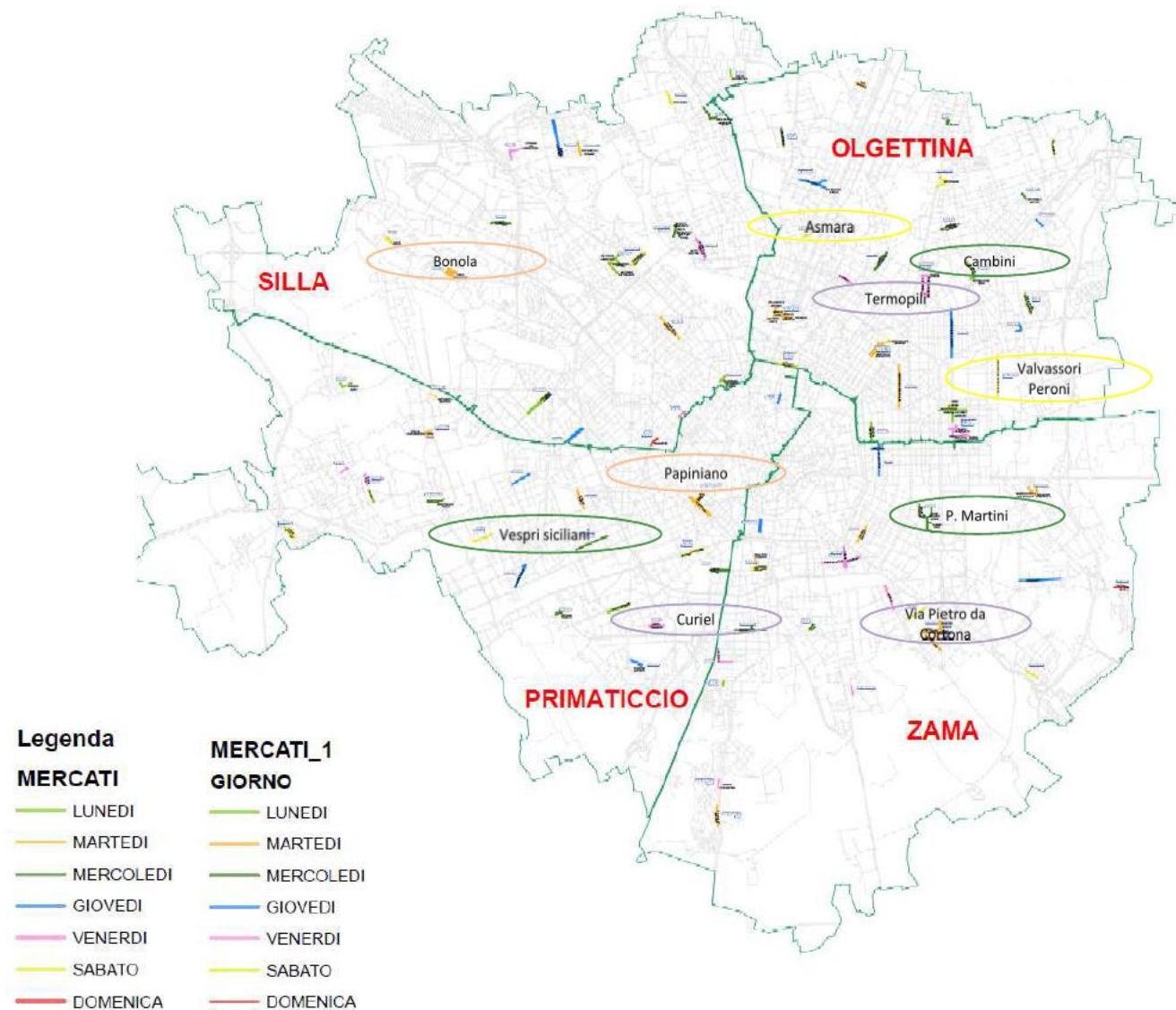
Within the Food Policy in 2015 **4 guidelines for food waste priority** were defined and they establish that the city, in cooperation with local actors:

4 GUIDELINES FOR FOOD LOSS AND WASTE

- Promote actions of **information and education** addressed to citizens and local actors in order to reduce losses and waste.
- Promote **circular economy** in the food system.
- Promote **recovery and redistribution of food losses** creating relations among the local players (charities and food banks).
- Promote more **rational use of packaging**.

CIRCULAR ECONOMY AND FOOD

OPEN AIR MARKETS TO REDIRECT FOOD



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CIRCULAR ECONOMY AND FOOD

AGRICULTURE AND THE ROLE OF THE CITY OF MILAN



OPEN AGRI, a collaboration with the Comune di Milano, is a Hub that promotes development projects involving SMEs and startups to **accelerate new food enterprises** in the city, to **promote green transport for food** companies and to foster **skills and competences to lower the environmental impacts of farming**.

On the social dimension, community-led initiatives for inclusion, urban regeneration, social and territorial cohesion projects will be implemented.

Regarding the sustainable and technological dimensions, the project will prototype disruptive and innovative solutions for peri-urban agriculture through new ways for food production, and new tools such as the “kitchen fab-lab” and the aquaponics system will be tested.



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CIRCULAR ECONOMY AND FOOD

AGRICULTURE AND THE ROLE OF THE CITY OF MILAN



Milan Municipality

land and farm property
600ha on 2.910ha inside Milan
59 municipal farms (15 active)
on a total of 117 farms

Milan Agricultural District

1.150 ha 31 farms

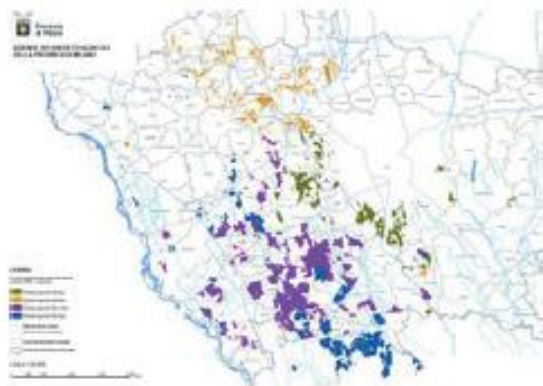


Milan Southern Agricultural Park

47.000 ha on Agricultural Park
3.636 farms

Milan Metropolitan City

67.338 ha in Metropolitan Area
344 million euro of GDP / year



5 Agricultural Districts

Milan Agricultural District

31 farms, 1.150 ha
40% of Milan Municipality land

Rice and Frogs

63 farms, 30.513 ha

DINAMO, 45 farms, 3.880 ha

Olona Valley, 45 farms, 1.500 ha

DAMA



Big player landowner

Hospital foundation

8.500 ha of property
100 farms



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CIRCULAR ECONOMY AND FOOD

UNDERSTANDING MILAN'S SOURCE OF WASTE IN THE FOOD SYSTEM

Contributors to food waste



38.5%

Production



3%

Transformation



16.5%

Distribution & Catering



42%

Consumption



100kg

Waste per capita-year
along supply chain

Domestic waste of an Italian family equivalent to monthly grocery bills of a Milanese family



399€ / month

Monthly grocery bill of a Milanese family



454€ / year

Domestic waste of an Italian family



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CIRCULAR ECONOMY AND FOOD

COMBATting MILAN'S FOOD WASTE THROUGH 3 INNOVATIVE PLANS

1. 20% TAX REDUCTION FOR DONATED FOOD LOSSES

In 2018 Milan adopted a reduction on the waste tax for food losses donation. This new regulation aims to reduce 20% of the tax for the first year in favor of food businesses (supermarkets, restaurants, canteens, producers etc.) that donate their food losses to charities.

2. GETTING SCHOOL CANTEENS INVOLVED

106 School Canteens
connected by charity
food donation systems

150 Tons of food provided

- 91t Fruit
- 50t bread
- 9t complete meals

31,000 reusable doggy bags to bring non perishable leftovers home.

3. OPEN STREET MARKETS TO REDIRECT UNSOLD FOOD

Waste Management Municipal Agency is supporting a non-profit Association active in the open street markets for food recovery and donation by engaging people in need. This means 150kg per market per week, and 90 tons of food per year



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COLLECTING BIOWASTE FOR COMPOST AND BIOGAS

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The separate collection of biowaste is one of the **strengths of Milan waste management system**: this good practice has been encouraged by the introduction of the door-to-door collection system, with a process that began in November 2012 and reached in June 2014 **100% coverage** of the Municipality.

This system allowed the city to overcome **in May 2014 the level of 50% of separate waste collection (compared to 36.7% in 2012)**, a record in Europe (also compared to other European cities with more than 1 million inhabitants) that makes of Milan a “virtuous case” at an international level.

The biowaste collected has an excellent quality (<5% of pollutants), and Milan transforms it into **compost for the soil and biogas for energy**.



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CIRCULAR ECONOMY AND FASHION

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THE FASHION SECTOR IN MILAN

Milano è conosciuta a livello internazionale come **una delle quattro capitali della moda** insieme a Parigi, Londra e New York.

Sono 34.468 (il 15,2% del totale nazionale) le imprese attive nel settore della moda in Lombardia.

Fra queste se ne contano 14mila impegnate nella produzione moda e oltre 20mila specializzate nel commercio e nel design.

Milano è in testa alla classifica con il 37,9% (13.079 unità) delle imprese del **settore moda** operanti nella regione, nelle quali sono impiegati 90mila addetti.

I numeri danno al capoluogo lombardo un peso enorme su scala nazionale: il 5% delle imprese italiane, il 10% degli addetti del settore e quasi **un quinto dell'intero fatturato nazionale**.



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CIRCULAR ECONOMY AND FASHION

IMPACTS OF THE FASHION SECTOR

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Emissioni d'energia

67 miliardi euro in
gioco all'anno

Uso di sostanze chimiche

7 miliardi euro in
gioco all'anno



Consumo d'acqua

32 miliardi euro in
gioco all'anno

Creazione di rifiuti

4 miliardi euro in
gioco all'anno



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CIRCULAR ECONOMY AND FASHION

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A NATIONWIDE INITIATIVE FROM THE CAMERA NAZIONALE DELLA MODA ITALIANA

Green Carpet Fashion Awards

On 23rd September 2018, CNMI in collaboration with the Municipality of Milan and the Italian Trade Agency, announced the green carpet fashion awards, which would take place during Milan Fashion Week, that awarded and celebrated the best in sustainability in the luxury fashion chain.

Manifesto for the sustainability in Italian Fashion

Also by the Camera Nazionale della Moda Italiana, the manifesto places emphasis on design for quality products that minimize impact on ecosystems as well the choice of raw materials.

International RoundTable on Sustainability 2018

In March, the CNMI carried out 3 roundtables that aimed to create a circular industry, to address the digital transformation on the fashion supply chain, and to address the use of chemicals in production cycles.



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CIRCULAR ECONOMY AND FASHION

LINKING THE FOOD SYSTEM AND THE WORLD OF FASHION

700,000 Tons

Of citrus waste is produced
annually in Italy

Illegal Disposal

or expensive disposal practices
prompted many juice factories
to close

Sustainable Textiles

are increasing in demand not
only in Italy but for the entire
fashion industry

ORANGE FIBER, an Italian company based in Sicily, developed a disruptive technology that creates innovation materials out of industrial by-products, mainly orange peels, that does not rival food consumption. This industry was facing several challenges, but the creators succeeded in overcoming them to bridge the gaps. Italian designer Salvatore Ferragamo is the first brand to use the exclusive Orange Fiber fabric.



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CIRCULAR ECONOMY AND INDUSTRY 4.0

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NEW CRAFT & URBAN MANUFACTURING



350,000 jobs are in manufacturing (in Milan)



1st city in Italy for manufacturing startups



10 Fablab/makerspace in the public register of the municipality

In the EU, "about 8 million jobs may be lost in the coming years in the field of digital manufacturing"

Fear of short-term job losses

Lack of skills in workers and companies

Impacts on social cohesion

Future of the middle class

"MANIFATTURA MILANO", is the municipality of Milan's new urban policy program that aims to improve the city's economic attractiveness, growth of enterprises in digital manufacturing and growth of new crafts:

- Create new jobs
- Regenerate the suburbs
- Promote social cohesion



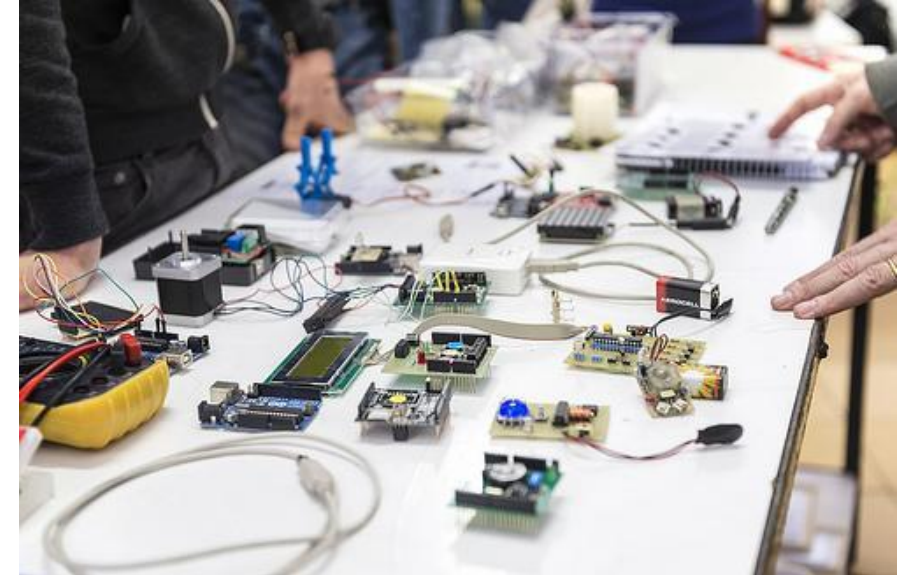
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CIRCULAR ECONOMY AND INDUSTRY 4.0

FABLAB MILANO – THE DIGITAL MANUFACTURING LABORATORY THAT'S TRANSFORMING MILAN'S SPACES, MANUFACTURING AND SKILLS

FabLab Milano is located in the heart of the industrial area of Milan Bovisa, and is part of the FabLab Network, a global network born 10 years ago from an idea by Neil Gershenfeld, director of the Center for Bits and Atoms (CBA) in Boston. FabLab is a fully equipped digital manufacturing laboratory. A place of sharing and coworking, designed to put students in communication with companies, artisans with businesses.



The location of FabLabs in previous industrial areas enables the transformation of abandoned areas into innovative spaces that encourage young entrepreneurs and startups. This regeneration of neighborhoods and areas that have either degraded or abandoned was a strategic decision to re-claim valuable land in Milan and utilize it in ways to advance social innovation and inclusion, increase new skills and training, transform the economy to be more circular and propel Milan to its future vision.



CIRCULAR ECONOMY AND URBAN METABOLISM

THE FLOW OF GOODS WITHIN THE CIRCLE OF MILAN

Increasing urban congestion and the sharp decrease in freight traffic has led shipping and logistics companies to disperse around the outskirts of the metropolitan area of Milan. This compromises the calculation of the flow of goods entering and exiting the city and makes it difficult to calculate the actual needs of the city

LABSUS

Collaborative agreement for shared management of common goods. This is a trial for social regeneration that will involve a vast array of stakeholders and include social enhancement of spaces

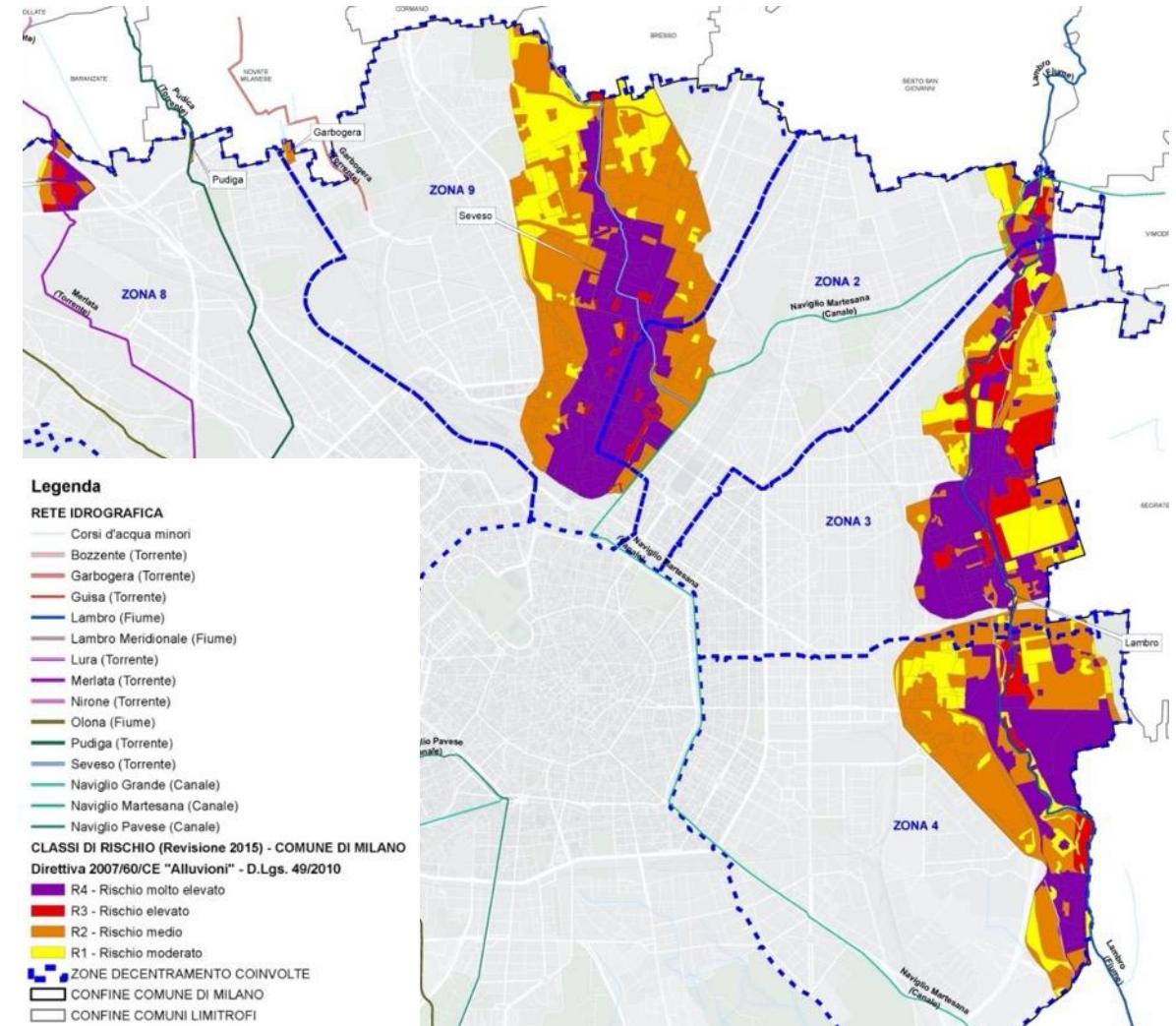
SOCIAL STREET TOOL

A tool that promotes circular economy through transforming economic activities that have by now become obsolete. Social street tool also looks to improve public transportation and logistics of transport of goods in the area



THE NEW PIANO DI GOVERNO DEL TERRITORIO AND THE HYDROLOGICAL RISK

The municipality of Milan is located in an area of clear hydraulic/hydrogeological risk. The hydrology of Milan, in fact, is particularly complex and is extricated between a tangle of canals, rivers, streams and irrigations. The municipality is located in a flat territory and is crossed by three rivers: Seveso, Lambro, Olona. There are, then, several artificial channels such as the Naviglio Grande, the Naviglio of Martesana, the Naviglio Pavese, the Vettabbia and the Redefossi.

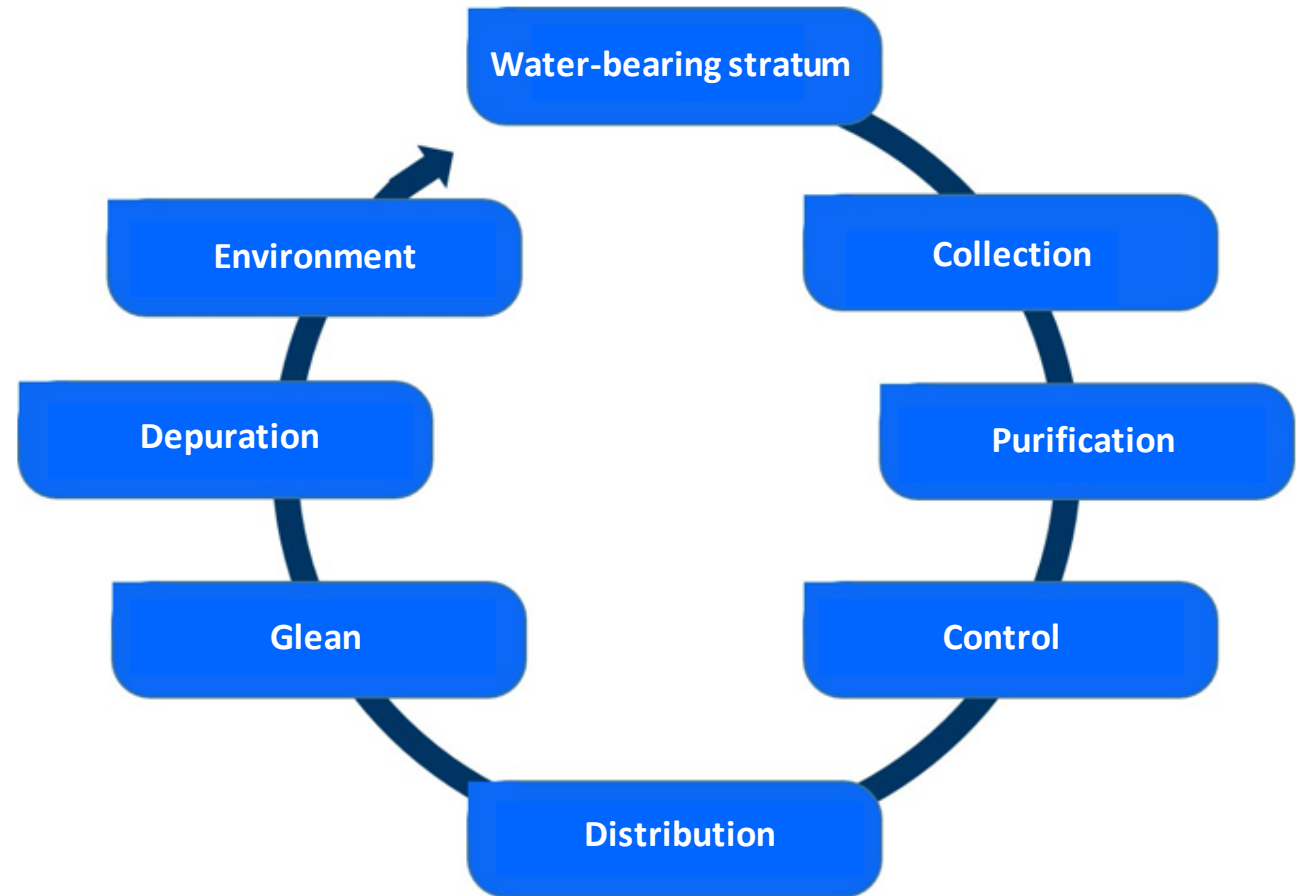


CIRCULAR ECONOMY AND WATER

WATER MANAGEMENT

Metropolitana Milanese – MM takes care of the collection, the water purification and distribution, collects the water from the sewage and coordinates the purification before release it to the environment.

MM has the purpose of managing the integrated water service in Milan to meet the water needs of citizens, in a quantitatively adequate and qualitatively optimal manner, operating responsibly respecting the environment and pursuing efficiency and economy.



CIRCULAR ECONOMY AND WATER

THE RE-OPENING OF THE NAVIGLI

Tourism enhancement, rooted in the creation of a continuous system of canals and cycle paths from Adda to Ticino, the possibility of navigating from Maggiore Lake to the Adriatic Sea, environmental recovery, landscape and historical identity are aspects characterizing the project, which mixes the past and future of the Milanese Navigli.

In the feasibility study for the re-opening of the Navigli, launched in April 2014 and concluded in June 2015, the interdisciplinary working group coordinated by the Politecnico of Milan, with the collaboration of Metropolitana Milanese and the support of the Territorial Environment Mobility Agency and some Central Directorates of the Municipality of Milan, **has analysed the proposed interventions for the reopening of the inner circle under the architectural, road and transport profiles as well as for the geological, hydrogeological and hydraulic aspects.**



Conchetta.



Il Naviglio Grande at the 'scodellino' bridge before the entrance in Darsena.



Gate of the Naviglio Pavese in Rozzano.
Photo by Giovanni Sabatini.



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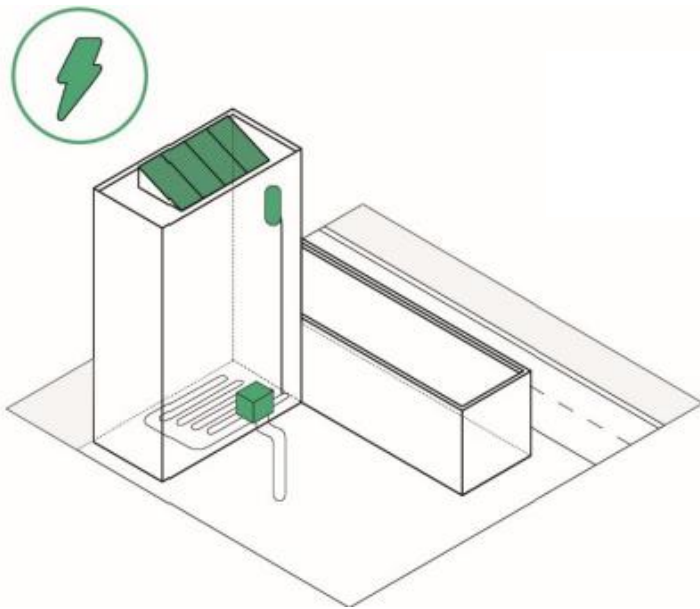
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CIRCULAR ECONOMY AND LAND USE PLAN

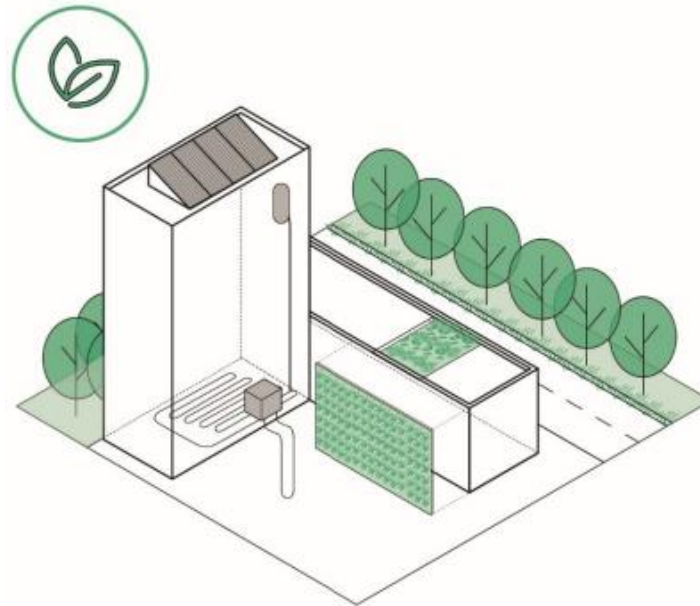
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THE ARTICLE 10 WITHIN THE NEW PIANO DI GOVERNO DEL TERRITORIO

New standards for new constructions and requalification of the existing stocks, in terms of reductions of emissions (in relation to recycled materials as well) and permeability of soils.



EFFICIENZA ENERGETICA |
ENERGIE RINNOVABILI



RINATURALIZZAZIONE



RIDUZIONE IMPRONTA DI
CARBONIO



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NEXT STEPS FOR A MORE RESILIENT AND CIRCULAR MILAN

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Together with the Municipality of Milan and the support of stakeholders



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Thank you for
your attention