

# Regenerative urban food planning for eco-social transitions

Intensive Summer Program Madrid 2022

## Title

Regenerative urban food planning for eco-social transitions

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## Summary

A 10-day course on sustainable food planning was attended by a heterogeneous group of students, interns, and academics in the summer of 2022. They had a mission: explore alternatives to reduce the vulnerability of the food system and guarantee that everyone, regardless of financial means, has access to wholesome, sustainable food. The workshop's focus on an underprivileged neighbourhood in Madrid.

Most participants were unaware of the context, the task was very difficult, and time was limited, so we decided to work with scenarios. An instrument utilized in to deal with deep uncertainty. Furthermore, we selected science fiction extreme scenarios. Although it would appear to be a performance exercise, its true purpose was to encourage critical reflection on the current system's -dangerous- trajectory and possible fixes. Indeed, since 2022, we have witnessed more extreme events than we could have ever dreamed of, like the conflict in Ukraine, the floods in central Europe, and, more recently, Valencia, where supplies, coordination, and preparation were disrupted.

Each team had a challenge: a) Mobilize a society blind to warning signs; b) shift from an energy-guzzling food -and economic- system to one self-sustaining and resilient; c) seize food as a catalyst to solve urban extreme inequality; and d) Imagine a future living in harmony with nature. They were invited to adopt both short-term and long-term perspectives.

Among the common elements that all teams brought to the discussion were the following: food cannot be considered in isolation, but within the whole socio-economic system, which has strong spatial implications. It is essential to set clear priorities and to strengthen cooperation and communities. The teams also worked on calculations relating to agricultural production capacity and the critical need for water and energy resources. The strategies proposed were aimed at reducing consumption, adopting and effectively managing available resources and using appropriate technologies adapted to local conditions and needs. They are also reviewing existing infrastructure and facilities, such as metro systems, to identify potential new functions.

Overall, the approach taken and the proposals outlined in this book provide valuable insights and inspirational elements that can be useful in learning processes and in exploring options for dealing with the pressing problems facing our society.

## Acknowledgements

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Urban food planning for ecosocial transitions

## AESOP4Food Intensive Programme in Madrid

### Challenge: Food system resilience in dystopic scenarios

The Intensive Program took place in Madrid, summer 2022. International and multidisciplinary teams had to explore options to reduce the vulnerability of the food system and to ensure accessibility to healthy and sustainable food for everyone, regardless of their purchasing power.

### THE PROJECT

The Erasmus+ AESOP4Food (2021-2024), aimed to develop future leadership in sustainable food planning, to contribute to food security, food justice, and healthier environments.

AESOP4Food developed a collaborative, cross-disciplinary European learning exercise on sustainable food planning for educators and students. By offering an inclusive, open-access course that utilizes digital environments and web-based collaboration, it fosters the conversation about the necessity of sustainable food systems in academia and the planning professions and gathers and disseminates evidence of effective practices in higher education. This course is also accessible to adult learners and learners with limited opportunities.

### STRATEGIC PARTNERSHIP

As articulated by the International Panel of Experts on Sustainable Food Systems in their "Common Food Policy for the European Union" and a "Long Food Movement," the partnership has expanded on the necessity for sustainable food planning. These include focussing all efforts on the shift to sustainability, bringing together the different sectoral policies that impact food production, processing, distribution, and consumption, and establishing a reform for the entire food system.

More than ever, planning for sustainable food production and provision is pushing us to find more efficient, fair, and just methods that fundamentally alter not just how we grow food but also the very fabric of our living environment.



## PARTICIPATORY ACTION LEARNING AND RESEARCH

Local Living Labs, which are designed as dynamic environments for co-creation of knowledge on sustainable food planning, complement the online Seminar. They are part of a community learning model that brings together a wide range of stakeholders engaged in a process to transform some aspects of the foodscape.

The group of students and the local community are better able to investigate and test the techniques and resources they learnt in the online seminar through the Living Labs. Every partner university designed its own itinerary and Living Lab. The Participatory Action Learning And Research (PALAR) approach supports the collaboration between academic insti-

tutions and civil society (through various NGOs and associations). In this approach, knowledge is co-created rather than merely transferred top-down to communities, and it is directly linked to local circumstances and needs (Triboi et al., 2023). The lines between students and professors are blurred, fostering an environment of innovative cooperation.

Here we present the results of the Summer Workshop that took place in Madrid in July 2022. Due to the intensive nature of the 10-day summer programme, it was not feasible to design it as a living lab, but rather as a workshop with spaces for interaction and connection with the local reality. In these workshops, the hierarchy between students and professors is blurred, creating an atmosphere of creative collaboration.



*Figure 1. Collective design thinking. Photo: Isabel Alonso Matías*



## REGENERATIVE URBAN FOOD PLANNING FOR ECOSOCIAL TRANSITIONS

The workshop focused on the potential for improving the sustainability of the local food system: addressing the governance and spatial implications of sustainable production and the cross-relations to nature protection and environmental/landscape quality in urban fringe areas.

We worked in international teams composed of students from various countries and staff of Universities and NGO of various countries. Each team had a combination of different disciplines. The IP worked within the framework of participatory action learning and research approach as defined during the first session of the seminar.

That means that students and tutors alike took part in the activities and worked together in the teams. Teams ensure that every voice is heard and that they engage together to address the challenges and aim for achieving a transformative action.

### Context: The city of Madrid

Madrid, Spain, a city of 3.1 million inhabitants provides an interesting case study. Emblematic authors like Saskia Sassen position Madrid in the top ranks of global cities (Sassen, [2002](#)), and the region of Madrid aspires to consolidate as a large service hub, while farming has become irrelevant in terms of its contribution to the GDP and to the workforce. Besides its ambitions, Madrid is primarily, a dual city with increasing inequalities. Fig 1 depicts the uneven distribution of food insecurity and children obesity throughout the

neighbourhoods.

In 2015, food sovereignty activists, environmentalists and other groups engaged in community gardens and social economy launched Madrid Agroecológico (MAE), an umbrella platform seeking an agroecological transition in the region.

Madrid is member of the Spanish Network 'Red de Ciudades por la Agroecología'. It is also signatory of the Milano Urban Food Policy Pact, and implementor of a sustainable and healthy food strategy. Different municipal departments dealing with food issues, together with some relevant social and economic stakeholders, formed a Monitoring Board of the MUFPP in 2016, and the city adopted a Sustainable and Healthy Food Strategy on 1st March 2018 and a second one in 2022.

There are several enterprises and social actors related to the local food sector. These vary from community gardens, CSA, to social and economic enterprises for local food production in the urban fringe and region. These form new chains of food production and consumption, innovative in terms of social entrepreneurship, as well as in social relationships.

Currently, the city is developing two programs: Barrios Productores (Productive Neighbourhoods), which introduces agro-ecological entrepreneurship nurseries in plots of public land owned by the City Council, and Bosque Metropolitano (Metropolitan Forest), in which urban agriculture plays a key role.

## RESEARCH QUESTIONS

Important questions for the Intensive Programme are:

- Given that over 90% of food consumed in Madrid comes from outside the region, what are the main challenges of the metropolitan food sys-

tem?

- How to intertwine scales, with ongoing strategies promoting agroecology and sustainable food system, from the neighbourhood to the regional one?
- How can agroecology and urban agriculture contribute to sustainable economic development?
- Which (spatial) strategies can be developed (for governance, local entrepreneurs, and agroecological and food movements) in order to achieve social and economic goals?
- Which business models are suitable to serve the needs of the local communities?
- How can agroecological programs be connected to public procurement and food aid programs?
- How can sustainable agriculture and processing be combined with the needs of the inhabitants and the local potential for food production?

## LEARNING GOALS

After the workshop each participant:

- Is aware of the vulnerability of the urban food system.
- Can anticipate future problems and address them by leveraging local resources.
- Can identify stakeholders and power structures in a new and unknown context.
- Can use collaborative mapping tools to prefigure alternatives.
- Can apply strategic thinking to a weak defined problem and develop action-oriented proposals.
- Can communicate findings and proposals.
- Transversal: Collaborative working.

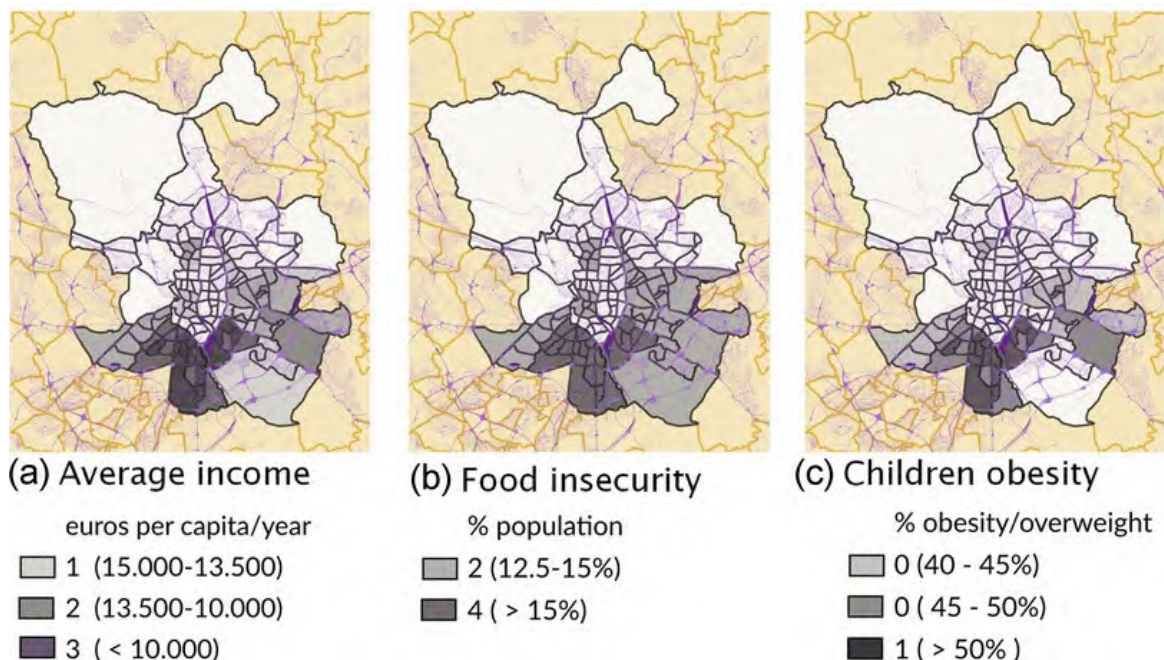


Figure 2. Income, food insecurity, and children's obesity across Madrid's neighborhoods. Source: Simón-Rojo, 2021

## WORKING WITH SCENARIOS

Scenario design has been used since the 1950s to support decision-making in both public policy and business settings. By generating and identifying potential alternative routes for future urban growth, it has the advantage of lowering uncertainty (Stojanovic et al., 2014). During the IP, each team was challenged by a single "extreme scenario" that was based on a movie or series. The task of each group was to better define the scenario and establish the sustainable food planning measures to make it the best possible future, given the initial restrictions. The scenarios were inspired by:

### **The Collapse (L'Effondrement) by Les Parasites**

What to do if our system collapses tomorrow? Long process of environmental and energy crisis culminating in collapse: power outages, supply shortages, adverse weather events. 100% population affected and the whole system must be reorganized from scratch

At short term: ensuring distribution of what is available, at medium/long term: a new model of food production and distribution is needed.

### **Don't look up by Adam McKay**

What to do if society refuses to accept the situation?

Time is running out to save the planet, neither governments nor the public seem to realise the urgency. No action is being taken because the seriousness of the situation is not being taken seriously.

Short term: Take charge of the situation and take urgent action. at Medium/long term a new model that avoids collapse is needed.

### **3% by Pedro Aguilera**

The system has collapsed, there is an extremely unequal distribution of left resources, which can lead to struggles for access to them. There is a dangerous drift towards totalitarian systems of government

Short term: How to feed the remaining 97%. Medium/long term: how to build a new model that avoids inequality and promotes a sustainable distribution of resources.

### **Station Eleven by Patrick Somerville**

Civilisation has already collapsed. The surviving population has had to reorganise itself into smaller groups. A different future seems possible, with consumption adapted to resources available.

In the short term: How to reorganise food production and distribution?

At medium/long term: A new model that avoids inequality and promotes a fair distribution of resources is needed.



Figure 3. Dialogues in the aula. Foto: Isabel Alonso Matías





The case study: Ventilla-Almenara



## The case study: Ventilla-Almenara

### A COMPLEX NEIGHBOURHOOD

Located north of Madrid's downtown, the Ventilla-Almenara neighborhood is a part of the Tetuán District, in Madrid. La Ventilla has a distinctive personality. It originated as a neighborhood of poor quality homes that, ironically, gradually gave way to Madrid's most impressive urban development. From La Ventilla, you can see the modern and iconic skyline of the new business center (Cuatro Torres, on the site of the Real Madrid's former football training grounds).

From the beginning of the 20th century onwards, the neighbourhood was shaped by a spontaneous growth of very modest low houses, alternating with small workshops and industries. A profound urban planning intervention, first by the Ministry of Public Works at the end of the 1970s and later, in the 1980s, by the Instituto de la Vivienda de Madrid (Public house agency), changed the urban fabric, although not the social reality.

The main transformation took place between 1989 and 2001 with the opening of the Avenida de Asturias, which involved the construction of a high-capacity road and the removal of sub-

standard housing. The resident population was rehoused in new 5 or 6 storey buildings along the Avenida de Asturias.

On 2022, 23,000 people lived in the area. It has a higher unemployment rate and lower income than the city average. A series of comprehensive neighbourhood plans have been in place since 2017. They aim to improve public spaces and promote cultural activities.

### KNOWING THE FIELD OF PLAY

In order to facilitate a better understanding of the context, the program included several visits and presentations related to Madrid food system. They covered both conventional and alternative key players.

#### **Agroecological production:**

- **CSA Zarzalejo**, a Community Supported Agriculture initiative to promote food security in a mountainous region of Madrid, reduce the environmental and social footprint of food, improve health and strengthen community ties. Zarzalejo has almost 1.800 inhabitants and is located 58 km away from Madrid.

## Food distribution:

- **Mercamadrid**, is a public company, the largest platform for the distribution, marketing, processing and logistics of fresh food in Spain. It covers an area of 222 hectares, More than 800 companies are located within its boundaries. With over 12 million customers within a 500 kilometres radius, it works around the clock to satisfy demand that extends beyond the local level. The fish warehouse, which features evaporation equipment that capitalizes on Madrid's dry climate and a waterproof and reflective roof that keeps the surface from heating up and lowers the temperature by up to 50%, was one of the creative and effective refrigeration systems we learned about during the visit.

- **Madrid Km0**. A local food hub as a logistic center for agroecological projects in the region of Madrid.

## Food Retail:

- **Municipal Markets**. Lecture from Concha Díaz-Villegas Director of Trade and Catering (DG Comercio y Hostelería) Madrid City Council.
- **LA OSA**, the main cooperative supermarket in Madrid, with almost 1.500 members. It is located in the IP's target neighbourhood. It is based on the principles of self-management and the social and solidarity economy. This approach empowers individuals to take control of their own lives and resources, while also promoting cooper-



Figure 4. Visit to Mercamadrid. Photo: Sarah Vaneenooghe

ation and mutual support.

## MAIN STAKEHOLDERS

The Summer Intensive Program was defined by the GIAU+S from the Universidad Politécnica de Madrid in collaboration with the Red de Ciudades por la Agroecología. Other NGOs and social cooperatives participated in the workshop, including Surcos Urbanos and Germinando, which had provided technical support for Madrid's Food Strategy's design and implementation and the MFPP monitoring table. The regional movement Madrid Agroecológico, which brings together a wide range of actors from both the rural and the urban realms is dedicated to the agroecological transition in the Madrid region. The viewpoints of those at risk of food insecurity were integrated with the assistance of Carta contra el Hambre and the Observatory for the Guarantee of the Right to Food in Madrid.

## Alternative Food Networks

### Madrid Agroecológico

This platform was established in January 2015 by activists from a variety of agroecological and food sovereignty background in the central peninsular bioregion. It is a social movement composed of both urban and rural collectives that aims to restore sustainable production grounded in social justice and an awareness of the biophysical boundaries of ecosystems. In order to facilitate a transition and increase the potential for social change, this social movement aims to coordinate and articulate initiatives in the alternative food realm.

It also aims to be a reference in the co-production of agroecological policies at municipal and regional level, influencing institutions to change the models of agro-food systems.

### Network of Community Gardens

The Red de Huertos Urbanos de Madrid<sup>1</sup> is an initiative promoted by citizens engaged in community agriculture in the city of Madrid. It unites around seventy initiatives. The Network was established in order to raise awareness of urban agriculture in Madrid, address the requirements of urban gardens for mutual support, and exchange information, insights, inputs, and other resources.

### Madrid Km0

Madrid Km0 is a service cooperative for small-scale agro-ecological food production and transformation projects. It is a logistics hub located in Villaverde's Marconi industrial complex. It provides services for storage, order preparation, flexible temporary space use, control over the receipt and departure of goods, and product transportation within the Community of Madrid, it seeks to be more than just a storage facility. Additionally, it provides a location for third parties to pick up orders.

### Carta contra el Hambre (CcH) / OGDAMadrid

CcH (Charter against Hunger) is a platform contesting conventional public policies addressing food poverty. They assume that the right to food must be intertwined with the concurrent achievement of other rights such as decent employment and social benefits (including basic income) to live in dignity. Then, they demand an audit on food poverty and its root causes, changes in legislation, and alternatives to "giving handouts" and charity, CcH called for a municipal legislative initiative about the Right to Food (Simón-Rojo, 2021).

### Solidarity pantries

Based on reciprocity and collective

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<sup>1</sup> <https://redhuertosurbanosmadrid.wordpress.com>



action, solidarity pantries are groups or individuals who come together to meet basic food needs. They can be empowerment tools for those at risk of exclusion. Madrid Agroecológico calls for the use of municipal kitchens to reach this potential. For example, in their plan, cultural centres with kitchens could be set up for various nutrition education programmes for senior citizens and their families. They could also house self-help organisations linked to solidarity pantries and intergenerational cooperation spaces, which could act as incubators for "start-up" projects before the City Council. The plots of land targeted for urban agriculture in the program Barrios Productores could also be used for a joint project with food pantries.

## Main public municipal bodies

### Delegated Area for Cooperation and Internationalisation

This unit is responsible for the Healthy and Sustainable Food Strategy (2022-2025). It has developed this strategy in coordination with all the areas involved, in line with the recommendations of the

Milan Pact. The new strategy proposes actions to promote sustainable food systems that ensure healthy and accessible food for the entire population, while supporting local economies and products, protecting biodiversity and reducing food waste, all of which are key elements of quality of life and urban sustainability.

### General Directorate of Trade, Hospitality and Consumption

This Unit oversees, plans, and advances Madrid's commercial promotion, municipal markets, and commerce policies. Madrid has a large network of municipal markets, comprising 45 facilities spread across 17 districts. In addition, there are different Farmers Market held every month.

### Environment and Mobility Area

This Unit oversees different initiatives to support urban gardening that adheres to agroecological standards, taking into account the activity's positive effects on the environment, society, and education. The Municipal program of community urban gardens operates since 2010.



Figure 5. Visit to a community garden



DON'T LOOK UP. Extreme weather





# DON'T LOOK UP

## Extreme weather

### TEAM 1

Sarah Vaneenooghe

Katarzyna Sęk

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### Challenge: Mobilize a society blind to warning signs

The survival of our society is in danger as we approach a point of no return, according to science. However, the model's inertia is too great, and businesses and governments are failing to make the required adjustments. Could the process of designing sustainable food systems help combat this careless inaction and set the stage for the necessary changes?

## Scenario description

### SHORT TERM DISASTER

Governments and citizens don't seem to realize how urgent it is to save the planet since time is running out. Nothing was being done because people did not take the seriousness of the issue seriously.

Madrid suffers iterative extreme hot weather events: for at least two weeks in a row, the city experiences severe drought and extremely hot weather occurrences, which entail temperatures above 40 °C. People are shocked by the extraordinary event, it is a turning point in their urban lives.

#### Action needed:

Take command of the circumstance and act immediately.

### LONG TERM DISASTER

By 2025, a series of extremely extended heat episodes are rapidly turning Madrid into a desert. Extremely high temperatures are the cause of the drought.

By 2035, the air and water will be contaminated. By 2040, UV radiation will pose a threat to human health.

Madrid will have severe drought and difficult living circumstances due to desertification by 2050.

#### Action needed:

A novel model that prevents collapse

### Goal & Vision

When the climate deteriorates, the goal is to provide a liveable environ-

ment and equitable access to resources for the residents of Ventilla Almenara (Tetuán, Madrid). **Circular resource** organization, more **efficient use** of energy and transportation, and **less unequal** use of resources like food and water are some of the principles applied in the scenarios.

The necessity of a major shock (cf. event) to convince the public and the government that the situation is serious is one strategy to achieve this shift.

Climate shelters, which have the potential to develop into "**survival zones**," are an example of a bottom-up adjustment that can be implemented in the interim.

### Vision:

The implementation of **shock therapy** involves rapid and drastic measures to overhaul the existing governmental structure.

Adoption of **agroecology**, which offers a sustainable solution by promoting local food production and community involvement to address food poverty in Madrid's deprived neighbourhoods (Simón-Rojo, 2019).

## General strategies

### THE FOOD SYSTEM

Our focus lies on decentralisation: by collaborating with smaller actors, we can empower local communities and promote sustainable practices. Why? Because now the government has the power to shape the direction and development of the country, and it is incredibly challenging to implement change in such a rigid structure. By decentralizing power and resources, we can create a more resilient and equitable food system that prioritizes ecological health over profit. When focus-

ing on agroecology, this can possibly change.

### PRODUCTION & TRANSFORMATION

The primary strategy revolves around increasing local food production capacity, which takes place on two levels:

**Outside the city:** with agro-ecological farms (cropland & cattle), CSA, shepherds

**Inside the city:** growing fruit trees and bushes in the city streets, green roofs...

### FOOD DISTRIBUTION

The strategy is to optimise the means of transport and **streamline the supply chain with the metro system**: People's transportation via metro, during the day: from 6am to 1am whereas food is distributed using metro at night, from 1am to 5am.

The second strategy deals with the principles of **reverse logistics**: Food is transported from the countryside to the city's interior, and food waste is dispersed throughout the city from within (houses, etc.). For each survival zone, metro stations have a Km0+ distribution point.

### CONSUMPTION & CULTURE

Food can be found in the cooperative supermarkets, community gardens, CSA-farms...

Food is prepared in community kitchens where everyone has the right to eat healthy food, take part in social events like cooking/chatting/eating/... (possibly cohousing principle).

Organic waste is composted on the countryside, in the social gardens (CSA-farms).

## TRAINING & EDUCATION

The strategy is based on creating a system that promotes a more interactive method of learning, focusing on aspects such as:

- Edible wild plants
- How to create tools (like filters) from old, reusable materials
- How to cool down the living environment in cities
- Teach and train people on the different types of trees and how to plant them.

## Interventions

### IN THE SHORT TERM: ONE PIONEER CLIMATE SHELTER ZONE

To bring about rapid change in a society that has become entrenched, we find that the development of a pioneer zone will be crucial. After all, the community and the government do not believe in the coming danger proclaimed by a few. In

our proposal, **the few who do believe in the need for change, come together in a district.** There they set up a community that is able to withstand the coming danger. It thus serves as an example. An example for the non-believing population to show that life in the city can be different and that the approach chosen is also robust enough to survive the coming danger. When the heat hits the city, the government will see the well-functioning of the adapted community so the heat-event itself will serve as a shock therapy towards profound changes at governmental level.

### Needs and places in a pioneer climate shelter

Water storage >> scaled up water tanks

Food distribution centre >> near metro stations, places like 'km0'

Food storage >> local supermarkets

Health centre >> health centre, churches, libraries

Education centre & Fab lab >> schools, corporations/cooperatives, NGO's

Discussion & social centre >> community centre



Figure 6. Aridity. Photo: Sarah Vaneenooghe

The area shown in the figure was chosen for the setup of the short term "climate shelter zone or district" because the necessary elements for a climate shelter are completely present. There are already many initiatives located in this area related to social, ecological and economic sustainability goals such as NGOs and co-operatives.

For example, a socio-ecological centre/NGO, community gardens and various educational centres are present in this zone. In addition, the zone is also home to numerous large public buildings, supermarkets, restaurants, a community centre and a metro station.

### Structure of the climate shelter zone

The "climate shelter zone" or "neighbourhood" is configured in such a way that an influential core is situated centrally in the zone itself, containing at least one NGO (Refood España), several shops and restaurants for food, and a public space for health care and provisioning a cool space.

The NGO is home to the "change agents" or "revolutionaries" who adequately address the impending threat, so they occupies a vital place in the concept.

The district is also easily accessible due to its location near the metro station and the central major road through the study area (the Av. de Asturias, a Haussmannian-like street).

From the central zone in the district, everything is easily accessible, but also transport in and out the climate shelter zone is possible through the nearby metro station.

### Fight urban heat island effect

Research on the urban heat island effect is also underway in the climatic shelter zone.

**Greening public areas** like streets, squares, and courtyards is a first step. By painting the building's walls and roofs white, advancements are also being made on private property.

There will be health centre & shelters, places where people can sleep and rest there, if their houses are unlivable. I.e Pharmacies (Perez Alvarez, Alicia de Gracia Sanchez...) Religious centres or Libraries.

### The role of protocols and community-based responses

The **protocol for residents**. Disseminated through alert messages and leaving flyers in the area. Main messages:

- Daytime: Close all the windows and rest. Stay at home or in the shelter
- Nighttime: If you need, move to the shelter. Go to the Discussion centre for further info.
- General: Don't use the car as it generates heat. Remember to take care of your older neighbours and children. Wear white and linen clothes. Create green roofs and white paint.

The **protocol for stakeholders**. Disseminated through a paper version personally and virtually to the organisations and companies. Main messages:

- For the daily essentials, tasks be outsourced to the residents of the climate shelter and the district.
- Coordinators are responsible for giving the tasks for each subject (planting trees, distributing food, education... )
- Confirmation of executed task is made online.

### Education center & Fab Lab

Here, people will receive training on subjects like edible wild plants, making tools (like filters) out of recycled materials, cool down the living environment in cities while



also assisting with tree planting.

Stakeholders/Leaders: Proceso de Desarrollo Comunitario de Tetuan, Padre Piquer Training Center, Fundaci3n (Proclade, Aquae...).

## Discussion & social centre (DC)

This is the primary location for raising awareness among participants, with the help of mediators they generate ideas and solutions based on collective expertise.

People might provide their skills or knowledge to be used at the shelter. Tasks are sent here from other locations, and DC distributes the work.

Stakeholders: Nursery La Plazuela, Proceso de Desarrollo Comunitario de Tetuan.

## Food

**Food distribution center.** Residents are helping to transport food from agricultural areas to distribution centres. The latter are

located close to the metro stations.

**Food consumption.** The portions are given in assembled food-packages, through cooperative markets, community gardens and conventional markets.

## IN THE LONG TERM: MULTIPLE CLIMATE SHELTER ZONES

One of the best ways of securing the resources is to live in communities. This allows people to reduce their consumption of water and electricity and to become more social as everyone can work together for a common goal.

The primary goal was to establish common areas in each community, such as a kitchen, playground, meeting room, and workspace, in addition to solar panels and green gardens.

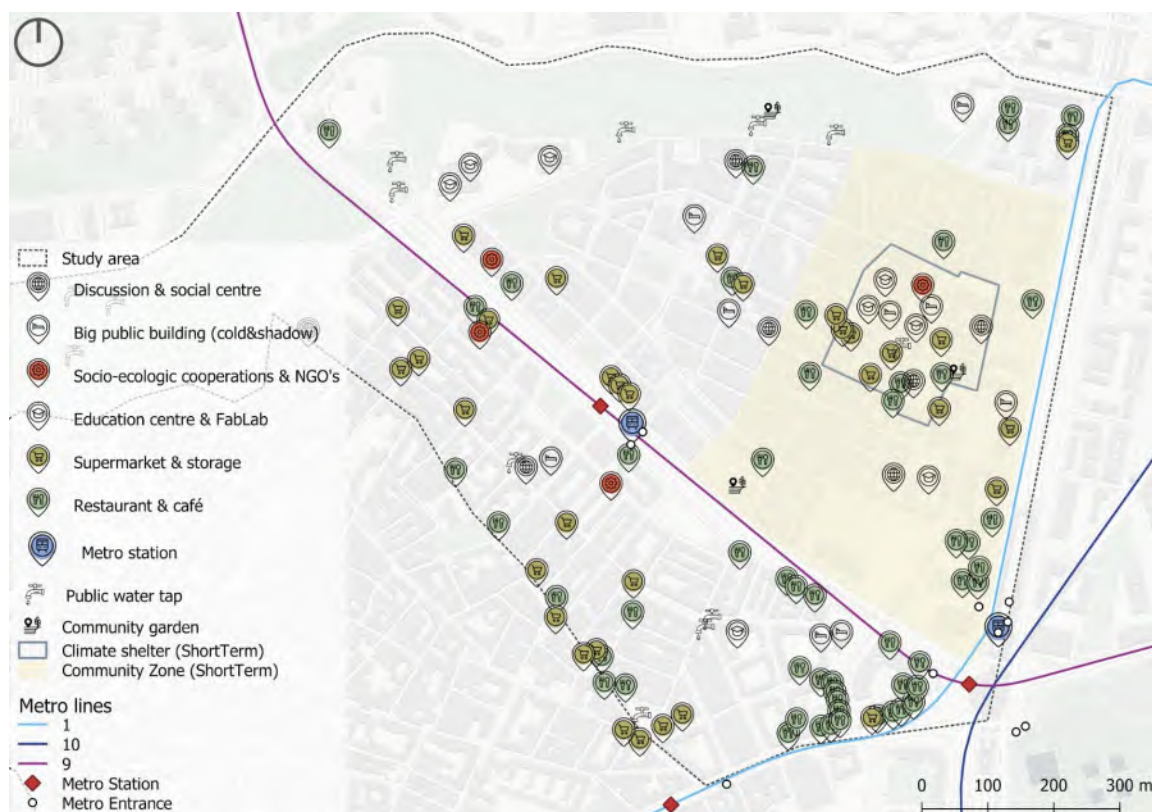


Figure 7. Pioneer climate shelter zone. Author: Team 1



In the longer term, four separate units will be chosen, each with a central core to be developed. As can be seen from the map below, the indicated cores for the long term do not yet contain many functions.

In the long term, the aim is to create equivalent places with comparable functions as in the pioneering example of the short term.

As in the case of the short-term example, it is appropriate to establish at least one NGO or cooperative in the main centre area every time because the revolutionaries operate from there.

Think for example of a cooperative supermarket, a training centre, or more specific examples from the area: La Osa, Ecosol, Soup kitchens, Refugees centre, Refood, Econosolidario, Alzheimer association or Pueblos Unidos.

## Transport

Transport to and from the demarcated areas takes place underground via the existing metro lines.

The large street in the middle between the neighbourhoods (the Av.de Asturias) serves on the one hand as a central cooling ribbon (through extensive greening) for the neighbourhood and on the other hand as a central connecting road if movements have to be made above ground (for example during the night when it is cooler).

## Fight urban heat island effect

One of the changes that we really wanted to make was to create more spaces in which there would be more trees and plants, and the playground would become greener.

This could help a lot with the temperatures in town and would bring more

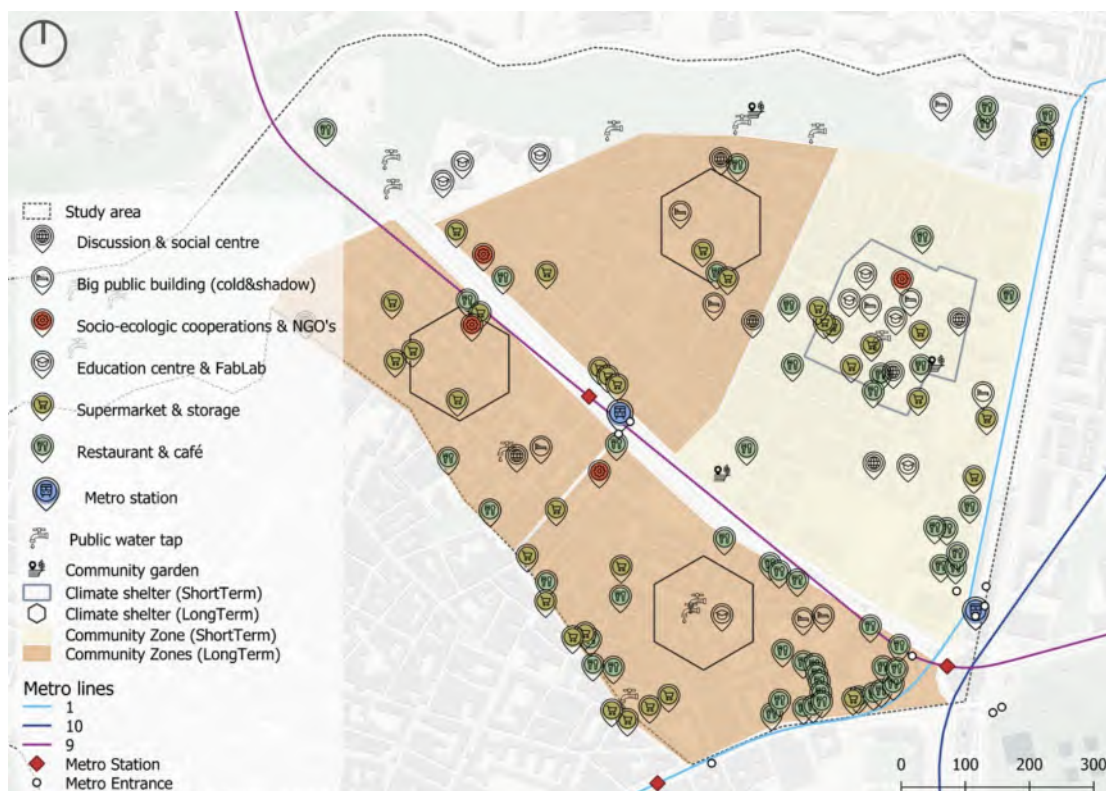


Figure 8. Division in climate shelter zones. Author: Team 1

shadow which is much needed there.

## Green roofs<sup>2</sup>

Since there are two types of green roofs we wanted to see how much the construction of the building can take and see where we can plant vegetables and fruits and where we can only have some grasses or lighter plants.

## The food question

**Insect Farm.** Since insects are rich in protein it could become a great substitute for meat which would lead in lessening the usage of water. The carbon footprint wouldn't be some huge as the one which is caused in the production of meat.

**Farms.** They would be in the countryside, connected to metro stations as we want to distribute the compost and food by the metro.

**Distribution,** The food would be distributed to the local markets and our main goal was to create food justice as in the protocol. Only the people who do the mandatory work can have their share of food.

**In the city** - there would not be a big production of fruits and vegetables, but we want to have some on the green roofs and in community gardens.

## The waste question

Our main goal is to use worms and microorganisms to reduce waste and also to make compost, using everything we can to have better farming condition. Compost can be produced on the farms, in the social gardens, and in the courtyard gardens.

A micro-organism (*deonella sakaiensis*) is able to extract material from

---

<sup>2</sup> [Zielone dachy sposobem na zielen w miescie](#)

plastic to make new one. It also preserves its quality. This process must be made in temperature of 72°C. It takes to 10 hours with 90% of efficiency.

## The water question

Different solutions are used to achieve sustainable water management:

- Regeneration of wastewater (water treatment plants).
- Use of groundwater (wells).
- Water tanks and implementation of "botijo" principle.
- Recycle urine, filtering it with algae turning urine into drinkable water and edible algae.
- Use conditioning filters, carbon filters, mechanical filters and DIY filters to recycle grey water.

## The energy question

Developing a **wayside energy recover system**: flywheel technology for public transport capturing and repurposing the kinetic energy of its own trains, storing the energy generated by braking trains, and using it to power their acceleration as they move away.

The LA Metro already generates two megawatts using solar power according to project manager Frank Castro, but this new Wayside Energy Storage Substation (WESS) will add another two megawatts to the system.

Water and energy: during the day solar panels pump water up, to accumulate high potential energy. During the night water is dropped down, high kinetic energy.

## Northern belt of green space

There is this huge area of green space and we think that it can be used as an insect farm, composting place, water treatment and lastly we would build some of the solar panels there.



# UTOPIAN. Post collapse society

JCDecaux

Me enamora Madrid

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MADRID

# UTOPIAN

## Post-Collapse Society

### TEAM 2

|                       |                      |
|-----------------------|----------------------|
| Karol Langie          | Ranka Terpstra       |
| Gonzalo Diaz Correias | Oluwadamilola Gbenjo |
| Witold Dabrowsk       | Roxana Triboi        |

### Challenge: Imagine a future living in harmony with nature

Finding alternatives to the current failing system requires visualizing life beyond the collapse, reconsidering communities, relationships, talents and the “social contract. Food is not merely a sustenance source; it sustains social interactions and cultural practices, and it may play a central role in the new social and spatial configuration

## Scenario description

### GLOBAL CONTEXT

We are now far from the collapse. The team of specialists before tried to manage the disaster as well as possible with complex calculations and rigorous organization of human survival based on the best technological innovations, limited resources, and specialized competencies.

The signs before, during and shortly after the collapse were useful to prepare our current communities for a more balanced, sober, and less accelerated life.

This tribulation together with enormous expenditure of human and artificial intelligence, allows us a certain equilibrium that supports a quality of lifelong search in which superficial and artificial interests disappear, and give way to a

more pleasant use of time and energy.

The trauma of changing the mindset of a consumerist, overwhelmed and panicked society remind us that we cannot go back, that there is no hurry to produce and consume more. Specialization and competition in a globalized world are a dark memory.

The collapse of the global and national governance system transformed Madrid into a reserve of recycled resources destined to rebuild a more sustainable and pleasant living environment. Biodiversity, green and blue infrastructure, partial autonomy in food, water and energy are the defining characteristics.

The city has been rewilded in an intelligent and structured way, mainly through multifunctional continuous productive urban landscapes.



Due to the abundance of resources remaining after the collapse, the dispersal of the dense urban society into small self-sufficient communities in the rural and natural environment that support the urban ones, the Tetuan neighborhood became the new center of the North of Madrid, the local pole of knowledge and services concentration, a pillar of the central management of the bioregion.

Nowadays, all fundamental systems are essentially territorialized, the dependence of supra scale exchange, trade and transport is minimal and concentrated on basic products like coffee and exotic foods.

Drinking a Coca-Cola it is now a strange reminder of the glamour of the Old World, without any connection with

pleasure in our perception... more like a trigger that tastes are a matter of education (positive or negative) and that our minds were so excited by superficial information that “attacked” our senses and turned us into blind consumers without any understanding or awareness, completely detached of reality and addicted to idyllic unrealistic images of everything while our planet and ecosystem are being crushed under the cruel and accelerated exploitation of resources.

## LOCAL CONTEXT

Our small communities of Tetuan represent an example and a model for all Madrid. A Hub where knowledge, services and upgraded skills are concentrated and exchanged.

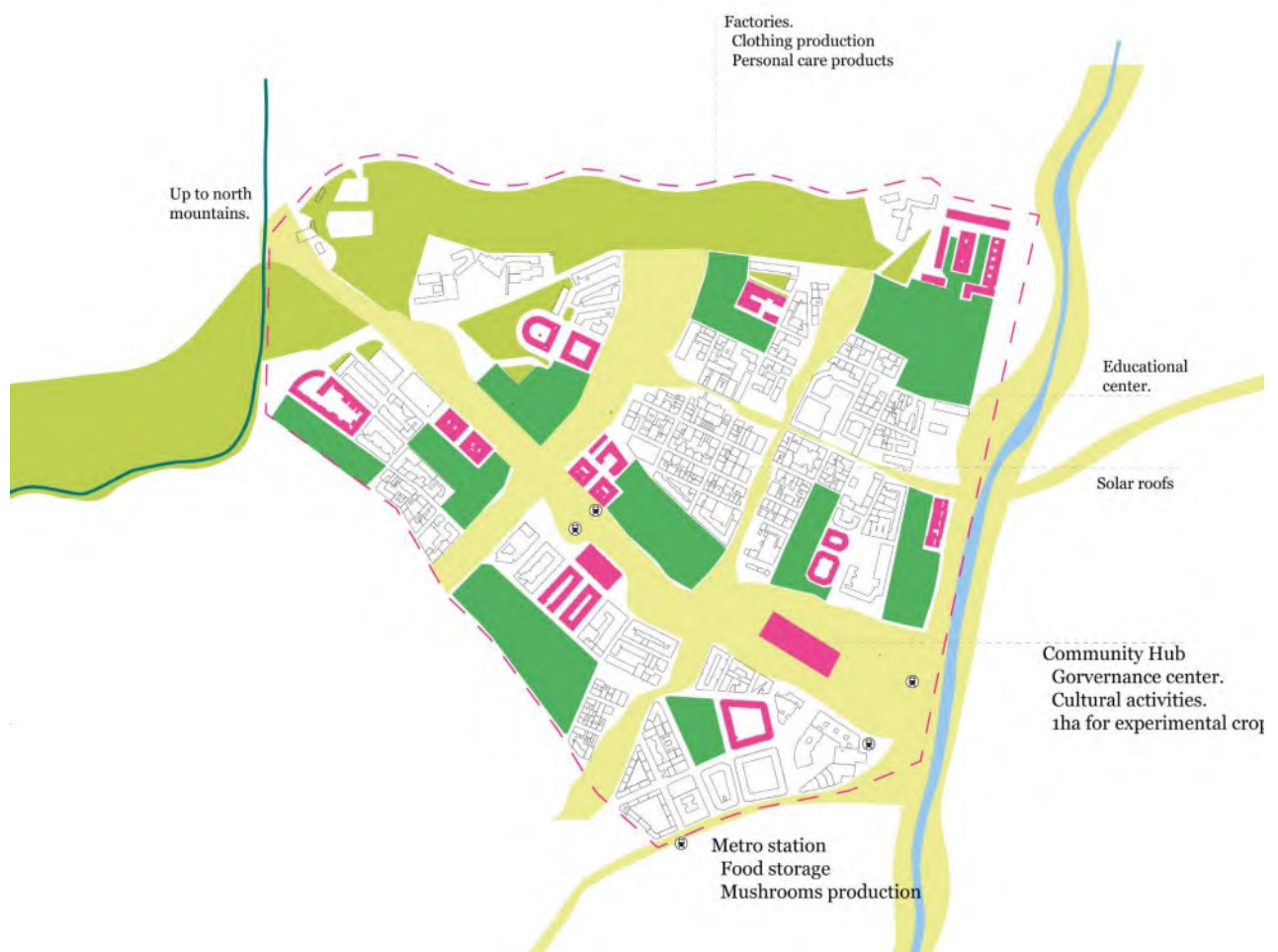


Figure 9. Key elements for the community. Author: Team 1

We, the neo-urbans, the uprooted that came from 'undeveloped' contexts like the countryside in the 50s, other countries and continents, looking for a 'better' life we are no longer the excluded.

The bars of our windows, the food banks and populist festivities are no longer useful.

We are in harmony, keepers of knowledge and resources useful to all our sister-communities for development.

## COMMUNITY CONTEXT

We are proud members of the Tetuan communities, and we now have access to all local resources without any discrimination! We are equals. We consummated our break up from the consumerist globalised society pre-collapse. We now have a lot of time and energy to invest into the functioning of our society: gardening, cooking, maintaining ecological corridors, socialising, raising and educating children, caring for others, celebrating life.

Our communities of a few hundred to one thousand members are functioning in a semi-subsistence mode, while supporting cooperation, solidarity, and exchange between communities at a larger scale until the bioregion level.

Independence and interdependence at different levels are possible and necessary.

Food bank is now transformed into dry food products storage. The urban garden became the center of our community.

The place of meeting and exchange. We all contribute to produce our fresh food. Poultry and pork production complements our kitchen and community garden activity.

This organization supports our

partial alimentary autonomy in case of disruption. The same logic is applied to water and energy access. Storage of all primary resources is capital for our resilience. A system that reminds us of Solidary supermarkets helps us to distribute food, especially one who comes from other places in an ethical and equal way. Our community garden is built on the pattern of the CSA (Zarzalejo) but in which all members equally participate since the time is now a largely available resource, and we are all enthusiastic of participating in our community's durability at a material, cultural and social level. Periodic festivities related to seasons and harvesting help us celebrate the moment, our life!

Abandoned urban infrastructure and constructions serves us as complementary spaces for storage, production, and material recycling. The aqueduct is now functional, providing an important quantity of water for the neighbourhood. The metro line is serving fresh storage and mushrooms and endives production. A basic system of communication such as radio and local internet and computer and printer support access to information between our members, local communities, and state management.

We live now in a more concentrated manner in the small houses of Tetuan for a more economic and sustainable way of living. The roofs are planted for a more natural heat reduction. Our organic structure and functioning from the days when our neighbourhood were just a slump support us to rebuild human scaled communities and vernacular and organic spaces. The abandoned high, big buildings serve us as a platform a energy production (through solar panels installation on the roofs) and as reserves of construction materials (after a process of recycling that we master internally).

The 'commons' became an essential part of our larger group's wellbeing.

The ecological corridors along the main axes of circulation, restored river ecosystems and other axes created a dense urban context after demolition. participate to build an agreeable and healthy living environment.

The ecosystem benefits are numerous and diverse: ventilation of urban mineral area/heat islands, shadow, oxygen production, biodiversity, density of wild and domesticated flora and fauna, water recycling, production of food, wood, compost, energy, biogas, wool...are complemented by the alternative mobility, leisure, cultural and pedagogical activities.

Now the city and the natural/ecosystem coexist in symbiose...an oxymoron in yesterday's world vision!

For managing the commons and central state support we offer voluntary use of our resources in time, energy, and products as we understand the benefits of a more large-scale regulation especially in terms of exchange of products and services between communities and territories.

## Cornerstone concepts to react

### SPECIALIZATION

The advantage of population concentration in urban environments is related to development of competencies and skills, that support the reputation of Tetuan neighborhood as a highly developed urban center at Madrid and bioregion level.

Specialization in health care, education, material (all types existing in the city) recycling, clothes fabrication, carpenters, personal care items are available at a large-scale level and complement basic skills of survival and partial self-sufficiency related to access to basic resources: water, food and energy.

### COMMUNITY HUB

Community hubs work at a neighborhood level, as a nexus mediating fluxes of humans, animals, resources, materials, competences, skills, and knowledge.



Figure 10. A vision of the utopian post-collapse society. Designr: Karol Langie



Also support governance processes and cultural and pedagogical activities. Storage is another important function along with the one of exchange.

## Goals and vision

Follow **post-growth** principles in order to achieve **equity**, equal access to information and knowledge.

Advocate for **democratic and inclusive participation** and the creation of a community that supports **social security**, as centralized powers ceased to exist with the collapse.

Create a system in which **money is not**, since money can't buy many conveniences.

Have a society **connected with nature**, fauna and flora due to amount of ecological gardens.

## Strategy and interventions

### FOOD: PRODUCTION, STORAGE, DIET

#### Countryside production

- Cereal, legume, meat and olive oil come from the countryside.
- Train tracks - territorial development.
- 90% of food production is within a 100km radius.

#### Local

- Community green areas (herbs, edible greens; horse chestnut, almonds, walnuts)
- Metro stations to produce vegetables that can be grown in the dark (mushroom, endive, spinach...) and used for stocking (food reserves) mostly for 3 months.
- Community gardens (vegetables, herbs, honeybees, chicken, pigs)
- Recycling of food waste; compost and animal waste (organic fertilizer, biomass to give energy).

#### Rural

- Production in the rural belt is being transported to community hub mainly by train.
- Food produced by people who migrated from the urban to the rural area.

#### State

- Limited amount of importation of other products (coffee, fish)

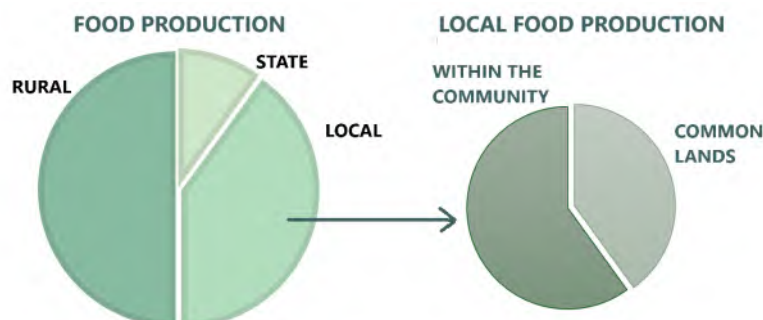




Figure 11. Countryside production. Deign: Karol Langie

## Food production management

- Aimed for 5000 people.
- Externalised: cereals, oleaginous, feed (except grazing parks available on the site), meat (mostly of the production)
- Internalised within each community: fruits, vegetables, poultry and pork
- The fruits and vegetables production takes 2% of the total land for food needs, animal production + animal feed being the most land consuming in today's model.
- In our proposition we reduced at least by half the meat consumption and it will be based on extensive animal production localised mainly in the rural area, serving to the maintenance of green spaces (ecological corridors and edible forest park) and transportation (by domesticated animals).

## QUANTIFYING FOOD NEEDS

Quantifying food needs is an essential part of understanding how much food a community requires to sustain its population. In this case, we are looking at the needs of approximately 5,000 individuals.

By combining the insights gained from the *Calculateur pour la Résilience Alimentaire des Territoires (CRATER<sup>3</sup>)* and “*Pour un Alimentation Résiliente, Citoyenne et Local (PARCEL<sup>4</sup>)*” applications with data on the average French diet and the principles of organic agriculture, we can create a comprehensive estimate of food needs that meets the requirements of the 5,000 individuals.

## Land designated to fruits and vegetables production

There are 1,000,082 m<sup>2</sup> in total designated to the production among which there are 128,114 m<sup>2</sup> available land for gardening, 155,328 m<sup>2</sup> for green light, 128,144 orchard for edible forest and an ecological corridor edible and forest park.

The **Parcel** counts on 1,273 m<sup>2</sup> for fruits, 2,700 m<sup>2</sup> for green vegetables and 22,400 m<sup>2</sup> for other types of vegetables.

The **Crater** has 52 ha destined to the growth of green vegetables, fruits and leguminous.

## FOOD WASTE MANAGEMENT

Food waste management conveys an approach that seeks to reduce wasted food in order to ensure sustainability and improve biodiversity.

Basically, a safe biological process is adopted where bacteria break down food waste (anaerobic digestion) and produce agricultural compost and renewable energy (both are environmentally friendly).

This system also gives food security and nutrition for future generations are not compromised.

<sup>3</sup> <https://crater.resiliencealimentaire.org>

<sup>4</sup> <https://parcel-app.org/>

## Choose the power supply related to your relocation simulation

Territory : Population: Group of people (2000 children, 2000 adults, 1000 elderly)

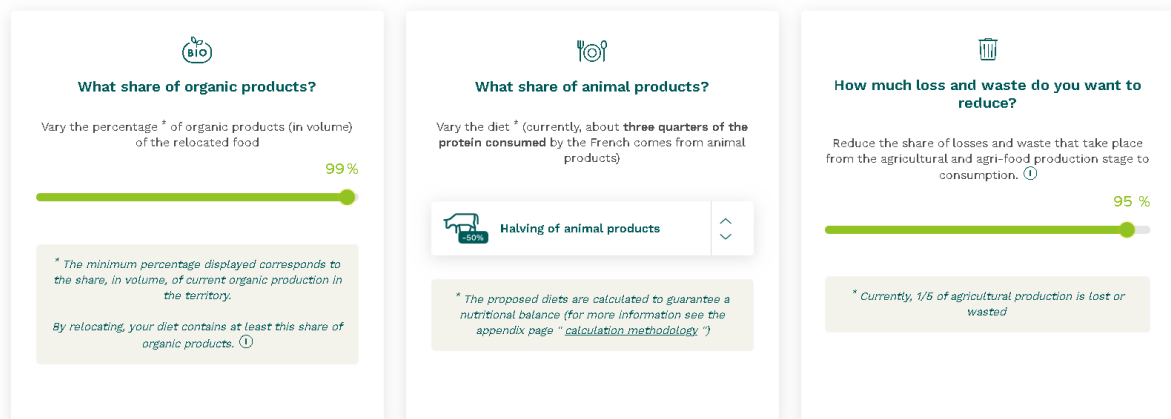


Figure 12. Example of selected criteria in parcel-app.

## WATER SOURCES

We estimate 10% supplied by rain water, 30% is reused water, 30% ground-water,

Uncovered water. A restored river ecosystem is not only a source of water, but also a sanctuary for flora and fauna. It helps to improve the natural water cycle.

It is also a place of recreation for people and a shelter during heat waves.

- Households: 200 kWh, mainly lighting in the dark and heating in the winter, coupled with no individual computers, no cars...
- Storage of food: 100 KkWh, use of water system to cool if it's too hot (learned in Mercamadrid)
- Transportation: 500 kWh, while the train uses energy to transport food to the city, minor distances are travelled by foot, bicycle, pack animal.

## ENERGY MANAGEMENT

### Energy consumption

Today the average energy consumption in the world is 6.720 kWh per capita per year. However, the Energy for Growth Hub has established a Modern Energy Minimum. This claims that we can live with 1000 kWh per capita per year.

In our society we aim to achieve 800 kWh divided as follows:

75% of the energy (3.000.000 kWh) comes from external sources, whereas 25% is generated in the community from renewable sources (1.000.000 kWh).

Solar:  $(800\text{kWh} \cdot 1,1) / 350\text{Wp} = 2,5$  panels per capita needed. As each panel needs on average  $20\text{m}^2$

We estimate  $40.000\text{m}^2$  roof, where 2.000 panels could be installed, providing sufficient energy for 800 people (640.000 kWh).

There are other extra 22.500m<sup>2</sup> in common space, where 1.125 panels could be installed, providing sufficient energy for 450 people (360.000 kWh).

Biomass from the communal garden is another renewable source of energy.

## COMMUNITY HUB

The old office of the metro is refurbished as the central community hub. Food is the factor that shapes this hub:

- It is connected to the metro tunnels for food storage.
- It is a marketplace to exchange

products with the rural belt and to exchange services between communities

- It is a central place to meet, share knowledge, communicate between the communities in the neighbourhood. The hub also represents democracy and inclusion
- It is a research center for new crops and hosts the seed bank
- It is an exchange center, to share knowledge with the countryside in exchange for production

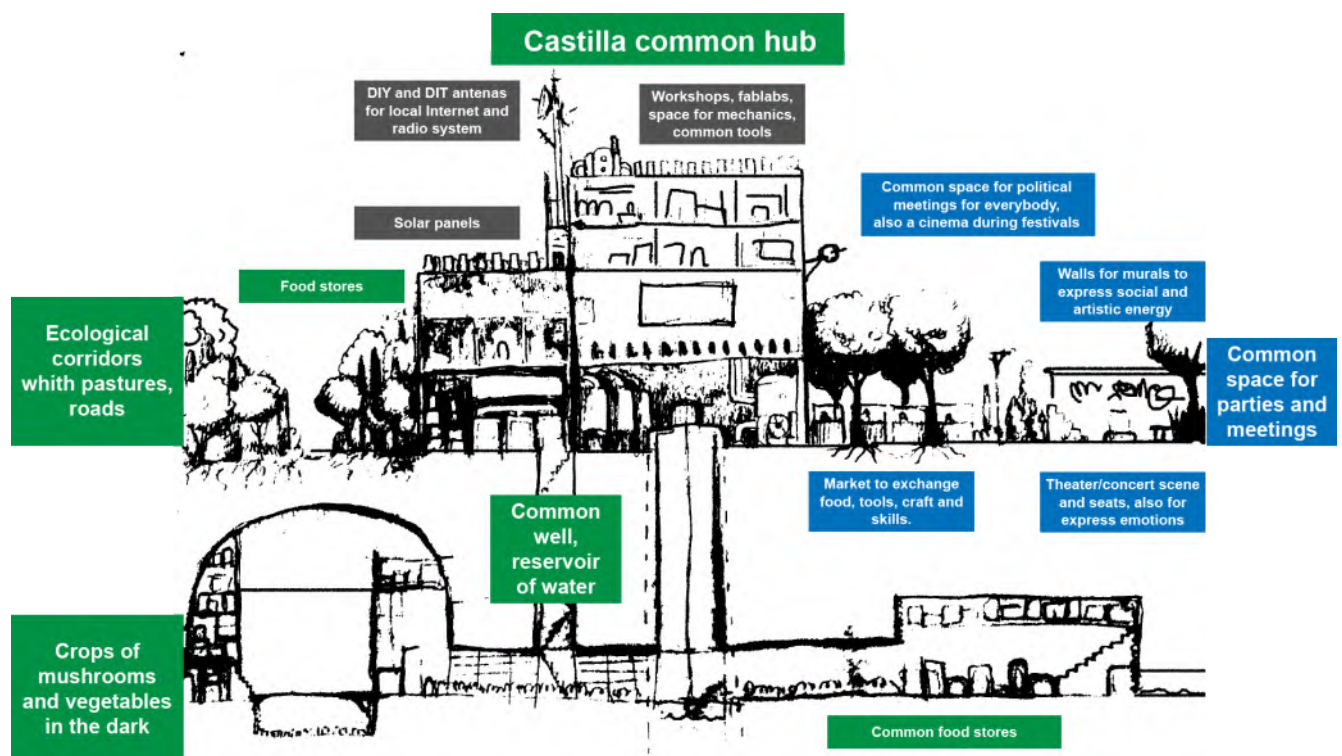


Figure 13. Community hub. Design: Karol Langie





COLLAPSE. Energy supply breakdown



# COLLAPSE

## Energy supply breakdown

### TEAM 3

Joana Monnétreau

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### Challenge: From energy-guzzling to self-sustaining and resilient

As the essential services that we currently take for granted fail to operate, a fundamental reassessment of the structures and systems that underpin daily life and the way society and communities are organized is urgently needed. The process implies creating more resilient community structures and reconsidering the geographic distribution of population.

### Scenario definition

In this scenario the **energy supply breaks down**. There is no gas, oil, electricity available, which hampers import (food, materials, fertilizer, etcetera). There is some energy available from solar panels.

The water supply will stay available to the neighbourhood, making use of what energy is left. It is assumed that there is still a money exchange system functioning, otherwise the neighbourhood will organise an own currency system with the people with whom they exchange goods and services. In the households and in some shops, there is a limited amount of food available for the short term.

The impact of the scenario is that global import of food and most of the national Spanish import are missing, inhabitants are mainly depending on what is produced in the region.

Since the neighbourhood cannot provide the basic needs of its current number of inhabitants, the starting point is that we explore how to provide basic needs to the 30% of the people (7.000 inhabitants) staying.

The assumption is that the other 70% go to farms in the countryside around Madrid.

### Goals and Vision

We focused on the vulnerability of the urban food system to advance regenerative urban food planning for ecosocial transitions in a densely populated and “deprived” neighbourhood. A set of goals were defined, which differ for each of the three phases of development.

## Phase I, First 10 days: Reaction to the emergency

How to meet the first emergency: **survival without competition**, minimising violence and preventing panic are important. And further provide a **minimum existence level** for food, water, and energy. Provide **basic energy supplies for the essential needs** (cooking, basic transport, irrigation, light, health care) and **minimal provision of water** for drinking, household, food production.

Help people to stay in the city if they choose. For the people who want to leave it is important to help them to reach safe, suitable and feasible place.

## Phase II, 3-6 months: building resilience

The neighbourhood needs to:

- make sure that there is a suitable work and community force to make the area liveable;
- build a **resilient community** which is organised based on skills, capacities, motivation; (
- build a resilient food production system for those who stay, making use of the available resources; and
- provide basic energy supplies for the essential needs (cooking, basic transport, irrigation, light, health care) and minimal provision of water for drinking, household, food production.

## Phase III: Consolidation

The integration of all goals leads to a vision for the food system for the Almenara neighbourhood:

## THE VISION

The Almenara neighbourhood has a **resilient** food production system for those who stay after the collapse that **makes use of available resources in the area and maintains collaborative networks with producers in the region**. The neighbourhood is resilient because:

- it can exist on the **resources** that are **in the area** and the networks
- its community has **knowledge and skills** that are needed for **low tech** solutions, food production, processing, storage, distribution and cooking.
- It provides **basic energy supplies** for the essential needs (cooking, basic transport, irrigation, light, health care) and minimal sufficient provision of **water** for drinking, household and food production.
- It has transformed itself from the individual lifestyle to **the community** approach, with supports the less advantaged and is economic in the use of resources.

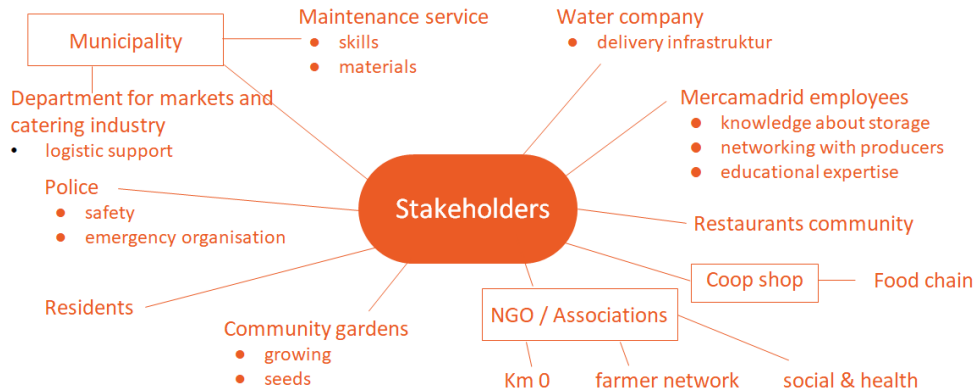
## Strategy

The vision will be reached by community building, capacity building, developing networks and transforming public and private space to enable more food production. To be efficient smart low tech methods will be introduced.

Community building by organising the residents, capacity building, with help from current NGOs and the existing farmer's networks and existing knowledge in neighbourhood, building and strengthening networks with producers and suppliers in the region.



## Stakeholders supporting the transition



### STAKEHOLDERS SUPPORTING THE TRANSITION

Based on the presentations of the local experts and the field visits an overview of the stakeholders which could contribute to the transformation of the food system was made:

#### Public bodies

- Municipality  
Maintenance service (skills, materials) and Market organisation (logistic)
- Police  
Safety and Emergency organisation
- Mercamadrid employees  
Knowledge about storage, Networking with producers, Educational expertise
- Water public company  
Delivery structure

#### Third sector and private sector

- Community gardens  
Growing and seeds
- NGO/ Associations  
Km0 logistics, Farmer network, social & health
- Food related stakeholders  
Coop shop for food chain, Restaurants community

## Interventions in three tempos

### COMMUNICATION

#### First 10 days: Warning system

The information must reach people. The methods for communication are **Radio** broadcasts, Announcements with a **megaphone** and **Information points**.

The communication addressed is to turn off all electric devices, heating and air conditioning systems, to keep informed, to preserve and store dry food, tinned food and grains that last 3–12 months:

Store dried yeast, sugar, jams, chutneys, sauces, tea leaves, peanut butter and biscuits. Store products to produce fresh food at home, such as, yoghurt (milk powder, water and yoghurt culture), herbs, germinated seeds (bean sprouts, onion seeds).

#### 6 months: Resilience building

The representative system prioritizes **inclusivity and transparency**. Each week, representatives from every building gather for a meeting, preceded by assemblies within each building. These assemblies serve as platforms for residents to

voice concerns and propose solutions, with the municipality providing transparent information.

In the **capacity building education program**, residents learn essential skills for sustainable living, including growing food, cooking, resource processing, mobility options, water conservation, energy efficiency, and low-tech solutions.

Through “**learning by doing**” in small groups, residents gain practical experience and collaborate effectively within the community.

### After 6 months: Consolidation

The neighbourhood operates through an assembly system, fostering collaboration and organization:

- **Driving Groups** handle logistics and committee coordination.
- **Workshops and Commissions** focus on specific areas of interest.
- **General Assemblies** facilitate collective decision-making and discussions.

The **capacity building** approach emphasizes self-learning and self-management, empowering residents to take charge of their own development and community affairs.

## MIGRATION

### First 10 days: organizing fluxes

With only **30% of the population staying**, preparation for a trip is crucial for

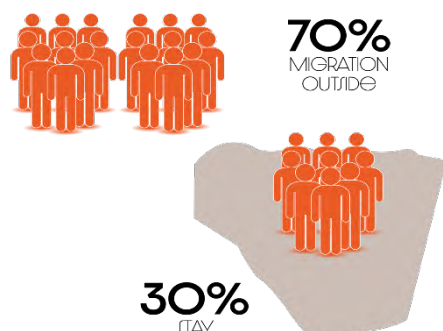


Figure 14. Important exodus. Author: Team 3

the other 70%. Here's how we plan for a walking trip involving 16,000 people:

- **Dividing into Groups:** We form 8 groups, each comprising 2,000 people. The target settlement places are close to villages, railway and sources of water.
- **Walking Distance:** With each person capable of walking 35 km per day, we plan for at least 60 km of walking, translating to a minimum of 2 days of walking.
- **Provisioning:** To sustain the journey, we prepare 32,000 food bags for the trip.

In the first groups, it is essential to gather:

- Constructors to build containers and make empty houses ready for occupation.
- Skilled individuals to build irrigation systems and prepare land for cultivation.
- Strong, young people to assist in container construction, house rebuilding, and other physical tasks.

Initially, residents can inhabit the empty houses as preparations for sustainable living continue.

### 6 months: wooden containers

At this stage, actions are taken for building the wooden containers for the people who needs more space:

**Initial Capacity:** In the first months, each container houses 8 people, totalling 1000 containers.

**Later Adaptations:** As the situation evolves, we adjust to house 3 people per container, amounting to 2650 containers.

**Occupancy Estimate:** Assuming 50% of the population will opt to stay in empty houses, we tailor our container construction accordingly to meet demand.

### PHASE I: FIRST 10 DAYS



### PHASE II: 6 MONTHS



### PHASE III: CONSOLIDATION



Figure 15. Phases of food distribution. Author: Team 3

## After 6 months: Consolidation

Some people from countryside can return to the city if they want.

## FOOD DISTRIBUTION

### First 10 days: reaction

**Closing all stores** is the first step to take in order to prevent inequality. Then all stores (22) will be converted into **food hubs**, serving as a distribution point and as a warehouse. Human labour should be used to move all the merchandise from the local merchants to those locations.

Base on the guidelines (see next),

**food packs** are prepared for everyone (see box 1 for the extra **emergency diet** of 1.033 Kcal/day). The food ration should be as simple as possible, to include:

- a basic staple such as rice, corn, wheat flour or corn–soy blend)
- a concentrated source of energy (oil or another fat)
- a concentrated source of protein, such as beans, peas, lentils.

The **Distribution Center**, which is adjacent to the train station, is where the two-day food packs are prepared.

### BOX 1 Emergency diet

| Food                         | Gr/day | Calories/Kg | cKal/day     |
|------------------------------|--------|-------------|--------------|
| Grain (pasta, rice, bread)   | 99     | 1,310       | 129          |
| Vegetables (excluding pulse) | 160    | 652         | 104          |
| Legumes/pulse                | 7      | 3,470       | 24           |
| Meat and derivatives         | 91     | 3,470       | 314          |
| Dairy (including cheese)     | 178    | 2,000       | 356          |
| Fats (mainly olive oil)      | 12     | 8,841       | 106          |
| <b>TOTAL</b>                 |        |             | <b>1,033</b> |

Alcoholic and non alcoholic beverages, coffee and tea, sugar and derivatives are not taken up in the model



## 6 months: more independence

To increase independence, the Food Center system is maintained, albeit on a lower scale. In parallel, we begin creating our own gardens, initially in open spaces and then modifying them for roofing.

These actions are complemented with harvesting and Fish Farms.

## After 6 months: Consolidation

The goal of this third stage is to **attain independence** by going back to a pre-cash condition and setting up independent shops selling goods made by the community.

## CULTIVATION

The public and private areas will be transformed to enable more food to be

produced. Consumption was calculated based on 80% of the current average diet in Spain. The potential production capacity of the neighbourhood was defined based on the available space and the production data of crops and organic products in the Madrid region.

The production area consists of private productive roofs (flat) (7,000 m<sup>2</sup>), orchards (1,400 m<sup>2</sup>), private kitchen gardens (4,500 m<sup>2</sup>), allotment gardens along the edge of the neighbourhood park (9,000 m<sup>2</sup>), community gardens and food boxes on the former main roads of the avenida (7. 600 m<sup>2</sup>), edible green spaces with newly planted species (25,000 m<sup>2</sup>), professional hydroponics in a fish farm near the metro (2500 m<sup>2</sup>), and sheep grazing in the district parc (25 sheep, 8.5 ha), an olive orchard (2 ha) and chickens in private coops (7,500).

**BOX 2 6 months diet (80% of average)**

| Food                         | Gr/day | Calories/Kg | cKal/day     |
|------------------------------|--------|-------------|--------------|
| Potatoes                     | 70     |             |              |
| Grain (pasta, rice, bread)   | 158    | 1,310       | 206          |
| Vegetables (excluding pulse) | 255    | 652         | 166          |
| Legumes/pulse                | 11     | 3,470       | 39           |
| Fruits                       | 258    | 58          | 15           |
| Herbs                        | 16     | 30          | 0.5          |
| Meat and derivatives         | 145    | 3,470       | 502          |
| Fish                         | 71     | 1,800       | 128          |
| Dairy (including cheese)     | 285    | 2,000       | 570          |
| Eggs                         | 22     | 6,200       | 134          |
| Alcoholic beverages          | 154    | 80          | 12           |
| Sugar and derivatives        | 20     | 4,000       | 82           |
| Fats (mainly olive oil)      | 19     | 8,841       | 170          |
| <b>TOTAL</b>                 |        |             | <b>2,025</b> |

## First 10 days: reaction

Brainstorming and **collaborative goal setting** for the production system.

## 6 months: more independence

Start cultivation on previously prepared soil, with fast-growing plants that can be harvested soon.

We also develop new techniques to collect plant materials and seeds.

## After 6 months: Consolidation

The final phase focuses on agricultural development, beginning to cultivate more demanding species.

## WATER SUPPLY

We assume that the people from Madrid will still have the same amount of water that they have now, only they will need to use it in another way: not for WC flushing, and minimising for household

cleaning, but more for growing vegetables and hydroponics.

## First 10 days: reaction

Pumping water in households with solar energy to **ensure it is available and accessible to every inhabitant** (only for basic needs: cooking, drinking etc.)

## 6 months

**Extend water availability for other uses:** Construction of hydraulic RAM pump (cyclic water pump powered by hydropower), and construction of simple recycling systems.

25 Liters of water will cultivate 1 m<sup>2</sup> to a depth of 25mm per week, according to [www.onspecialtycrops.ca](http://www.onspecialtycrops.ca),

Total area for crop cultivation is estimated in 52,000 m<sup>2</sup>, therefore the weekly water requirement for plants is 300,000 m<sup>3</sup>.

According to data from the latest



Figure 16. The neighborhood transformation. Author: Team 3

INE survey on the matter, the people of Madrid consume 140 Liters of water per inhabitant per day.

RAM pumps supply about 20,000 l/day, therefore 25 RAM pumps will supply more than half of daily water needs of the households in the system.

If water supply is the same as before, RAM PUMPS and water recycling in the system will provide sufficient water.

### After 6 months: Consolidation

At this point, steps will be taken to improve cooperation with water providers and possibly add more city reservoirs.

## ENERGY

### First 10 days: reaction

Solar energy for survival basics such as pumping water in household,

Light, Charging Vehicles and Heating and cooling.

### 6 months

Enable the amount of energy available for other purposes (health care, heating and cooling, and perishables storage):

- Installing more solar panels to increase KWh/day.
- Building dry toilets (to improve waste disposal, save water, and facilitate the collecting of human waste for biogas).
- Building biogas digesters in key locations.
- Partnering with local animal farms to supply feces for energy-intensive tasks like cooking.
- Building solar cookers with materials easily obtainable from homes and shops (Aluminum foil, plastic foil, insulating material such as packing foam,

#### BOX 3. BASIC CALCULATION OF SOLAR PANELS

- 1 m<sup>2</sup> of solar panel generates 3 – 3.5 KWh/day
- 1 Standard residential solar panel has an area of 1.4 m<sup>2</sup> supplying 4.2 – 4.9KWh/day.
- 598 solar panels installed, will provide over 2,511 – 930.2 KWh/day

#### BOX 4. BASIC CALCULATION OF BIOGAS

According to statistics:

- 1 cubic meter = 6KW
- 1 cubic meter of biogas can be obtained from 25kg of dung

Estimation of livestock

- Cattle: 95,000 x 25kg = 2,375,000 kg/day
- Sheep: 40,000 x 2kg = 80,000 kg/day
- Goats: 106,000 x 2kg = 212,000 kg/day
- 7,000 people: 35.84 cubic meter in a day (215.04KWh)

If we have 40% of the animal feces (cattle = 950,000 kg; sheep = 32000kg; goat = 84,800kg. It implies that aprox. 42,600 cubic meter of biogas could be produced daily.

This amount of animal dung can supply biogas for cooking for winter months.

Source: <https://vikaspedia.in/energy/energy-production/bio-energy/biogas/>



newspaper, or fiberglass, plastic food wrap, cloth tape and thermometer).

### **After 6 months: consolidation**

Achieve energy independence: for 7,000 people in 2,100 houses, we shall need 2,701 solar panels (to produce 7,000 kW/day). We collaborate with 19 solar panel suppliers in the area to install new ones on the roofs outside of the neighbourhood.

1,705 batteries will be needed for storage of energy and located in 10 different places (assuming 247 solar panels = 156 batteries), as well as 20 transformers, and 10 diesel electrical generators for emergency (Calculations based on Errekaleor, 2018).

The consolidation phase implies cloning the community in other neighbourhoods in the city. The goal is to create a cluster of autonomous community to generate social and trade interactions.

## **TRANSPORT**

### **First 10 days**

First, we secure electric cars, electric motorbikes and trolleys for transport within the city. There is one electric motorbike shop and three charging stations for electric cars.

Bicycles and scooters are used for short-distance travel within the city and between villages.

A **logistics centre** will then be established on the border of the area. It will be the central distribution point for migrating populations to access essential food supplies.

### **6 months: building resilience**

Actions will aim to provide a **reliable connection between the city and villages** via various modes of transportation: using a variety of transportation options, such as trolleys for railway transportation, bikes, scooters, motorbikes, and electric cars for travel from the closest train station to the village, and bikes, scooters, motorbikes, and electric cars for travel from the city to the border.

Increase the number of trolleys to improve food transport into the city, ensuring efficient distribution and availability of essential supplies.

### **After 6 months: consolidation**

Expansion of Railways by investing in the construction of additional railway lines. Create a well-connected network between the city and the villages, allowing residents to travel freely for various purposes, promoting accessibility and community engagement.

## **Role of the proposal in an ongoing process**

The development of the scenario and the interventions based on the vision show that it is not possible to be self-sufficient even with a reduced population. This highlights the great vulnerability of this densely built and populated area.

It also shows the need for the local government and local organisations to be well prepared for shocks to the current food system, which is highly dependent on energy and transport.

Contingency plans should provide for the organisation of local communities in the event of disasters, not only for the logistics of food supply, but also for communication with the population and capacity building.



SCENARIO 3%. Urban Inequality

## SCENARIO 3%

### Urban Inequality

#### TEAM 4

Aleksandra Jakimiuk

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#### Challenge: Food as a catalyst to solve urban extreme inequality

Devise alternative to manage resources that not only address immediate survival needs but also foster a sense of cooperation among the deprived. How can communal food production and sharing boost a shift from competition to cooperation, empower disadvantaged groups and strengthen their communities?

### Scenario description

In this very dystopic scenario, there is a striking and unsettling contrast between the vast majority of individuals (97% of the population) who are impoverished and struggling to survive and a small, affluent elite (3%) that holds an overwhelming amount of wealth and power. This stark inequality illustrates a world where the resources necessary for a decent life—such as food, water, healthcare, and education—are not distributed equally. Instead, they are concentrated in the hands of the privileged few.

The situation leads to an intense competition among the 97% of the population. They compete for limited resources, trust and cooperation among community members deteriorate as they fight for their basic needs.

The scenario depicted is a kind of metaphor for the broader global divide

known as the Global North and South. To face this conflictive situation underlines the critical need for knowledge and action about social justice and equality.

The problems facing the vast majority of the population, “97%”, are multifaceted and interconnected. One significant issue is the rise of competitiveness and individualism. Additionally, violence remains a pressing concern. Such violence creates an environment of fear and insecurity, substantially diminishing the quality of life for those impacted.

High-density living conditions also exacerbate issues related to the overall quality of life. Basic resources, such as clean air, safe drinking water, and adequate housing, become scarce, impacting public health and education. These factors, combined, create an environment where residents struggle to thrive.



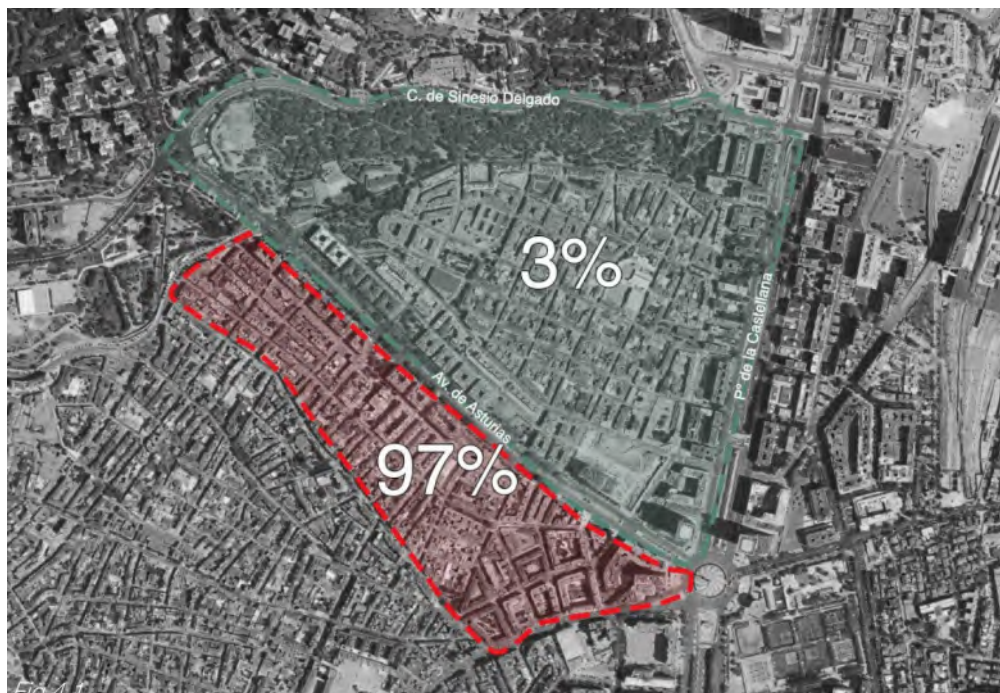


Figure 17. Spatial inequality. Design by P. Amallo based in the work of Team 4

Moreover, there is a profound lack of investment in the needs of the 97% by the wealthiest minority, often referred to as the 3%. This disparity in investment results in inadequate support for essential services, infrastructure, and community development. The issue of landfills and waste management cannot be overlooked, especially in a context of inappropriate infrastructure, which is crucial for effective waste disposal, recycling, and sustainable practices.

## Goal and vision

The objective of reducing inequality is of paramount importance. Central to this aim is the establishment of trust and solidarity among individuals and communities.

To further this goal, it is crucial to share responsibility across all levels of society.

Ensuring equal access to essential resources and cultural capital is an integral component of this effort. Resources en-

compass a wide range of necessities, including financial support, educational materials, and job opportunities.

Equal access to services is also critical. Services include healthcare, education, public transportation, and social support systems.

## Strategic interventions

In such a negative and contentious environment we suggest using the foodscape as venues for social connections and transformative planning. Four main areas for intervention are defined:

### ALTERNATIVE FOOD NETWORKS

Alternative food networks focus on fostering relationships among individuals and communities, prioritising local sourcing, sustainability, and social equity. A key aspect of these alternative systems is the concept of non-monetary exchange. This approach encourages individuals to

share goods and services without the direct use of money, fostering a sense of community and belonging.

Labour and cooperation are also central to the functioning of alternative food networks. Community members work collectively on projects such as community gardens, food cooperatives, or shared kitchens.

## REGAINING ACCESS TO OTHER RESOURCES

Regaining access to resources is a significant empowering process that involves identifying and retrieving the tools, materials, and information.

**Do It Yourself** encourages users to build, modify, and maintain their own technology systems. This self-sufficient mindset fosters innovation and creativity, enabling people to tailor technology to their specific requirements.

**Open source solutions** facilitate knowledge sharing and collaboration among users. Platforms such as N55<sup>5</sup>, which offers a range of open-source tools and projects focused on sustainable living and resource management, and Google Scholar, which provides a free search engine for academic publications, enabling users to find scholarly articles and research without cost.

The creation of **alternative infrastructure** is a crucial element in empowering individuals and communities. Examples of low-tech open source practices encompass Berkeley composting (in which organic materials may be placed in a large heap, and leaving it there until it breaks down several months later), rainwater tanks, or urban guerilla farming, etc.

The Solar power station described in N55 manual, can supply a daily energy consumption of approximately 600 Wh. Current solar modules have an efficiency of approx. 15 %, i.e. 15 % of the sunlight exposed to the photovoltaic cells is converted into energy.

## EXPANDING COOPERATION

Community Supported Agriculture promotes sustainable farming practices, it connects farmers directly with members. The latter buy shares of a farm's harvest in advance. There is a shared responsibility also in adverse times for farmers like winter or drought.

## HACK OF THE SYSTEM

The act of hacking into the system demonstrates potential vulnerabilities and flaws in the current structure. A critical question arises: Do we still need the 3%?

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<sup>5</sup> <https://www.n55.dk/MANUALS/manuals.html>

## REFERENCES

Errekaleor (2018). *Informe técnico sistema fotovoltaico aislado para el barrio de Errekaleor*.

Lardon, S., & Piveteau, V. (2005). Méthodologie de diagnostic pour le projet de territoire: une approche par les modèles spatiaux. *Géocarrefour*, 80(2), 75-90.

Sassen, S. 2016. The global city: Enabling economic intermediation and bearing its costs. *City & Community* 15 (2): 97–108.

Simon-Rojo, M. (2019). Agroecology to fight food poverty in Madrid's deprived neighbourhoods. *Urban Design International*, 24, 94-107.

Simón-Rojo, M. (2021). Powering transformative practices against food poverty with urban planning. *Urban Agriculture & Regional Food Systems*, 6(1), e20021.

Stojanovic, M., Mitkovic, P., & Mitkovic, M. (2014). The scenario method in urban planning. *Facta Universitatis, Series: Architecture and Civil Engineering*, 81-95.

Triboi, R. M., de Vries, J., Conaré, D., Dehaene, M., Simón, M., Rojo, M. L., ... & Tomaszewska, M. Evaluation of a Pilot for Transdisciplinary and Participatory Learning and Research for food system planning. *Feeding the melting pot: agroecological urbanism for inclusive and sustainable food practices*, 91.

## Technical Websites:

CRATER  
<https://crater.resiliencealimentaire.org>

N55 <https://www.n55.dk/>

PARCEL <https://parcel-app.org/>

VIKASPEDIA  
<https://vikaspedia.in/energy/energy-production/bio-energy/biogas/>

## Websites local stakeholders

Bajo el Asfalto está la Huerta  
<https://bah.ourproject.org/>

LA OSA cooperative supermarket  
<https://laosa.coop/>

MADRID AGROECOLOGICO  
<https://madridagroecologico.org/>

NETWORK OF URBAN GARDENS  
<https://redhuertosurbanosmadrid.wordpress.com>

## Madrid public policies related to food and the IP

BARRIOS PRODUCTORES  
<https://barriosproductores.madrid.es/>

COMMUNITY GARDENS  
<https://diario.madrid.es/huertos/>

PLANES INTEGRALES DE BARRIO  
[Planes Integrales de Barrio - La Ventilla - Almenara - Ayuntamiento de Madrid](#)

SUSTAINABLE AND HEALTHY FOOD STRATEGY  
<https://diario.madrid.es/madridalimenta/estrategia-alimentaria/>

SUSTAINABLE HEALTHY FOOD STRATEGY  
<https://diario.madrid.es/madridalimenta/estrategia-alimentaria/>



## ANNEX

### THE PROJECT CONSORTIUM

#### The Netherlands: **LE NOTRE Institute**

It has leaded the Erasmus+ AESOP4Food, shares its expertise, network, and e-learning facilities and thus substantially the implementation of all planned activities. Its expertise includes methods and tools for democratic planning and design, co-creation of landscape knowledge and landscape objectives, and the implementation of student-centred and highly interactive e-learning courses. This expertise will be required for designing and implementing the course development and designing the blended learning elements.

#### Belgium: **Ghent University, Dept. Architecture and Planning.**

Incorporation of urban theories and theories of urbanization within the fields of planning and design, moving away from normative design theory. Including systematic work on planning and design models to address the urbanisation of food.

#### France: **Institut Agro**

The Institut National d'Enseignement Supérieur pour l'agriculture, l'Alimentation et l'Environnement, is a French public institution devoted to higher education and research in Agriculture, Food and Environment. The Institute was created in January 2020, resulting from the merger of two higher education institutions, Agrocampus Ouest (Rennes) and Montpellier SupAgro (formerly F MONTPEL10). Montpellier SupAgro is also now one of the two internal schools of Institut Agro.

#### France: **Terres en Villes**

It is the French network of Food and Agriculture policy actors. Created in 2000, the association now gathers 29 cities around France willing to exchange their knowledge and mutualize their approaches in the fields of food planning. Each one jointly represented by the local authority and the Chamber of agriculture who are committed to working together Terres en Villes pursues three missions: Promote the know-how exchanges between its members, stimulate experimentation, and enrich the debate on city, its agriculture and its food system.

#### Poland: **Pracownia Dóbr Wspólnych**

It is a platform for action, creating and developing practical alternatives in the face of visible and looming systemic social, ecological, economic and other problems on the horizon. To meet them, the platform sees the need to experiment with new models of life, work and sharing.

#### Poland: **Warsaw University of Life Sciences**

The WULS, through the Institute conducts scientific research on the relationship between nutrition and health and quality of life, including the evaluation of food products in terms of health, consumer needs and behavior regarding the level and quality of consumed food and catering services, as well as the economics of the household and the functioning of the food market in Poland against the background other European Union countries. In addition, em-

ployees of the Institute cooperate with numerous Polish and foreign or international organizations.

Spain: **Red de Municipios por la Agroecología**

This is a Spanish association of Local Authorities to promote sustainable and healthy food policies aligned with Agroecology. The network brings together policymakers, politicians and social organizations in order to support cities in the development and implementation of local food policies, through creating multi-actor Communities of Practices on different issues (e.g., health and right to food, green

public procurement, legal protection of peri urban agricultural land or participatory governance processes and also enhancing P2P cooperation and political engagement.

Spain: **Universidad Politécnica de Madrid**

In its "Urbanism and Agrarian Systems" research line, UPM, through the Research Group on Architecture, Urbanism, and Sustainability (GIAU+s), has developed models and methodologies to evaluate and direct the design of sustainable food systems, as well as useful tools to incorporate peri-urban agrarian areas in urban and territorial planning.

## ANNEX. PROGRAM

| Time  | Place,                                   | Agenda / activity   | Possible result  |
|---|--|---|--|
| Day 1: Sunday June 26, 2022: Travel to Madrid, or earlier if you wish |  |   |  |
| 19.00   | Plaza de las Comendadoras (Federalcafe)  | have an informal meeting early evening, for those who want  |  |
| Day 2: Monday June 27, 2022 - ETSAM                                   |  |   |  |
| 9.00-13.00  | Madrid ETSAM, Avenida Juan Herrera, Nº 4 | Welcome<br>Presentation of participants<br>Presentation of the workshop<br>Presentation of the results from the LL Madrid                             |  |
| 13.00- 14.00  |  | Lunch at the canteen  |  |
| 14.00- 17.30  |  | Master class. Vulnerability of current urban food system<br>Team building<br>Workshop I: Scenarios  | Teams associated to the different scenarios. Anticipate future problems  |
| Day 3: Tuesday June, 28, 2022   |  |   |  |
| 6.00-12.00  | Madrid                                   | Field trip: Mercamadrid, Madrid Km0. Community garden   | To realize the magnitudes of the food system in a metropolitan area  |
| 12.00-13.00   |  | Lunch at the canteen  |  |
| 13.00-15.00   |  | Insights into the neighbourhood Ventilla Berruguete (Tetuan, Madrid)<br>Workshop II. Analysis   | First map overview of the local actors and food distribution-consumption nodes. Identification of stakeholders and power structures  |
| Day 4: Wednesday June 29, 2022  |  |   |  |
| 9.00-13.00  | Madrid                                   | Workshop III. Analysis-Diagnosis<br>Master class: Urban food strategies   | Identification of areas (not only physical) with potential for improvement. Address problems by leveraging local resources.  |
| 13.00-14.00   |  | Lunch at the canteen  |  |
| 14.00-17.00   |  | Workshop IV. Goals  | Set of goals to improve food distribution-food access.   |
| 20.00   |  | Common dinner   |  |
| Day 5: Thursday June 30, 2022   |  |   |  |
| 9.00-13.00  | Madrid                                   | Visit cooperative supermarket<br>Dérive including Visit municipal market<br>Master class: Strategic plan for municipal markets and food retail sector | Comparison of alternatives<br>Sharing information from field work through collaborative tools: <a href="https://padlet.com/madridagroecologico/m0qh8j7r64c5ywn7">https://padlet.com/madridagroecologico/m0qh8j7r64c5ywn7</a> |
| 13.00-14.00   |  | Lunch at the canteen  |  |
| 14.00-17.00   | University                               | Workshop V. Proposal  | First draft with a proposal. Application of collaborative mapping tools to prefigure alternatives  |



| Time   | Place,                                  | Agenda / activity   | Possible result  |
|--|---|---|--|
| 17.00- 18.30   | On-line                                 | Online course AESOP4FOOD on Monitoring and Evaluation   |  |
| Day 6: Friday July 1, 2022                               |   |   |  |
| 8.00-18.00   | Zarzalejo                               | Field trip<br>(Lunch provided and included 13.00 – 14.00)<br>CSA Zarzalejo Local center<br>Communities in Transition<br>Master class: Agroecological movement<br>Master class: Participatory tools, networks and community building<br>Workshop VI Proposal | Insight into a community in transition and a short supply chain in a rural area                      |
| Day 7: Saturday July 2, 2022 – Madrid – Espacios comunes |   |   |  |
| 9.00-13.00   | Espacios comunes, c/Lorezana 2, Madrid  | Workshop VII. Proposal<br><br>Participants buy their own lunch  | Application of strategic thinking to a weakly defined problem, and develop action oriented proposals |
| Day 8: Sunday July 3 2022 Madrid – Espacios communes     |   |   |  |
| 9.00-13.00   | Espacios communes, c/Lorezana 2, Madrid | Workshop VIII   | Application of strategic thinking to a weakly defined problem, and develop action oriented proposals |
| 13.00 -14.30   | Lunch                                   |   |  |
| 14.30 - 7.30   | Espacios communes                       | Workshop IX   | Application of strategic thinking to a weakly defined problem, and develop action oriented proposals |
| Day 9: Monday July 4, 2022 - Madrid                      |   |   |  |
| 9.00-12.00   |   | Workshop X  | Plan to communicate findings and proposals   |
| 12.00 – 3.00   |   | Presentation of results   |  |
| 13.00 – 4.30   |   | Picnic offered by the IP organisation   |  |
| 17.00 – 3.00   |   | (Optional) Field trip to a CSA for a collaborative working session at the farm)   |  |
| Day 10: July 5: Travel day                               |   |   |  |