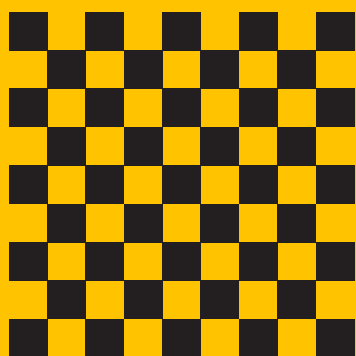


# A2.

# Dinámicas Urbanas y Territoriales: Metabo- lismo, Desigualdades Sociales, Resiliencia y Regeneración



ACTAS  
DEL  
CONGRESO



IV CONGRESO ISUF-H BARCELONA  
28-30 SEPTIEMBRE 2020

Forma Urbis  
y Territorios Metropolitanos

METRÓPOLIS EN RECOMPOSICIÓN.  
PROSPECTIVAS PROYECTUALES EN EL SIGLO XXI

# Vol.3



UNIVERSITAT POLITÈCNICA  
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“Forma urbis y territorios  
metropolitanos. Metrópolis  
en recomposición.  
Prospectivas proyectua-  
les en el siglo XXI”**

## **VOLUMEN 3**

A2. Dinámicas urbanas y  
territoriales: Metabolismo,  
desigualdades sociales,  
resiliencia y regeneración

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### **Editores**

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# Presentación

En el IV Congreso ISUF-H “FORMA URBIS y territorios metropolitanos. Metrópolis en recomposición. Prospectivas proyectuales en el siglo XXI”, a celebrar en Barcelona el año 2020, nos planteamos abordar las claves para la regeneración de los territorios contemporáneos. Desde una doble visión diacrónica y prospectiva, planteamos profundizar en las aportaciones sobre el conocimiento de las formas urbanas y territoriales y sobre los procesos recientes que han condicionado su actual estado. Se trata pues de enfocar posiciones y tesis que sean útiles para la gestión de las transformaciones urbanas y territoriales que mejoren su eficiencia, poniendo como foco las realidades actuales de las metrópolis en recomposición.

Desde el foco puesto en las aproximaciones morfologistas para la comprensión e intervención en los actuales territorios, plantearemos, como eje temático del Congreso, una revisión desde la perspectiva histórica de cómo aquellas han evolucionado y de cuáles son las posiciones teóricas más relevantes que describen las territorialidades contemporáneas. Para ello, las ponencias del Congreso (ejes temáticos del mismo) aportarán una visión retrospectiva y prospectiva sobre las “escuelas” que mayor protagonismo han tenido en el estudio de la *forma urbis*: británica, francesa, holandesa, italiana e ibérica.

El Congreso quisiera presentar las principales investigaciones sobre morfología urbana y territorial, consciente de la evolución de la ciudad compacta tradicional hacia los actuales territorios metropolitanos, en sus diferentes situaciones geográficas y escalas, tratando de proporcionar luz sobre el análisis de los procesos que configuran las formas urbanas, rurales y territoriales y la renovación en su proyecto.

A través de las presentaciones de expertos en el análisis morfológico y en el proyecto urbanístico y la gestión de los procesos, las ponencias plantearán cómo abordar las “permanencias” frente a las vulnerabilidades; las “transformaciones” de piezas o fragmentos urbanos o territoriales, o los “nuevos artefactos” que construyen y tejen infraestructuras en el territorio.

Este amplio bagaje metodológico, que se ha consolidado como herramienta útil para analizar, comprender y proyectar las ciudades, no sólo no ha perdido vigencia, sino que se ha fortalecido con iniciativas como la del Internacional *Seminar on Urban Form*, de larga trayectoria investigadora y divulgadora, cuyo XXIV congreso fue organizado brillantemente por ISUF-H en Valencia, en septiembre de 2017.

Se propone un Congreso que permita avanzar en la discusión sobre las limitaciones que la morfología pueda presentar para la solución de los actuales problemas urbanos y territoriales relevantes (desigualdad social, emergencia energética, disrupción tecnológica...) y para generar nuevos dispositivos, mecanismos e instrumentos, y aportaciones a los proyectos urbanos y territoriales.

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Así mismo, en ese marco, se pretende aportar nuevas ideas para una renovada visión y enfoque del proyecto metropolitano. En el caso de Barcelona, en el actual proceso de redacción del nuevo Plan Director Urbanístico del Área Metropolitana, los avances en la nueva gestión del litoral, o las políticas de regeneración urbana en la capital y en los municipios del área, servirán para contextualizar un laboratorio de nuevas experimentaciones y de reflexión teórica. Este marco permitirá establecer comparaciones y analogías con otros contextos de las nuevas metrópolis en recomposición a nivel internacional.

Para ello, se contará con ponencias-debate, a cargo de especialistas en morfología urbana y territorial y de reconocidos profesionales que intervienen en la planificación, el proyecto y la gestión. Así mismo, las comunicaciones de los congresistas, que se presentaran en la doble modalidad: sala plenaria- para las más destacadas por su calidad reconocida por el Comité Científico, y las presentadas y en concordancia con los ejes temáticos del Congreso, debatidas específicamente en tres salas simultáneas para evitar la dispersión de presentaciones.

ISUF-H Barcelona 2020 promueve y estimula, por tanto, investigaciones con una perspectiva comparada y de fluidez disciplinar, propia de geógrafos, historiadores, arquitectos, urbanistas, paisajistas y, en general, de estudiosos urbanos de diferentes orígenes disciplinares.

Los doce volúmenes en los que se publican estas actas recogen cada uno de los ámbitos temáticos en los que se ha estructurado el congreso, que se enumeran a continuación:

- A1. Territorios sensibles. Geografías y paisajes en transformación
- A2. Dinámicas urbanas y territoriales: Metabolismo, desigualdades sociales, resiliencia y regeneración
- A3. Teoría, disrupción digital y visualización, praxis, formación y difusión
- A4. Bases del proyecto urbano y territorial: forma y estructura
- A5. Bases de la planificación, programa, proyecto, gestión
- A6. Políticas urbanas y territoriales, derechos y ciudadanía

Carlos Llop  
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## **A2. Dinámicas urbanas y territoriales: metabolismo, desigualda- des sociales, resiliencia y regeneración**

- METABOLISMO SOCIAL Y ECOURBANISMO
- BARRIOS PRECARIOS Y TRANSFORMACIONES URBANAS
- CIUDADES RESILIENTES: CLIMA, ENERGIA, AIRE, RESIDUOS
- REGENERACIÓN URBANA Y TERRITORIAL

Las ciudades y territorios se transforman como producto de las dinámicas sociales y económicas, flujos de materia y energía entre naturaleza y sociedad. Una visión ecosistémica de estos procesos y un incremento en la sensibilidad sobre como disminuir el impacto asociado, en especial de los procesos irreversibles, ha adquirido un papel relevante en la reflexión urbanística.

La vulnerabilidad social concentrada en determinadas áreas urbanas, a su vez consideradas áreas vulnerables, comporta la existencia de lugares precarios necesitados de atención y transformación prioritaria. La concentración de pobreza vinculada a la deficiencia del soporte o a los déficits en los servicios demandan de la atención de las instituciones públicas, con una perspectiva de equidad y de sostenibilidad social.

La capacidad de sobreponerse o de recuperarse a los impactos es lo que hace menos vulnerables barrios, ciudades y territorios. Impactos que pueden ser de naturaleza diversa: el cambio climático, la contaminación del aire, la deficiencia energética, declive económico, corrientes migratorias. La capacidad de adaptarse a nuevas circunstancias sobrevenidas y regenerarse depende en buena medida de la morfología de las cosas urbanas, ya sean estas infraestructuras, dominios o arquitecturas de modo individual o agrupado.

Proyectar tomando en consideración la capacidad de recuperarse frente a un impacto es una prioridad y un objetivo fundamental de la definición morfológica. La regeneración urbana y territorial no deja de tener como objetivo la mejora del metabolismo, la equidad social y la resiliencia física y social del entorno.

Las permanencias, elementos físicos, han de tener capacidad de adaptarse a las dinámicas cambiantes. Tanto mejor será la forma cuanto mayor sea su capacidad de adecuarse a las circunstancias.

El verde en sus variadas dimensiones ocupa buena parte de las comunicaciones de este volumen. Los espacios abiertos, la infraestructura verde, los servicios ecosistémicos, los ecotonos, espacios naturales y antropizados; el sistema agroalimentario, el autocultivo y los huertos urbanos, sistemas naturales de drenaje y saneamiento, etc. son el tema común de reflexión. Los espacios de reserva como medio de reestructuración, resilien-

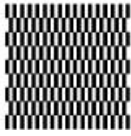
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cia y regeneración de la metrópolis. Los casos de estudio: Región Metropolitana de Barcelona, Vega del Jarama (Madrid), Collserola, Besos, Baix Penedés, Trento, Las Palmas de Gran Canaria, entre otros.

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IV CONGRESO ISUF-H  
BARCELONA 2020

## Forma Urbis y Territorios Metropolitanos

METRÓPOLIS EN RECOMPOSICIÓN.  
PROSPECTIVAS PROYECTUALES DEL SIGLO XXI

# Creative Food Cycles. Exploring the creative dimension of regional foodsheds in Europe.

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**Keywords:** resilient food cycles, regional foodsheds, urban rituals, conviviality, circular economy.

### Abstract:

Following on the UN Habitat III Conference (Quito 2016), the international scientific community has recognised through evidence-based policies the key role of cities for resource consumption. Drivers of the current metabolic rift in food provision, every day in a city the size of Barcelona, Rome and Berlin 30 million meals are consumed or disposed; 47% of urban solid waste is related to food (0.74 kg/person per day) which takes 10 calories of fossil-fuel energy to produce each single kilo (Pollan, 2006; Steel, 2009; Newman & Cepeda-Márquez, 2018). The scale of this unperceived revolution has dramatically transformed the domestic economies, providing a higher level of food security in favour of the pervasive diffusion of places for trade in home products (e.g., shopping malls, discount-stores). This resulted in the relocation of common tastes at the expense of urban metabolic imbalances, making citizens more and more dependent on big distribution chains and subject to a "supermarket diet". In considering the calls for collective actions to confront future territorial and societal challenges, the role of food as an urban material concerns a quest of factors and socio-spatial arrangements in place, which identify resilient food systems as integral part to Lefebvre's notion of "the right to the city" (1968). Against this backdrop, the paper explores how the project Creative Food Cycles stimulates an intercultural dialogue between three partner cities (Hannover, Barcelona, Genova) by enhancing creative co-design practices, teaching experiences and participatory actions to trigger social awareness about *Urban Metabolism* and regional geographies related to food.<sup>1</sup>

1. This essay is based on the activities developed within the framework of Creative Food Cycles (CFC), a project co-funded by the Creative Europe Programme of the European Union for the years 2018-20. In particular, it elaborates on the creative actions led by Leibniz Universität Hannover – Institute of Urban design and Planning (LUH, Germany), in cooperation with Institut d'Arquitectura Avancada de Catalunya (IAAC, Spain) and Università degli Studi di Genova – Department of Architecture and Design (UNIGE, Italy). For further information about the work programme, the project activities and the audience development strategy see: <https://creativefoodcycles.org/>

## Urban Metabolism: a question of flows, places and players

Assuming different meanings according to the scientific contexts in which it is used, the notion of *urban realm* is not a foregone conclusion. In the context of this paper, the one proposed by Pierre George<sup>1</sup>, appears significant since he firstly highlights the scope of the *urban fact* as a world condition "in its geographical-spatial sense, by the set of dialectical relationships between society, nature and the organization of the territory through its transformation processes" (George, 1961: 279). In fact, planning the new urban condition, it means thinking not only the spatial form of the cities, which is always subject to change, but to conceive its forms of aggregation on different semantic levels: the asymmetric formulation of markets' offer/demand, the extensive re-production of places for distribution/consumption, the physical/digital infrastructural imbalances, the evolution of consumers trends—both in material and immaterial ways—as well as the exploration of new habits, rituals and job opportunities, which are influenced by processes of *creative disruptiveness*<sup>2</sup>.

It is a systematic framing condition, not only to cope with cross-cutting topics, but to provide a position and a research orientation on the crucial challenges dealing with the current diversified universality of urban phenomena. A condition of inter-dependence between every single human activity determines tangible spatial effects—even the intangible consequences—as described by Barry Commoner<sup>3</sup> with the *Four Laws of Ecology*. In this regard, among the calls for the necessity of collective action to face future territorial and societal challenges, the development of resilient food systems and the fair access to food supply chain represent an integral part of the "urban question" (Castells, 1977); a concrete expression to Lefebvre's concept of "the right to the city" (Harvey, 2008).

Paraphrasing Commoner's words "there is no such thing as a free meal" (1971), since the exploitation of resources will inevitably carry an ecological cost as well as an augment of entropy in the whole system; there is no "away" to which things can be thrown; any exhausted cycle will affect the life-cycle of another matter. It is the difference between the "take-make-dispose economy", which has long relied on inputs of cheap and commodification of finite goods to create conditions for growth and stability, and the "circular economy", which is regenerative by intention and design (*design-out waste*). This development model is based on the definition of alternative value chains in a holistic sense, considering territorial justice, economic participation, creative *product-to-service* approaches, recycle strategies and the use of renewable energies as long-term sustainable pillars. (Ellen MacArthur Foundation, 2014)

Food, in terms of food systems, regards not only the complex sets of market-driven activities and value chain processes, but also cultural actions and human exchanges that affect in a broader sense Europe's long-term sustainability and our living conditions. We sustain that food cycles can become drivers for positive change: for urban qualities, for cultural practices, for new urban commons, urban education, as well as overall for economic development, ecological targets, and social integration. (Schröder, 2019). It is increasingly evident that the future of our urban habitats will depend on the degree of interoperability and the quality relationships that we are able to implement through local design practices, on the one hand, and strategic planning approaches, on the other hand, to ground theories and to shape the governance of socio-spatial transformations.

Understanding these interactions between physical environments as diverse sets of dynamic life cycles (connecting goods, people, energy, food, information, biota, water, sediments, air, mobility, etc.) it means to overcome the relational ontology of "humanity-in-nature" and the dialectic dualism of "nature and society" (Swyngedouw *et al.*, 2005; Moore, 2011). Without discussing the trajectories in conceptualizing the definition of *Urban Metabolism (Tab.01)*, here this concept is understood as the collection of socio-technical, spatial and ecological processes—which are ideally, but not often equitably distributed—to shape the levels of interdependence occurring among cities and territories at different scales, sustaining the demands of a certain population and affecting the surrounding environment (*urban footprint*).

Tab. 01 *Trajectories in conceptualizing the city in Urban Metabolism studies.*

Source: (Musango *et al.*, 2017; Sommariva, 2020)

Category	Description
<b>Stocks / Flows approach</b>	Quantifying human activities according to clusters/systemic approach in order to determine urban dynamics in the sense of flows and areas of influences. The cities are analysed in terms of inputs and outputs of resources, materials, and energy (e.g., Wolman, 1965; Boyden & Celecia, 1981).
<b>Urban patterns approach</b>	Originated from the 19 <sup>th</sup> cen. hygienist/utopian approach due to industrialization and urbanisation of society, interpreting cities as living organism (e.g., Geddes, 1915; Mumford, 1938) or patterns of multiple living spaces, expression of human interactions according to the new physicalism approach (e.g., Jacobs, 1961; Alexander, 1977).
<b>Urban ecology approach</b>	Environmental planning has regarded cities as dynamic eco-systems ( <i>habitats</i> ) analysing the biota of urban areas and the impact of human activities on landscapes, natural cycles disturbances and ecosystem services accounting ( <i>ecological footprint</i> ). (e.g., Hough, 1990).
<b>Bio-social approach</b>	Combining the application of adaptation ( <i>resilience</i> ) and ecological metaphors within social geographic studies to understand for instance, the role of competition and cooperation as a mechanism of change and progress in the urban management ( <i>socio-ecological systems</i> ) (e.g., Ostrom, 1999; Berkes <i>et al.</i> , 2003).

This opens up new area of applicability for the *Urban Metabolism* concept: by shifting from a mere ex-post monitoring/accounting approach towards an ex-ante co-design planning method, able to build alternative scenarios dimensioned on site-specific impacts and to define spaces of interactions and multi-functionality. Due to this reformulation of fields, three lines of research-action can be derived; each one characterized by a driver of change, namely *flows*, *places* and *players*:

- The line of the *Adaptive dynamics* investigates how in/out *flows* of a system can be managed according to long periods of aggregation/transformation of resources and shorter periods that create opportunities for innovation of certain uses/life cycles. It is a vision of persistence borne out of change influencing self-organisation and adaptation of ecosystems (Gunderson & Holling, 2002);
- The line of *Ecological quality* focuses on qualities/performances and spatial effects in *places*, linking multiple scales of interventions (e.g., from territory to urban scale, from architecture to design) and multi-targeted challenges (e.g., EU Urban Agenda, UN Sustainable Development Goals) to implement resilient strategies according to "productive urban landscapes" (Viljoen & Bohn, 2014);
- The line of *Social sustainability* involves the *players* (public, private, institutional, economic) who take part in the transformation processes, creating networks or micro-hubs of local metabolism: site-specific flows of circularity enhancing ecological resilience of local communities as catalysts for urban innovation and creativity (Petrescu *et al.*, 2012).

In this framework, *Food-Design-Territory* represent a new urban equation, aiming at the applicability of cyclical thinking revolving around the idea of *Creative Food Cycles* as driver of urban resilience (advanced nature-based solution for public space), to promote social innovation practices (new rituals, conviviality and alternative forms of commons) and to implement the democratic access to digital-technologies (from the digital manufacturing of new materials to co-design of new processes).

## Creative Food Cycles. You are what you (can) Make and Eat

The change of paradigm regarding food as an urban commodity, able to shape more and more the socio-spatial arrangements in place, concerns a quest of factors (economic sustainability, environmental impacts, nutritional aspects, health security, territorial justice) which see the role of urban planners, architects, and designers to be empowered with new languages, tools and exchanges to widening the interfaces between creativity, places and public awareness. In this regards, against the wide spectrum of research-by-design approaches currently debated in academies and scientific society, what particularly interested us is the reference to the training and education work carried out by *Ulm School of Design*<sup>4</sup>, as capacity building for design students bringing together creativity and innovation "from the spoon to the city" (Maldonado, 1970). This is one of the first modern example of intuitive-teaching programme, promoting international and multi-disciplinary exchanges of point of views to form professionals with different skills and expertise based on independent thinking, civic inspiration, and social interaction through learning-by-doing experimentations – a prerequisite of the circular economy we aspire today (Schröder, 2019).

In this framework, the European project *Creative Food Cycles* wants to establish an international multi-disciplinary platform to explore social perception of the challenges and connections between food, design, creativity and space issues connected to resilient city metabolism strategies (Fig.01). The project, articulated on a recursive set of co-design actions – international workshops, art-installations, itinerant exhibition, international festival and academic symposium – wants to stimulate intercultural dialogue between three partner cities (Hannover, Barcelona, Genova), overlaying multiple challenges related to food cycles and urban metabolism, according to three main phases:

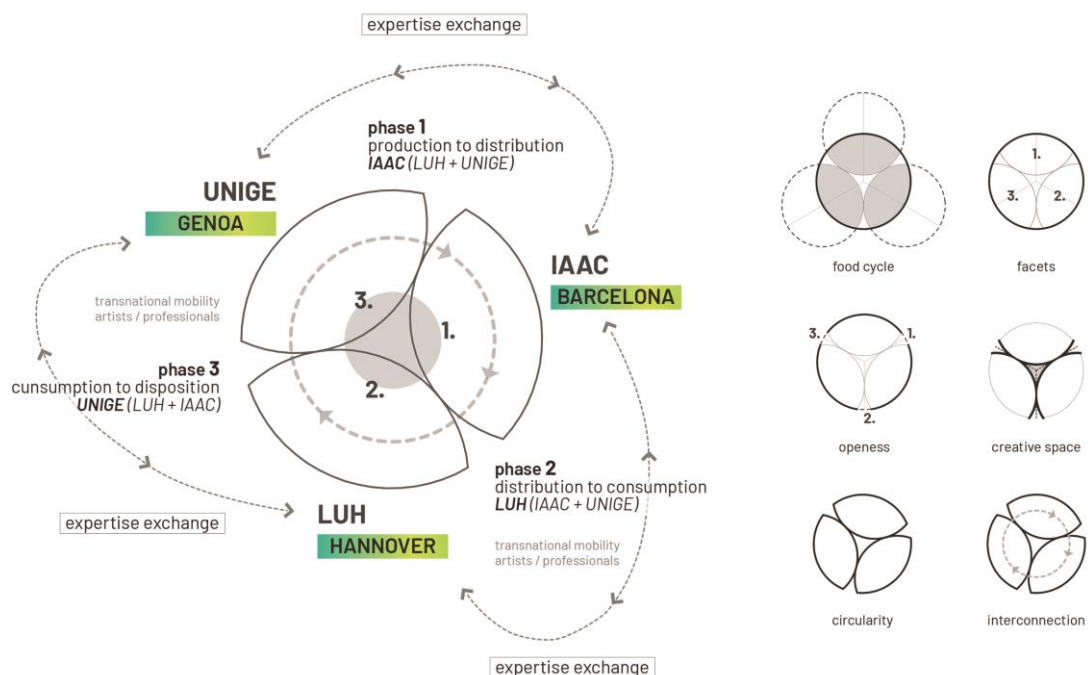


Fig. 01 The phases of Creative Food Cycles and international expertise exchange.

Source: (Leibniz Universität Hannover, Regionales Bauen und Siedlungsplanung © Creative Food Cycles, 2019)



- phase 1: *Production to Distribution* (IAAC) demonstrating how self-sufficiency and ICT can be combined for enhancing food production in urban contexts, promoting responsive design practices by the use of digital fabrication in order to prototype micro-scale urban gardening/habitats;
- phase 2: *Distribution to Consumption* (LUH) focusing on new models of distributing, marketing, processing regional products into collective "urban food hotspot" characterized by multi-purpose stages, connecting audience to open public activities and pop-up markets;
- phase 3: *Consumption to Disposition* (UNIGE) exploring the process which links food from consumption to disposal, by offering new potential meanings and fields of applicability from discarded products to product/service design, widening the concept of urban recycle.

Within *Creative Food Cycles*, the investigation of daily connections among people and urban food suppliers throughout the whole supply chain, assumes a particular significance when related to art, creativity and audience development strategies. It is a quest into tangible and intangible food heritage, different in each local culture, social event and conviviality aspect; a clash between the enduring constants of regional cuisines and rapid change in the global food systems; a path of change and mutual exchanges: what appears permanent is forever in a flux or in a recursive cycle as it was addressed by David Hume essay *Of the Standard of Taste* (1757).

Looking at renewed identities as the product of continuing creation and transformations through the direct expressivity of art languages, means considering unconventional ways and criteria for starting a process of selection of good practices, especially at a global reach. The *Food Interactions Catalogue* is an open repository, potentially diachronic and continuously implementable built on the positive and progressive connections between food cultures/food spaces, creative performances/responsive digital technologies and new design prototypes/new materials.



Fig. 02 *Food Interactions Catalogue: projects matrix readiness, typological and performance categories.*  
Source: (IAAC, Institute for Advanced Architecture of Catalonia © Creative Food Cycles, 2019)

Each research unit directly contributed to a specific section of the Catalogue to return the reader with a methodological palimpsest (Fig.02), constituted by: 4 *Readiness categories* (Research, Prototype, Temporary, Permanent) related to stages of development for each project; 9 *Typological categories* (Installation, Building, Module, Market, Kitchen, Table, Material, Product, Process) particularly linked to the scale and outcomes; 3x7 *Performance matrix* to classify the level of performances and the effects produced by the case studies in the surrounding context (socio-cultural and spatial implications).

Furthermore, this collection of practices enhances the multi-actor engagement strategies on which the *Food Interactions Catalogue* is built, according to two dimensions. First, regarding the new roles of professionals related to design disciplines in a variable geometry network of civic initiatives, new forms of entrepreneurship, territorial agencies, cultural operators and active urban society. Second, regarding the dualism of socio-spatial effects produced in place as well as the digital-virtual vibrancy and potential reverberation, evolution and upscaling of projects, given the possibilities offered by the digital milieu: the dimension of online communities in *hyper-medial ecosystems* (e.g., internet of things, just-in-time logistics, E-commerce, user profiling, targeting and matching through big data).

In the era of digital knowledge, we have to reaffirm the necessity of territorial and spatial innovation as an aggregating driver of change able to shape our cities and architectures, through the experimentation of new urban devices and introducing hybrid programmes and new building typologies. Mending the perceptive gap among space of production/distribution/consumption following the different trail of current supply chains, it means to shape hyper-medial ecosystems as part of the universe of natural contexts in which we live. This new form of urban metabolism able to sustain human demands and dynamic recursive transformations, is the context where the creative spark triggers the formulation of new aggregation logics. Starting from typological categories of market, kitchen and table, the projects connect to a larger span of food interactions and foster the role of urban infrastructures related to food.



Fig. 03 *Didactical farming activities on the rooftop garden of Gary Comer Youth Center, Chicago.*  
Source: (Ronan+Schaudt Architects in E. Sommariva © Creating City. Urban Agriculture, 2014)

Is this the case of the *Gary Comer Youth Center* (Fig.03), a complex of primary and secondary education in Chicago designed by Ronan+Schaudt Architects, where children and students are introduced to natural sciences and agronomy studies by educators in open-air laboratories, based on the self-cultivation of the extensive rooftop botanical garden. The strongly geometric organisation of the garden is combined with an educational willingness to design the central patio of the school, in order to develop direct observation skills as well as the care of a shared space, which also supply the school canteen with fresh vegetables.

The discussion on distribution chains, where you can experience more responsible way of food-shopping, follows with the *Supermarket of the Future* (Fig.04) designed by Carlo Ratti Associati and firstly open to the public at EXPO Milan 2015, strengthening regionally networked retail markets with greater ease of access to product information, traceability of production, seasonality and knowledge of biodiversity. Strengthening the place-making effect for the local community, this retail model is developed as a social-innovation hub, where people and families can also experiment a wide range of cultural/recreational activities, such as cooking courses, fitness/nutritional courses, art-laboratories and children labs.



Fig. 04 "Future Food District" at Expo Milan 2015 featuring pioneering ICT solution and real-time data visualization.  
Source: (Carlo Ratti Associati for Coop Italia © Expo Milan 2015)

Another significant aspect of the food interactions we explored, is their performative nature and the networking effect at the district scale, as catalyst of temporary, moving, and permanent settings. In order to implement new urban rituals these practices initiate social participation through different stages and life cycles, by reinterpreting traditional uses, recycling old buildings or reactivating open public spaces.

The project *Nest We Grow* (Fig.05) in Hokkaido-Japan, developed by UC Berkeley in collaboration with Kengo Kuma Architects, epitomises this logic proposing a reinterpretation of traditional rural structures such as the hay/fish-dryers to be augmented as platforms of learning and gathering activities throughout the different seasonal rotation of cultures, according to the life cycle of local production. The installation

provides a new experience related to the time-line of uses, involved actors (e.g., farmers, consumers) and food processing, linked to site, climate/weather and soil conditions in a knowledge-sharing environment. The focus on sustainability is fostered by the architecture of the Nest building, using renewable materials and traditional construction techniques in a modern composition.

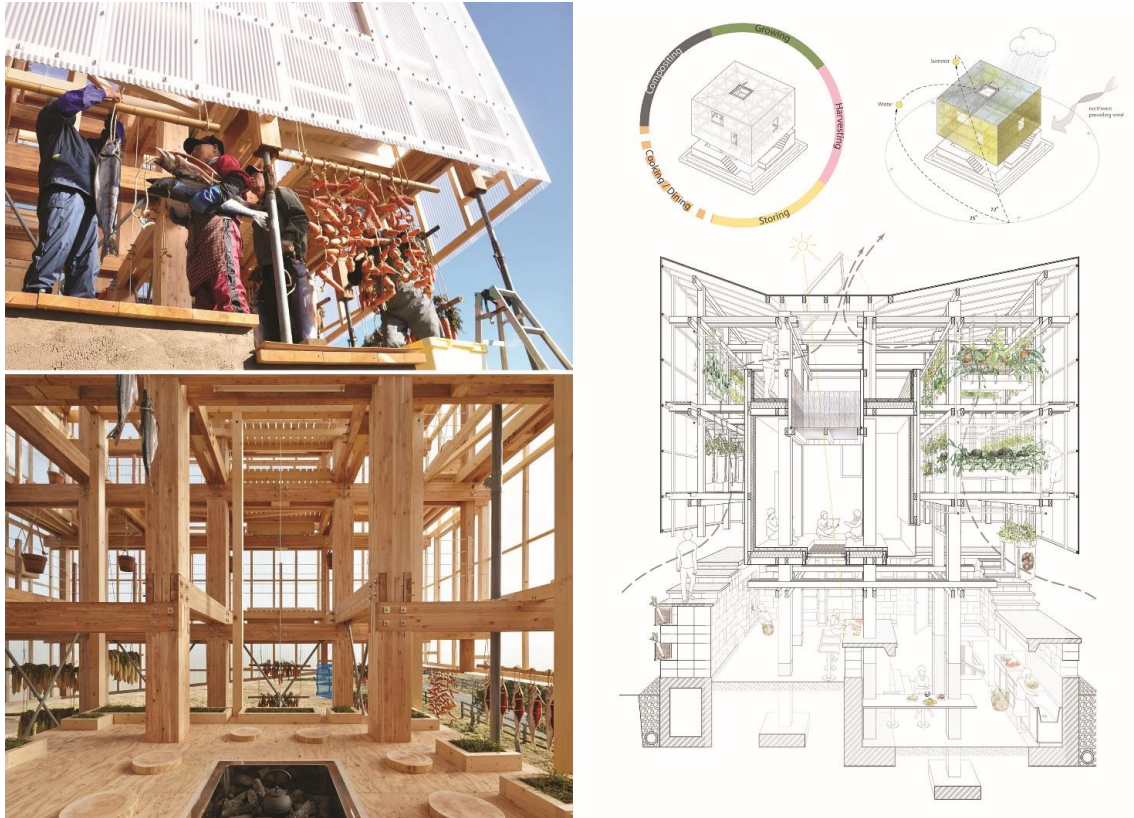


Fig. 05 Nest we Grow, modern reinterpretation of traditional rural hay/fish-dryers in Hokkaido, Japan.  
Source: (Prof. D. Buntrock, H. Chen + T. Saikawa KKAA © UC Berkeley, 2014)

These multi-level networks of social activities and creative approaches empowered through physical representation of shared-community services is the base also of another project of the Catalogue: *Made in Cloister* (Fig.06), curated by Rosa Alba Impronta and Davide de Blasio, a regeneration cultural hub in the historical centre of Naples. On the basis of an old church cloister, the space shows highly programmatic flexibility, including social tables with community kitchen, an open exhibition/music gallery and art-laboratories. Conviviality becomes a philosophy of work, rituals are explored and constituted in the interaction between artists and food, involving the local communities by means of social tables and regional products. With the concept of "nutrition not consumption", manifestations and farmer's markets as part of the cloister cultural project, seek new ways to foster artisanal quality works in order to enhance local circular economy and biodiversity.



Fig. 06 *Santa Caterina cloister as a temporary art-exhibition space and regional food market in Naples, Italy.*  
 Source: (Rosa Alba Impronta + Davide De Blasio © Made in Cloister, 2019)

A final consideration which emerges from reading the *Food Interactions Catalogue* is architecture as mean of support and marketing new entrepreneurial and cultural initiatives, not strictly connected to the scales of the interventions itself, but to the quality of the produced space. Food becomes an aggregator of social interests and the space connected to distribution/consumption needs to include knowledge and abilities typical of art-crafts spirits, both with high-tech or low-tech implementation, but sensitive towards the use of renewable materials, local techniques, and inspiring cultural contexts.

According to these principles the *Yatai Food Cart* (Fig.07), designed by Note Architects is part of a bottom-up architectural movement in Japan to connect the new awareness for regional contexts and sustainability with everyday urban life in Tokyo, in order to foster life quality of micro-urban space and the cultural richness of Japanese temporary/traditional uses. Modularisation and digital design make these moving pop up kitchens and bars fit for self-construction with recycled square timbers and plywood.

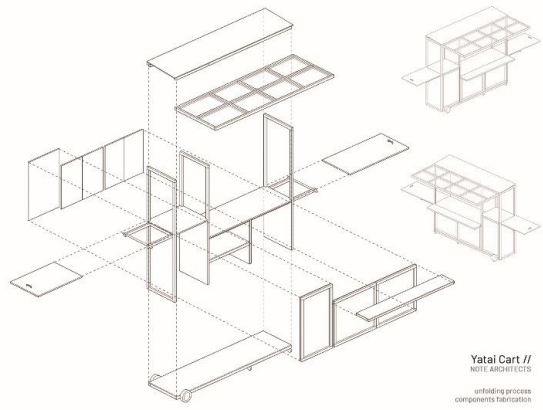


Fig. 07 Bonnie coffee's Yatai Cart movable stand in a renovated alley of Fukuoka, Japan.  
Source: (R. Kamamatsu © Note Architects, 2018)

## Urban-Rural Futures: a creative impulse to regional foodsheds

In recent decades, a corpus of critical literature has sprouted in an attempt to confront spatial changes, inequalities, conflicts and insecurities of globalised food regimes to the advent of the ecological and economic crises. As defining moments of history, it has become apparent that narrowing food to rationales typical of agricultural productiveness, transport/logistical performances and market competitiveness, is misleading in the long-term—by omitting a relevant portion of its significance for the city and the countryside. Questions of territorial coherence, spatial quality and resilience, have raised from angles and aspects of urban and rural studies, of planning sciences, architecture and design to re-codify food through novel, synthezizing perspectives. Hence, trajectories have been drawn towards futures in which materials, cycles and rhythms of urban life integrate with those of agriculture and farmlands, mutually.

The inventions of alternative conceptual means to understand cities have contributed to enlarge scopes and scales of the urban, peri-urban and rural settings in order to investigate their spatial identities as cooperating parts of regional food basins, capable of making a difference against the food crises. In considering these efforts, various streams and focal points can be evinced. In terms of *urban metabolism*, Girardet (2010) has proposed, for instance, to operate broader than regenerative programmes typical of the 1990s, to decisively embrace cycling forms of an "eco-regeneration" that act in favour of re-filling mechanisms for supply territories and ecosystems. In terms of *productive landscapes*, Donadieu (2013: 3-9) has identified a model of "agro-ecological city" as the most suitable to ensure multi-functional setups of sustainable urban agro-productions to which the chart of public and private spaces can locally contribute. In terms of *foodstuffs flows*, the understanding of "foodsheds" introduced by Hedden (1929), and the further applications of it since the 1990s, has offered geographical-economic entry points to map out streams of goods within a particular urban region and for a given city, market and population. Finally, in terms of *food systems*, Vaarst *et al.* (2018) have engaged with agro-ecological principles to address the entirety of a food cycle by examining the overlooked dynamics that span "from table to farm" alongside with those from farming to eating, and the cultural processing.

Moreover, a differentiated movement of civil self-organisation has emerged (Kloppenburger *et al.*, 1996; Marsden *et al.*, 2018; Sonnino, 2019), which enlightens not only what is desirable for local actors. Rather, as Marsden *et al.* (2018: 1306) state, it manifests the "food-associated assemblages" that society deploys in order to actively transform the food systems against a governance frame, they argue, not streamlined with growing demands of stability, ethic and democracy to food.

These and other scholars have marked the necessity of a robust sustaining public commitment to be taken through the urban agendas, with renewed focusses in the planning systems reinforced by an adequate representativeness of civil constellations in the frames of policy and decision-making (Morgan, 2009). However, if a food consciousness has gradually (though slowly) being introduced in these spheres, the socio-cultural impacts of their proposals are yet undefined, especially at the scale of the real city life: innovative spatial devises for urban food systems remain mightily untested in day-to-day routines. A concern consists in clearly translating sustainability goals as well as the undertaking of rural-urban development, biodiversity enhancement, agro-urbanism and circular economy into a system of novel food practices, of commons, languages and urban rituals as specific cultural establishments that multiply the urban domain of cities defined by the experience and what Lefebvre anticipated in the last century as "*gestion collectives*" of space (1970: 174, in Brenner & Elden, 2009).

*Creative Food Cycles* moves substantive steps in this direction, by filling the gaps in-between the necessary abstractions of models/policies and the transience of civic actions/collective existences (Schröder, 2019a, 2019b). Drivers relate to the three major fields of urban resilience, social innovation and digital technology explored through the creative stimulus of architecture and design combined with a cultural lens and artistic

means. Considering this frame, research-by-design and *prototyping* have been thus disclosed with a triple character: a) the educational intents and the intensity of their inventions originate from acts of co-creation, laboratory envisioning and co-built installations; b) by reworking food as an inlying material of the urban realm, they outline inputs, products and protocols to positively orient the individual behaviours in everyday choices enabling sustainable urban futures in a combination of tangible and discursive modes; c) they help with providing instant benefits on urban health and spatial qualities in step with re-adapting food infrastructures by the cultural embodiment of advanced productions, new conviviality and social entrepreneurships, enlarging to territories and societies and including their up-scale as methods of co-design to orient ecological food cycles with regenerative long-term effects.

Design in this triple sense can support the urban community in building the places of its own interaction with food through diverse social empowerments. Besides, as Madanipour (2010: 2) underscores, "for cities to work, there is an undeniable need for public space". Therefore, within *Creative Food Cycles*, prototypes have been conceived to enhance urban spaces through the agency of a *creative urban farming* based on innovative cultivation techniques, bio-technology and digital fabrications (e.g., hydroponics, mycelium, algae, plant roots, pollination); a *pop-up urban furniture* based on performative relations with food, sensitive to cultural heritages, regional semantics, identities and genuine tastes (e.g., movable food hotspots, leftover and cross-cultural kitchens, open food repositories, utensils' social manufacturing, sensorial pavilions); and a *food-waste repurposing* to create eco-sustainable materials, products and processes (e.g., biodegradable tableware, packaging and home furniture by transforming plant fibres, coffee grounds, rice husks, and other discarded matters) (Markoupoulou *et al.*, 2019).

Jointly, they provide a *holistic* view of creative settings in food cycles – from responsive cultivations and multi-use/multi-sense urban stages, to an experimental recycling – capable of accelerating integrated logics, infrastructural changes and practices of (and for) resilience into the ordinary city-life. Hence, catalytic actions might come into being through levels of transversal interactions: in collaborative place-making for active public farming, urban food theatres and exploratory urban living (*places*); in materialisations of regional food-chains (*flows*); in raising food awareness through daily social habits (*players*). In addressing the food cycles holistically and as a *motif* of design, the human and cultural factors are employed as inherent forces to prompt actions and capacity building, to provoke and train for a critical thinking of architects, designers and cultural professionals as well as to appeal larger audiences<sup>5</sup> – crossing barriers of chambered and impermeable food sectors.

Thence, food cycles are put into effect by means of open laboratories, 1:1 testing, traveling exhibitions, debates and spatial formats for urban inclusiveness in the frame of a transnational cooperation and a multi-dimensional transcalar knowledge exchange. In tackling the cycle from food distribution to consumption, we have pursued these scopes by re-interpreting sites that are crucial and integral to everyday life: the *market* (urban-rural supply), the *kitchen* (cultural processing), and the *table* (consumption rituals) as terrains as well as theatres of systematic positive transformations of regional foodsheds and their inhabitants. In the context of a three-day creative laboratory<sup>6</sup>, these sites have been focussed according to five lines of investigation – food culture, conviviality, digitisation, circular economy and sustainability – thus resulting in nine proof-of-concepts of *urban food hotspots* in the city of Hannover (Lower Saxony, Germany): the ideas of a flexible, customisable and multi-purpose architecture giving impulses to novel urban communities based on sharing rituals and local circular economies (Sommariva & Sposito, 2019). A pivotal point has regarded the exploration of temporary, moving and modular solutions to extend awareness on the plurality of food controversies and forging alternatives that integrate the provision of food with marketing and dining, making use of the abilities to manufacture, invent and exchange.

As illustrated in the following section, of the various outcomes, the idea of a movable public table *PorTable* has been further examined from co-design to co-fabrication and installation, and thus placed at the core of a conviviality performance in three interlinked acts: 1) unfolding *PorTable*; 2) recipes for urban futures; finally, 3) a foodshed convivium, a shared dinner, an urban atmosphere.



## PorTable: designing a stage for novel conviviality rituals

The etymology of conviviality, as a term, is traced back to Roman civilisation. The Latin word *convivium* expressed a way of living together; nonetheless, as a habit, Parham (2015: 20) state that "conviviality through food sharing seems to be universal to different human cultures and it is argued that a critical site for such expressions is the table or its spatial equivalent." However, Parham (2015) underlines an inherent dichotomy in its historical undertake, being the table a complex symbol and a zone of communion and bonding in the personal, political, or religious spheres yet to the exclusion and marginalisation of others mighty for reasons of power and status, gender, or beliefs. Moreover, Fisker & Olsen (2008) argue that if a performative character of meals is recognisable since ancient banquets and feasts, it was mainly employed as a vehicle to exhibit class magnificence and wealth. In contemporary urbanism, in architecture and design-oriented disciplines, the convivial and the experiential facets of food have been reframed to spatially encourage novel processes of *living together* while simultaneously contributing to subvert inequitable power-relations, to promote multiculturalism and solidarity exchanges, and to reduce disparities of livelihoods.

*PorTable* installation extends the concept of conviviality by decisively shaping ecological food cycles in everyday city.<sup>7</sup> It combines, indeed, strategic objectives of sustainability for urban food systems with regenerative micro-mechanisms and systematic opportunities of proactive civic interventions in the public realm. The observation behind pertains the necessary transition towards a European low-carbon society and the effects that such fundamental paradigm-shift implies on the existing mobility infrastructures of cities. When shifting to low-impact transport modes to decrease climate warming, which uses can be then foreseen for the increasing amount of unused parking lots? The idea of *PorTable* originates from the capacities of these urban spaces to be transformed into multi-functional *urban food hotspots* (Sommariva & Sposito, 2019) recalling principles and instruments of an arterial "tactical urbanism" (Lydon & Garcia, 2015), furthermore with profound connections with Adaptive dynamics, Ecological qualities and Social sustainability (described in the Introduction to this essay) as lines of research-action to be triggered from resilient foodstuffs streams, sharing rituals to food-waste re-processing. With this intents, *PorTable* consists in a modular and movable unfolding table prototyped through a synergic on-field fabrication, responsive to contextual conditions and sensitive to food initiatives in play in the city of Hannover. At the core of ideation, of crafting and conviviality performances stand young architects and designers, supported by multi-disciplinary inputs from thematic experts, international lecturers, local artists and civic society. In this regard, three acts have been conceived and interlinked for setting the installation.

The first concerns the act of *Unfolding PorTable* (Fig.08). The architecture of *PorTable* is, indeed, sustainable, convivial and performative itself. A series of folding modules, each with a measure of 160 x 65 centimetres, being them linked to the adjacent ones by metal hinges, compose a table to a total length of 22 metres. The minimal space it occupies refers to the measures of a standard parking lot, which correspond to 2.3 x 5 metres. The unfolding process requires collaboration and harmonic sequences of movements to make use of the table. Moreover, urban actors jointly decide the maximum length to be adopted according to the desired activities, the required space and the number of engaged participants. An inventory of herbs and edible plants can be then taken to enrich and aromatise a shared meal, to be harvested directly on a cultivated small garden of 300 x 80 centimetres covering a wheeled-cart. (Fig.09).

The second act consists in preparing *Recipes for Urban Futures*. This phase aims at critically tracing food-flows in a regional foodshed, as well as the diverse geographies therein, the involved dependencies with global and inter-regional scales and the cultural influx undertaken before and after reaching a table of consumption. Local cuisines have been examined and re-valued through a selection of recipes responding to the categories of organic, conventional, or experimental in the German, European, or Global tradition, re-interpreted according to four lines of investigation: 1) *low-impact cuisines* (e.g., daily diets, low-carbon); 2)

recipes of memory (e.g., territorial identities); 3) *innovation food* (e.g., cross-overs, multi-culture); and 4) *waiting cuisine* (e.g., trail cooking, *to go* cuisine).

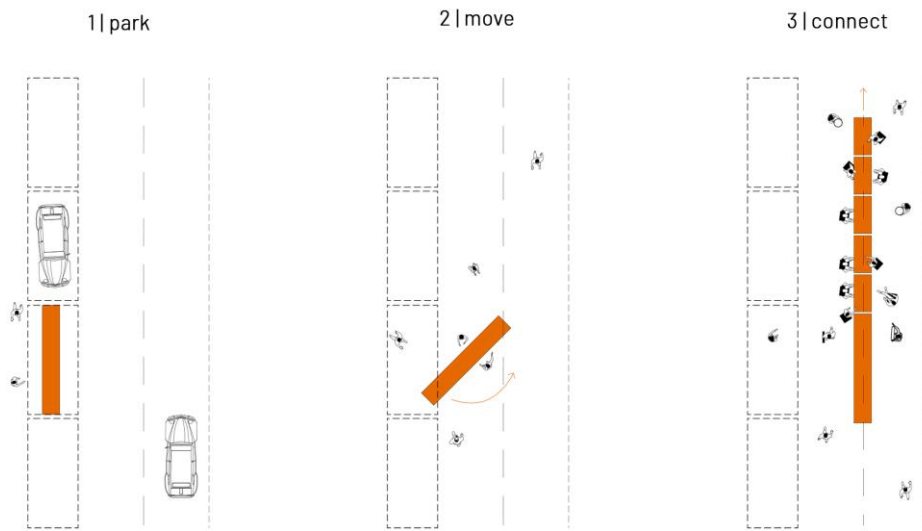
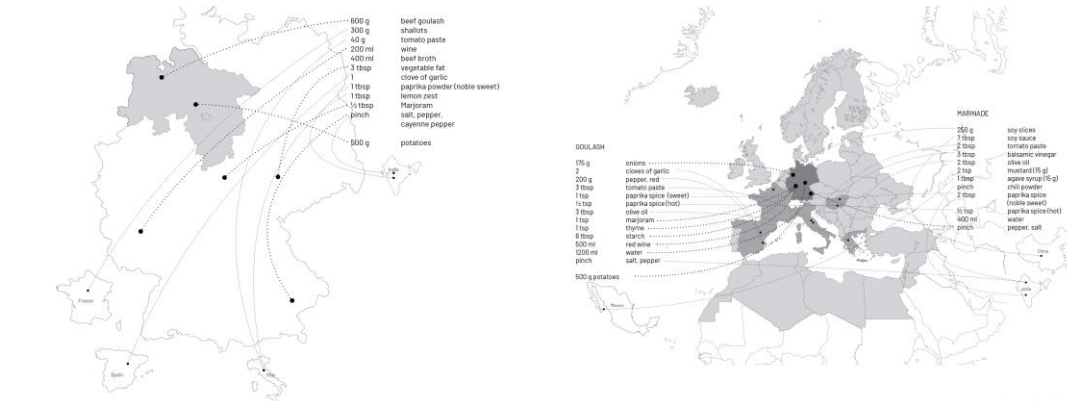


Fig. 08 *Unfolding PorTable*. Proof-of-concept and building process.  
Source: (Leibniz Universität Hannover, Regionales Bauen und Siedlungsplanung © Creative Food Cycles, 2019)

Participants have particularly underlined the necessity to better engage with a longstanding experience of organic food production in Germany (FAO/ITC/CTA, 2001), to increase the use of *Saisonkalender* (calendars of seasons), of local allotment gardens and farmers' markets, as well as to reimagine traditional meals by replacing high-impact ingredients with those that allow for a lower water consumption and carbon emission (e.g., a vegan *goulash*), or those naturally more robust and adaptive to changes. Moreover, territorial evidences tell of ingredients' variations compared to the records of inherited family cookbooks due to cross-cultural influences, or of unvaried food habits despite a changed society (e.g., the simple *abendbrot*) (Fig.09; Fig.10).



**Classic Beef Goulash**  
The ingredients for the classic goulash can be found in Germany with a few exceptions and also more regionally than for the vegan goulash.

**Vegan Goulash**  
For the soy and the marinate are used foods from international regions. Nevertheless, the vegan goulash has a significantly reduced CO<sub>2</sub>-Footprint and lower water consumption.



Fig. 09 Recipes for Urban Futures: Goulash Variations by Jacob Fielers.

Source: (Leibniz Universität Hannover, Regionales Bauen und Siedlungsplanung © Creative Food Cycles, 2019)



### Zigara Börek

Traditional turkish snack

#### Information

course: Snack  
 cuisine: Turkey  
 keywords: Börek  
 prep. time: 10 min  
 cook time: 5 min (in hot oil)  
 total time: 15 min

Servings: 6-8 people  
 Calories: 225 kcal

#### Ingredients

**Filling with feta**  
 200 g feta  
 half bunch of parsley

**Filling with meat**  
 250 g minced meat  
 3 tb oil  
 1 tsp paprika powder  
 half of an onion  
 pinch of salt

#### Preparation

- Once you have your fillings ready, the yufka dough needs to be cut in a triangular shape, if it not already is.
- In the next step you choose one filling start to put it into the yufka as shown. It is important to leave some space to the lower, left and right edge.
- Now you will need to fold in the outer corners. They should not touch each other, because that would mean that you Börek will be pretty small.
- After the outer corners are folded in, you can begin to roll the Börek up. Therefore you have to fold the lower part of the yufka around.
- After continuous rolling the Börek up, it is important that you are doing this step with some pressure on the Börek while rolling it up, so it is firm will be solid and compact in the end. At the end, the tip of the yufka must be moistened with some water.
- The last thing you need to do is to fry all of your Böreks in oil to make them warm and crispy. They might not be perfect on the first try, but the more you make them the better they will become.

Fig. 10 Recipes for Urban Futures: Zigara Börek by Aysil Sahin and Nis Weller.

Source: (Leibniz Universität Hannover, Regionales Bauen und Siedlungsplanung © Creative Food Cycles, 2019)

The third act displays a *Foodshed Convivium*, as a prologue to a shared dinner creating an urban atmosphere. A sharing manifestation has initiated an exchange of recipes and of meals prepared by their use, thus placing *PorTable* at a central stage in a novel *public living room* to which anyone can take a seat by bringing a chair. A continuous table-cloth representing the employed ingredients, the cooking phases and the diagrammatic food-supply areas have provided diners with insights into the regional foodsheds. Thereupon, the *convivium* has originated opportunities to raise awareness on current trends, impacts and change of tastes in food cycles while providing inspiration to a collective re-envisioning of resilient alternatives (Fig.11).

Portable, as both a prototype and a stage for novel conviviality rituals, can be transferred and adapted to different urban contexts by incorporating its use in social daily lives in accordance with local demands and challenges. Given the dimensions of unused parking lots, but potentially suitable to other sites, it can catalyse ecological food cycles with strong place-making effects through fresher forms of spatial engagement driven by culture and creativity.



Fig. 11 *Foodshed convivium*, a sharing dinner, an urban atmosphere.

Source: (Leibniz Universität Hannover, Regionales Bauen und Siedlungsplanung © Creative Food Cycles, 2019)

## Conclusions: reconciling food cycles outcomes

The structural weaknesses of human ecosystems, especially in terms of energy, food and resource supply, are strictly related to the development limits of our society, especially considering how climate change, deforestation, soil contamination, energy transition and recent pandemic urgencies impose us to re-orient our direction of growth. The COVID-19 outbreak significantly poses questions regarding every aspect of our daily lives, presenting new socio-economic, cultural and spatial challenges (e.g., physical distancing,

accessibility to urban services, alternative form of mobility, re-organisation of labour market, teleworking, disconnection of supply-chains) which will affect territories and urban-rural metabolism in unprecedented ways, as well as our capability to foreseen future vision about it.

Understanding the socio-spatial implications of food supply systems after the COVID-19 towards a regional self-sufficient model as a means of urban food security – through the components that shape the interactions between food supply balance given a certain population/area or the outcomes that evaluates how safe, healthy, sustainable and affordable food offer can be – is becoming of particular interest not only in the Global South, but increasingly in the Global North. (Dubbeling *et al.*, 2009; Van Veenhuizen *et al.*, 2020). Concomitant key-factors which puts high pressure on the reliability of food systems are:

- the proliferation of all-you-can eat, fast-food and diasporic cuisines compared to regional or inter-cultural *food heritage*, indicative of the intensive commodification and standardization of food;
- the limitation of agricultural inputs/labour often supplied by temporary/seasonal migrants due to restrictions on human mobility and physical distancing, exacerbating the social inequalities of global urbanisation trends, including an increased demand on emergency food provisions (*food banks*);
- the closure of markets and congestion in food logistics and delivery, especially in cities where parasitic forms of collective consumption (Merrifield, 2014) are producing unbalanced coverage of food suppliers (*food deserts*) or public health inequalities known as *obesogenic environments* (Townshend & Lake, 2017).

On the other hand, this crisis also recalls us the urgency to cope with global stagnation and offers some new insights on rapid response needed on *Food Cycles* and urban metabolisms, followed by actions to ensure increased resilience to the impact of pandemics and other shocks in the longer term. Although *agro-ecology* and *circular economy* are sound concepts, on both the level of strategic planning policies and of academic/scientific debates, in order to show the practical effects in places, it will be necessary to build up new levels of societal awareness. For instance, enhancing the interaction between urban-rural cooperation programmes and metropolitan areas or defining how farming systems analysis can foster Zero-kilometres food supply chains, are at different level strategies to understand how much our daily consume habits widely determine the markets' level of distribution to consumption, food preservation, waste disposal, even the interior design of our homes.

This calls for projects and actions that requires to modify consumers' behaviour and will impact on the quality level of our living conditions in urban areas. In this regards, new fields of possibilities and experimentations are already opened, and it only needs to be followed with a holistic vision and multi-disciplinary approach to overcome issues and challenges which are strictly related to the food provision.

By quoting Bruce Mau (2004), if we want to persuade people that current paradigms need to be changed, we need co-design of actions, strong communicative impact, seduction, and not sacrifice. "There is only one way to make this happen: use design to make the things we love more intelligent. To embrace the revolution of possibility, make sustainable more compelling, more exciting and delightful than the destructive, short-term ways. Compete with beauty and make smart thing sexy". If we talk about food this is truer than ever.

## Notes

1. Pierre George (Paris, 1909 - Châtenay-Malabry, 2006) was one of the most important French geographers of the 20th century. From his intense research activity emerges an idea of geography as an eminently social science, heterogeneous in the methods but unitary in the scope, founded on the study of humanity as an agent of production and consumption of urban space. See also: *Précis de Géographie Urbaine* (1961); *Géographie de la population* (1965); *L'environnement* (1970) *Société en mutation* (1980).
2. Schumpeter's theory of creative disruptiveness, as a process of dismissal and mutation that revolutionises the economic structure from within, inspired the works of social geographers such as Harvey and Castells for their systemic interpretation of modern capitalism, in relation to (urban) space of production and value chain creation in the rise of network society and digital technologies. See also: *The Urbanization of Capital* (Harvey, 1985); *The Information Age trilogy* (Castells, 1996-98); *The Enigma of Capital and the Crises of Capitalism* (Harvey, 2010).
3. Barry Commoner (New York, 1917 - 2012) was among the world's best-known ecologists, biology professor and prominent leader of the environmental movement from late '60s, linking his public campaigns on environmental decay to a broader vision for socio-economic rights, territorial justice, right to the city, public health and fair labour market. See also: *The Closing Circle* (1971); *The Politics of Energy* (1979).
4. The Ulm School of Design (*Hochschule für Gestaltung Ulm*) has been one of the most culturally vibrant and innovative design school between 1950s and 1960s in Germany. Founded in 1953 after Max Bill and Otl Aicher's experience at the *Bauhaus*, the school promoted a multi-disciplinary approach to the design by integrating art, craft and technology, involving prominent educators such as Josef Albers, Johannes Itten, Walter Gropius, Hans Gugelot and Tomas Maldonado. In particular was Maldonado who saw the design process as a holistic method embodying both scientific-based and intuitive-based thinking, rather than focus on aesthetic parameters. See: <https://hfg-archiv.museumulm.de/en/>
5. In considering innovative approaches of Audience Development (AD), the study commissioned by the Directorate-General for Education, Youth, Sport and Culture of the European Commission identifies the categories of "Audience by Habit", "Audience by Choice", and "Audience by Surprise" aimed at actively integrating different participants throughout cultural manifestations (Bollo *et al.*, 2017:11). The study has been developed by Fondazione Fitzcarraldo, Culture Action Europe, ECCOM, and Intercult.
6. The creative *Food cycles Pop-up* workshop has taken place on 23-24-25 May 2019 at the Faculty of Architecture and Landscape Sciences of the Leibniz University Hannover (Germany) involving 65 participants in the event activities. Among these, 20 young contributors have been selected to formulate proof-of-concepts for an urban food hotspot.
7. The installation *PorTable* has taken place on 15-16-17 October 2019 at the Faculty of Architecture and Landscape Sciences of the Leibniz University Hannover (Germany). *PorTable* is designed by Anna Pape and Josephine Arfsten, developed together with Julia Theis and Michel Grändorf, and prototyped by Marsha Dinse, Jacob Fielers, Kim Flottmann, Kerstin Glöckner, Regina Hoffmann, Chloe Hönisch-Gravel, Neele Lemke, Gia Hana Lotzer, Christina Mauersberg, Mara Piel, Aysil Sahin, Lenya Schneehage, Ann Christin Timke, Sarah Trubjansky, Marie Waldminghaus and Nis Weller. Special thanks to the Modelling and Digital Lab of the Faculty of Architecture and Landscape, Hartmut Brückner and Aydin Keshtow for the 3D CNC milling machine support and the prototyping, finally to Metallbau Dühlmeier for the artistic metal details.

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