A2. Dinámicas Urbanas y Territoriales: Metabolismo, Desigualdades Sociales, Resiliencia y Regeneración

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VOLUMEN 3
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Med.Net AgroCities: proactive role in the Mediterranean system

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Abstract:

During the last decades, the evolution of the urban-territorial city produced a combination of issues about the City-Nature and City-Nature-Landscape relation, such as the change of perspective between the urban, physical and social dimension and the agricultural-landscape system and agricultural-environmental system in the context within which the city redefines and develops itself. This change of perspective stabilized and manifested itself with the increasing awareness that agricultural and forestry spaces must develop a plural, structural, articulate and functional role; a role within which various forms of knowledge and regulations, various norms and sections of public policies are combined.
To overcoming the opposition city-country, within which the suburban areas play a vital role - producing and creating function of complex value - a new model of integrated approach towards territorial policies and the geo-urban project is needed; a model able to adequately represents the different applications within the territory, specially in the middle or proto-metropolitan cities on the Mediterranean (Med-Net AgroCities) where the combination Heritage-Tourism-Agriculture-Environment is absolutely crucial but not always well developed in the sense of integrated systems or holistic gazes. This kind of approach focus on a matter that, from the planning point of view appears unavoidable and that refers to the need of integration between territorial and political planning and rural development plans that combine primary/tertiary activities and agricultural production. In this framework, the contribution wants to explore and to analyse the Med-Net AgroCities, with a transdisciplinary, transversal and integrated approach, presenting the theme through the theoretical and active experiences of the GicLab team.

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The Mediterranean framework

The evolution of the new urban-territorial city and of our own settlements has produced, in the last decades in Europe, a set of questions relating to traditional *City-Landscape, Landscape-Nature, Nature-City* relationships, a change of perspective between the urban, physical, cultural and social dimension and, in the broadest sense, of the environmental system in general - and agro-landscape in particular.
A context within which the city places itself and develops, is recycled and re-naturalized. The growth of the informal/informational city corresponds, in an almost paradoxical way, to the production of settlement landscapes and the forecast of correcting landscapes, in which the role of agricultural and forest spaces is interpreted as a fundamental and founding element of a new sustainable form of city "*Dis-dense: discontinuously dense*" (Gausa, Guallart, Muller, Prat, 2003).
The irrational consumption of soil cancels the identity value of a place and gives life to hybrid and indefinite spaces of city-countryside, full of unexpressed potential, but empty of material contents that need to be reinvented and reorganized to become a resource of our territory and not a problem. Consistent parts of the reflection of urban disciplines and territorial sciences were dedicated to the reinterpretation, in the context of planning and territorial governance strategies, of the role of open spaces (free spaces, semi-natural spaces, in-between spaces), directly linked to agricultural production (active and/or in decline), which become generative elements for the definition of new paradigms for the construction of the urban form and its constitutive elements (Ricci, 2012).
Various national conferences (2014-2020 Urban and Rural Development Plan, Agricultural production and new landscapes, 2007) and international (European Environment, 2010), scientific societies (CRA, EEA, ENEA), university research, local authorities, but also the becoming aware of the citizen, they focused their attention on the importance of the agricultural and rural territory - commonly considered as a free space waiting to be filled - intended to accommodate the large infrastructures that aggregate urban nuclei in a sort of metropolitan constellation.
This change of perspective is consolidated and expressed in the growing awareness of the need for agricultural and forest landscapes to play a structural and articulatory role; role with which different competences and disciplines meet, as well as various forms and sectors of public policies.

To understand the size of this sector, it is enough to know that agriculture worldwide occupies about 35% of the land area and a further 35% the forest area. In the European Union, areas classified as rural represent more than 90% of the territory, but actually about 75% of the soil is engaged in agricultural and forestry activities (De Castro, 2010).
More specifically, protected agriculture, for example, covers about 1 million hectares worldwide, of which almost half (400 thousand ha) are concentrated in the Mediterranean basin (Campiotti, et al. 2009) between glass greenhouses, greenhouses in plastic and tunnels, mainly in the Netherlands (70%), Spain (60%), Italy (50%), France (46%) and Great Britain (15%) (Huber, 2014).
The transfer of an oppositional reading between city and countryside to an integrated and intertwined reading, in which the peri-urban territory takes on a vital and active role, with a productive and creative function of complex value, poses the need for a new model of holistic approach to territorial policies and the geo-urban project, able to adequately represent the various questions that persist in the area, its planning and policies derived from inter-urban and neo-rural development through systems called to combine: primary activity and activity tertiary, agricultural production and technological production, environmental sensitivity and tourist attraction, private space and public space, etc.
The role of agriculture in this interpretation framework therefore proves to be fundamental, being one of the uses of the soil - linked to the concept of "landscape" - fundamental for the efficiency of a new urban-territorial dynamic, multi-plot and multi-matrix, integrated and intertwined especially in the Mediterranean agro-cities network *MedCoast AgroCities* (Tucci, 2020) where the combination Heritage-Tourism-Agriculture-Environment is absolutely crucial but not always well developed in the sense of integrated systems.
Future objectives must clearly identify the importance of the relationship existing between the current territories, focusing attention on the dynamics of future development and on the creation of new connections between city and landscape, countryside and citizen. In the case of the Spanish peninsula, agriculture represents 25 million hectares (35% of the geographical area) but occupies only 5% of the country's active population. In the case of the Metropolitan Area of Barcelona, we are talking about 242,000 hectares, 32% of the geographical area (and around 40% of the open spaces of the city-region), while in Italy, however, agriculture occupies 55% to 65% of the territory[7].

[7] Data from «*Hechos y Cifras de la Agricultura, la Pesca y la Alimentación en España*». 2006. Ministerio de Agricultura, Pesca

The importance of understanding agricultural spaces not only as productive landscapes but as multi-productive landscapes, triggers a new urban-rural vision of the contemporary (natural and artificial) city-mosaic and of the possible multifunctional and multi-programmatic condition of non-agricultural spaces more conceived solely as "primary" spaces but as green infrastructures, ecological corridors, natural matrices, etc., within a broader concept of the landscape intended as an "*eco-systems system*" (Buonanno, 2014).

This sector also compares and relates today within an international context capable of competing strongly both in the energy-environmental and agro-food fields. The requests for consumer food safety guarantees and the need to reduce environmental impacts must align with the new objectives that agriculture must set in order to become competitive at a global level, aiming to promote environmental sustainability, energy efficiency and the enhancement of eco-compatible production processes.
The agricultural-food component is therefore connected to social well-being, economic development, the environmental and resilient quality of the city and to a (new) technological and operational dimension, that is, to a consideration of agricultural spaces as possible *smart-landscapes* or "*advanced landscapes*" (Carrabba, Di Giovanni, Iannetta, Padovani, 2013).
The transmission of the "Smart" concept - and better yet, of the *Intelligent City* concept - alludes to a set of integrated systems and subsystems (safety, resilience, water, health, infrastructure, economy, environment, power, etc.), called to guide and manage, in a coordinated way, the development and sustainable growth of the new multi and inter-urban scenarios. In this sense, urban, peri-urban and inter-urban agriculture can contribute to ensuring not only healthy and efficient nutrition (starting from the optimization of environmental and economic parameters), but also dynamics related to energy and waste cycles, of water and matter, as well as with environmental resilience, playful-social interaction and patrimonial identity, as an integral part of a new multilevel way of considering the city. City intended as part of a diversified strategy, oriented to the creation of not only agricultural, but also recreational, restaurant and agro-tourism development and to a new projection of pre-existing environmental and socio-cultural values (Sommariva, 2015).
The significant extent of these processes therefore makes it necessary to focus on the issues that make them up (logistics, supply chains, technologies, management etc.) so that the agricultural sector - in particular the European one - is able to align itself competitively with the rest of the world towards an ever increasing demand for agri-food and floral products, pursuing models of sustainable development that do not affect the environmental balance.

Understanding the implications related to a new active landscape and to the social, economic, technological and cultural changes taking place today are fundamental to foster a more proactive and strategic-sustainable planning (bold sustainability) of urban-rural areas in our coastal territories: a planning model that must reflect the threefold dimension of the "natural-artificial", "built-free" and "environmental-anthropic" dualisms.

AgroCities Research

Research on *AgroCities (*Gausa, Canessa, 2018) analyzed the essential steps for understanding new dynamic development strategies in coastal, urban and agricultural territories, through three sequences:
1. Recognize the interaction of the different agro-urban areas within the current global scenarios and their different strategic possibilities, of urban, cultural, economic, social and landscape development.
2. Build an updated state of the art on this context in order to make a critical and proactive analysis of the identified cases.
3. Define possible quality scenarios and implementation parameters at the various scales, including that of communication for the dissemination and enhancement of the territories. The research aimed to establish a cognitive foundation for the interpretation of the entire territorial-landscape framework, for the development of strategic guidelines for balance and the definition of the various actions associated with new integrated policies both eco-systemic and inter-territorial.

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y Alimentación. NIPO: 251-06-115-0.
Website: https://www.mapa.gob.es/es/desarrollo-rural/temas/programas-ue/00_tcm30-84598.pdf

This kind of approach focus on a matter that, from the planning point of view appears unavoidable and that refers to the need of integration between territorial and political planning and rural development plans that combine primary/tertiary activities and agricultural production.

Two study cases represent the heart of the research:

1. Albenga (Liguria, IT), Agricultural Plan: the analisys of Albenga's agricultural plain case represents a chance to master the landscape; geographical and economic datas are required in order to obtain a territorial system focused around the agricultural production. Albenga's territory offers an extraordinary set of environmental resources that made its economic spread possible developing the landscaping resources and exploring a new ludic-convivial definition.

2. Llobregat (Barcelona, SP), Agricultural Park: the large agricultural area around the Llobregat delta offers another aspect connected to the multidimensional, morphological and environmental relations between city and agricultural/urban territory that, according to a variety of conditions and procedures, influences the urban aspect.
The agricultural community policy, which led to the making of the Agricultural Park, is strongly oriented towards the searching of a balance between agricultural productions and the preservation of the environmental and cultural aspects of the rural landscape.

(Fig.01)

BCN-PABLL+ The Baix Llobregat Agricultural Park: a ludic multi-park in a local and global scale

The Baix Lobregat agricultural park (PABLL) is part of a network of natural parks within the metropolitan area of Barcelona that draws a chain of protected green areas connected together - behind the traditional city-center and in the heart of the new multi-urban agglomeration - and parallel to the sea.
The study area is located at west of municipal Barcelona separated by the river which gives the name and carves the mountain (The Garraf Massif) and the beaches (Gavà/Castelldefels), which define the natural form and limits of the park. The area is characterized by the presence of major infrastructures such as the port, the airport and the NE/SO highways which attract a large flow
of real and potential users. A ramified network of roads and railway axes connects these points with the main cities of Catalonia and Spain, marking and characterizing the territory. The confines of the agricultural park are visually defined by the different urban centers that have traditionally lived relying on the park's productions.
At the moment each one of these centers conforms a city council that manages and directs the exploitation of its fields. In fact, the definition of the park itself fits with the historical agrarian vocation of the delta lands; a traditional production, with a local distribution, whose management, led by a specialized consortium, as well as the quality of the cultivated products, is proposed as a model that other agrarian areas with similar features can follow. This territory has, beyond its homogeneous primary function, the potential necessary to be used in a different and varied way and also able to attract a wide range of users, always maintaining its substantially agrarian vocation and defending its landscape and environmental values. In fact, the loss of economic strength of agriculture in favor of other productive sources causes the park to suffer the urban expansion pressure combined with the industry and the large infrastructures arranged around the agricultural area that are invading it. This has caused the loss of some historical and cultural points of interest that the area had managed to preserve since its origin, as well as the abandonment and progressive degradation of certain parts of the park with a consequent loss of identity and quality of the place. The park appears today as an inter-urban vacuum and a "reserve" of cultivated land - an artificial nature - rather than as a large attractive-active and relational lung. Preserving the Llobregat Park as a primarily agricultural area, therefore, seems to invite to reinforce its own primary definition of the landscape by completing it and combining it with new - traditional and innovative - strategies, uses and activities that, without harming its features, allow to enrich it and to project it economically, socially and culturally.

(Fig.02)

The main objectives of the "BCN-PABLL +" project are:

1. To recognize the current context of the Baix Llobregat Agricultural Park and its various strategic, urban, cultural, economic, social and landscape repercussions from the point of view of its great spatial and environmental value and its qualitative reinforcement through economic, programmatic and social parameters associated to its own current urban-tourist- productive dynamics.
2. To quantify this context statistically and to create a critical and propositive diagnosis together with processes, their trends and their evolutionary potentials.
3. To define possible qualitative scenarios and application criteria on different scales.
4. To suggest models, actions and operational strategies.
5. To create the necessary conditions to elaborate one or several types of diffusion, exhibition and communication, not necessarily specialized.
6. To create a discussion, an opinion and a proposal on a citizen scale.

The strategy promoted for a reactive approach to the park itself will tend to move on two fronts: an exogenous one, characterized by relational, economic, infrastructural, environmental, socio-cultural etc. aspects and an endogenous one, directly linked to the structural, spatial and territorial functions of the landscape. According to a multiple and transversal reading of Barcelona's urban-territorial development - and of the various infrastructures, eco-structures and urban structures - that characterize it (regarding those that affect and define the agricultural park itself will be proposed a new reading of this scenario through a series of sequences and diverse spatial and landscape structures) and of new functions, activities and associated programs - capable of relating the internal use of the park and its external recognition, its internal identity and its outward projection.
Nowadays the park's economy is based on a local distribution network made of local markets and small restaurants that offer the products of the park, recognized thanks to the quality of the consortium that manages it.

1. The first objective will be to strengthen and intensify this network, creating new points of exchange and applying new marketing and advertising strategies. This expansion can not work without a structural renewal of its own territory or its new "multiple" vocation.
2. The second of the proposed fronts - from which is originated a new diversified function/programming, identified with the concept of Multipark - will help to individualize the multiple possibilities of use within the area, in order to articulate a large unique, but plural, space: a large agricultural park made up of others characterized and individualized "sub-parks". This great "park of parks" will use its own "sub-division" of the territory, derived from the infrastructures and from other geographic and environmental conditions, to articulate a new landscape variety, for mainly agricultural use but with different - ludic, recreational, gastronomic, experimental - integrated functions.

To create, also, a direct relationship between the park and its surrounding areas will be necessary the combination of redefined boundaries and restructured borders, permeable at certain points, open to favor infiltration, integration and articulation systems currently contiguous, but diverse and differentiated from each other. Emphasized, then, the importance of the intertwined condition of the landscape itself as a "network of networks" capable of supporting the spatial definition - built, cultivated, conditioned, etc. - of each point. This intertwinement, defined by roads or streams, will form a basic structural and environmental matrix, able to ensure a different and specific development for each sector, to each unit a particular use - conformed to the park - without deforming the "cultivated" conformation of the landscape or the natural- artificial vocation of its territory.

Beyond the landscape-structural articulation of the park itself, a set of possible sustainable development systems have been analyzed in parallel, associated with the ability to redirect - "networked" and "in cycle" - certain productive and environmental processes present, or particularly significant, within the park.
Seven possible "eco-productive scenarios" - applicable to the park and oriented towards the reactivation of its own development - emerge and allow to calibrate the adaptability of the current processes optimizing them, according to networked technological parameters (information systems and data optimization, telematic applications) and environmental factors (energy, water, substance and air quality), with the aim of obtaining closed cycle systems able to implement and improve (inter-activate) the features of the park itself.

The specific processes of Water Treatment, Rehabilitation and Renaturalization of Lands, Organic Recycling and Production, First and Second Level of Agricultural Production, Coffee Consumption, Farms

and Rural Heritage and Informational Apps in general, define the 7 environmental and productive systems. In each case, the process is expressed through the formulation of a specific cycle designed not only to feed its system but to also improve and optimize it, mobilizing its informational and territorial structures, promoting possible real and digital cartographies within the interchange processes (material and immaterial) and structures (physical and virtual) of the park itself.

(Fig.03)

At last, four strategic scenarios have been identified in order to combine - and inter-activate - the general structure of the park, the reference physical sub-structures related to it (the four parks combined) and the seven network and cycle production systems, "switching on" (lighting up, strengthening) those support and connection structures linked to it with an hypothetical 4x4 meta-system. These scenarios, therefore, refer to four specific areas, such as: - Tourism and Leisure: the formulation of actions related to, generally outdoors, ludic and recreational activities connected to the proximity of the beach, the pinewoods and the agro- perimeter strips that connect the tourist-residential zones to the coastal littoral and its medio-environmental spaces. - Farms and Rural Eco-tourism: it is proposed the strengthening of a tourist-rural network able to combine, within the existing rural heritage made of old farms and agricultural buildings, the agricultural activity with new, slow and local catering and hospitality activities. - Energy and Agro-Environmental Innovation: this is a focal center of the new park: the ability to experience new forms of (agricultural and manufactured) energy generation and production associated to the optimization of crops, alternative clean systems, recycling and reuse of its own agricultural waste (2nd Level Agro-Production).
Near the industrial strip and at the intersection with the central transversal strip it is hypothesized the location of a possible research area for agriculture, connected with the near logistic activity and the creation of a possible Green Fab-Lab. - Residence and Productive Mixticity: a new type of mixed residential development is proposed, integrated with the productive and industrial activity in the background. Paying attention to some examples of sustainable urban decentralization it is possible to formulate a mosaic of integrated elements (residence, production, water, green filter, communal gardens, social spaces) within new "residential landscapes".
As previously stated, the will to combine the traditional functional/formal equation - "territory> landscape/design/use/ programming" identified, here, with the concept of Multipark or Park of Parks - with a new functional/informational approach - "territory> network/sensorization/cycle/interaction" identified, here, with the concept of Network and Cycle System - invites to explore the multiple combinatorial possibilities of a large agricultural multi-park where virtual connections/informations and support/structural contributions simultaneously blend in syntony and synergy at the same time.

(Fig.04)

GLASSCITY, Albenga's agricultural lowland: from the glasscity to the greencity

Located in the middle of the Riviera di Ponente, Albenga is the heart of the Ingaunum lowland (from the latin Albìngaunum, the capital city + genitive plural in –um). This vast territory is an interesting model due to its variety of patterns.
Close to the sea, Albenga has a characteristic old town devel- oped during the Roman Empire and it's still the heart of the city. In addition to this, comes to life on the coast the touristic- seaside activity that allows the town to triple the population and to increase all the earnings of all the services related to it during summer. However, what defines its image is the green.
A kind of green mostly agricultural since the intensive culture of flowers and greens represents the economic key of the town. Wooded areas and rural parks are a large portion current in and around Albenga. On the one hand the agricultural and floricul- tural trade is developing for over half a century, on the other, over the last decade, in the suburbs, the industrial trade has settled significantly, home to some huge national brands such as Piaggio Aero, Noberasco, Fruttital, Fitimex, Ferrari and so on.
From the seaside to the suburbs, a small town of just 23 km2 is divided into layers disconnected from each other. The only common element is Centa River which starts from the highest point of the town, through the floodplain and flows on the coast in front of the Gallinara Island. How to connect all these elements and make them work together within a common project?

Because of the huge presence of greenhouses, its appearance turns out to be a flowers and glass pattern, structures and crops with few occupied spaces and many open spaces included within a green context aimed only to the production. Despite its agricultural connotation, Albenga is a town divided into different areas:
a residential area, mostly located in the old town, a new and industrial area, in the suburbs, a touristic seaside area, which makes the most of the prosperous location of the Ligurian Riviera, one agricultural and productive area which stands between the old and the new preventing the town to develop making more and more distant the commercial suburbs.
GlassCity research aims to integrate these different areas in a single system able to exploit the qualities of the agricultural land in a touristic-productive process. The purpose of this project is to apply to the whole town a self-feeding strategy that allows Albenga to self-sustaining, both energetic and economic level, producing, recycling, reusing to produce anew, becoming an example of GreenCity, a sustainable town.

(Fig.05)

Historically the town of Albenga settled close to the coast, as a port city, and has developed in time thanks to the increase of the floriculture and agriculture. This kind of activity needed wide open spaces that were hard to find on the coast, therefore, with the increase of farmers has begun to occupy the suburbs and people started to settle in the lowland behind the urban old town. This defined the layout of the city drawing a vast agricul- tural area on the two sides of the river and it has been named Piana d'Albenga, that became famous for the culture of DOC products (such as Albenga artichokes and purple asparagus) exported in the whole Europe. With the increase of the industrial sector over the last decades was necessary to search for wide spaces again for the development of industrial and commercial infrastructures.
They occupied the suburbs of the plain increasingly moving from the original center (close to the sea) building proper industrial and commercial areas, however, too far from both center and coast and completely isolated from the rest of the city. The structure of this territory appears thus very interesting but at the same time hard to manage because of the variety of spaces and the distances between them. The coast doesn't fulfill with its services all the tourist's requests, the old town is invaded during summer and desolated during winter, the enormous agri- cultural sector isn't connected to the rest of the city and doesn't involves tourists whatsoever. The new shopping centers, at last, are located in the suburb, losing, in this way, the possibility to make the most of the flows of tourism that unlikely move from the urban center or the seaside.

Conformation of the territory, as previously described, is mainly characterized by three different areas: residential area (the medieval old town), agricultural area (Albenga's plain) and an industrial-commercial area in the suburbs. The project concept aims to reconnect these areas making them interact with each other by creating a river park along the Centa river, green spine that crosses the whole plain mending the town from the coast to the hinterland.
About transports, existing roads and highways lines will be integrated into a set of new secondary infrastructures, recycling, for example, the railway line and converting it into a GreenLine crossed by a light tramway that flows through the coast to the Villanova Airport flanked by a cycle path supported by bikesharing areas to promote internal connections through the use of non-polluting transports to allow the users to live the park and not only cross it.

The making of a big Core Park has as purpose to renew the image of Albenga, from mainly agricultural town to Green City where is possible to experience new things living close to cultivated fields or indulge to spend the free time using new services located along the park always sourrounded by green areas. The new facilities are made to front the citiziens needs that live the city daily and tourists that can find new motivations to experience green-holidays outside the schemes facing the reality close to environmental problems that wants to be intended as model for all the similar situations.
Considering the fact that countries and cities connected to an agricultural economy represent the 94% of the total regional production and the 20% of the national one. Albenga doesn't represent an isolated study case, but one of the many present in our territory and that's why it deserves the development of an analytics strategy that can overcome problems related to the production and its impact on the territory.

(Fig.06)

The main approach is the Ecodistrics Recycle Strategy: ecodistricts system is based on a politic of production and recycling of waste materials converting them into an energetic process that establish an economic gain. This cyclic system consists in four main phases:

1. Agricultural Production: Albenga's plain extends for about 45km² and has over a thousand of agricultural and floricultural companies. For example, the companies in the Riviera di Ponente rapresent the 94% of the regional production and the 20% of the national one. Every year, in fact, in the Albenga's plain are cultivated over 120 million plants between aromatic plants (60 million), flowering plants (30 million) and ornamental plants (30 million). About 100 million of those are exported annually, especially in the North Europe that since the 30s started a market, today unfortunately it's steadly decreasing. Agricultural production sector joins the floricultural sector; the first one is based mostly on the main products from Albenga, known and appreciated all over the world thanks to DOP, DOC, IGT certifications like purple asparagus, chicory, zucchini "trombetta", tomatoes "cuore di bue", Albenga artichokes and Extra Virgin Olive Oil.

2. Recycling of waste materials: many floricultural activities consequently produce a huge quantity of garbage, estimated at 6000 kg for each farm. These ones are divided mainly in four categories: inert materials (metals and glass coming mainly from structures that form greenhouses), inorganic waste (plastic waste, packaging, vessels, sheets and covers), Biodegradable waste (paper, cardboard and agricultural waste "green waste") and toxic waste (pesticides, waste oils, chemicals...).
Among these, agricultural waste rapresent about the 84% of the total, to manage these green waste, in every ecodistrict are located equipped areas for storage processes of green waste, within which are prepared Open Systems aimed at the transformation, through natural fermentation processes, of agricultural waste into fertilizer compost. Encouraging, in this way, not only the disposal but also the complete reuse in material form.

3. Energy Production Strategy: the huge quantity of organic waste made by companies requires a quick and efficient management since these can't be accumulated for more than 30 kg and transported for no more than 10 km. The use of these wastes is however double, in part it is recycled in the form of compost, in part, instead, these biomasses are used in combustion processes inside structures with boilers, turbines and transformers for the electric energy production.
Biomass are one of the many energetic sources of Albenga's plain. In fact, environmental features of the territory encourage a mild and sunny climate for almost the whole year round and the proximity to the sea guarantees a constant wind flow which can be exploited through Wind-Farm with the of photovoltaic systems combined to maximize the electric energy production from clean and renewable sources.

4. Economic Increase System: to close this productive cycle is necessary an economic strategy for a monetary gain. To completely integrate the ecodistricts system to the park system passable green spines are created to connect from the park through the districts. In the proximity of those arise new structures, made by reusing the greenhouses and unused buildings and reinventing them into Microfarm and Greenhouses available to tourists that want to live a new holiday experience surrounded by green. Summing the profit factors (agricultural production and waste process, photovoltaic and eolic systems, greenhouses and microfarms) the economic balance of the ecodistrict can achieve a significant increase of the production. Part of the achieved earnings will be used for the maintenance works of the core park and part of them will be used to improve systems and agricultural structures of the farms through a self-feeding process.

Self-Feeding Strategy is the self-production strategy that, into the Green City model explained, every agricultural company should adopt. It consists in three resource elements (Water, Sun and Wind) and two waste elements (Trash and Water Pollution). The main issues related to production and management of an agricultural structure, for example heating costs of greenhouses, the large consume of irrigation water, the big production of green waste and waste water pollution are analyzed. An agricultural company in Liguria uses an amount of resources approximately 17 times its own extension area, integrating agricultural structures (greenhouses, tunnels...) and energy systems (photovoltaic, eolic and hydroelectric). Every company would produce the 80 - 90% of its own energy need, more than enough to satisfy its consumers, minimizing the environmental impact degraded by the excessive consumption of fossil fuels.
To every issue is associated a specific solution strategy to become completely self-sufficient thanks to energy and money production. All these systems, moreover, can be readapted depending on the type of greenhouse, even though in Liguria High-Tech GreenHouses structures are more widespread.

Fig. 01 Aeroview of Albenga coast (left) and El Prat de Llobregat (right).
Fuente: photos from tripinview.com, Geotag Aeroview 2014, collage by Giorgia Tucci

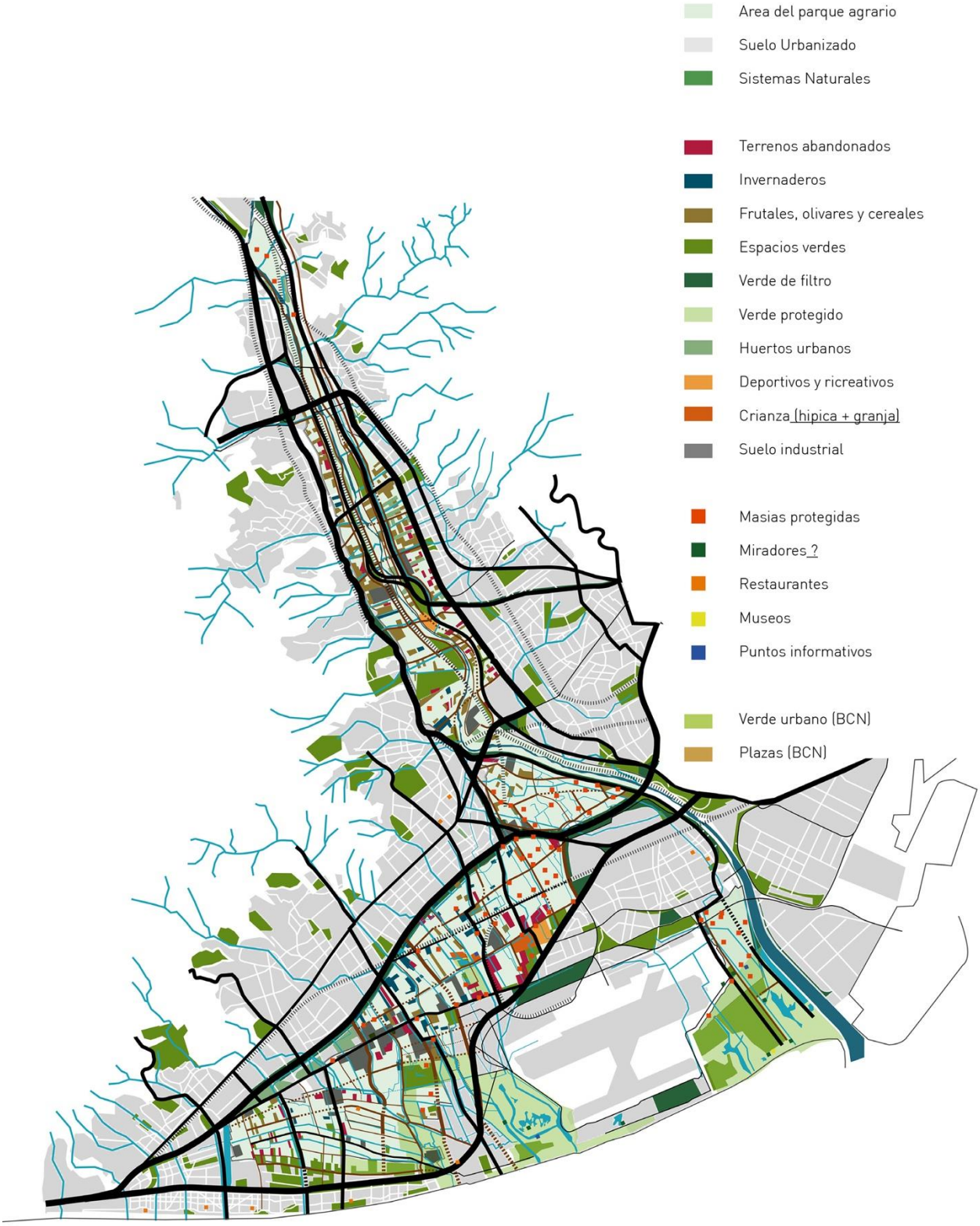

Fig. 02 PABLL_BCN+ Agricultural Park of Baix Llobregat: a park of parks. Landscape expression of the organization and dynamic digital expression of eco-productive and potentially eco-tourist sites, in dynamic networks through new apps. of ad hoc Exchange. Fuente: Actar Arquitectura with Gic-Lab, 2014

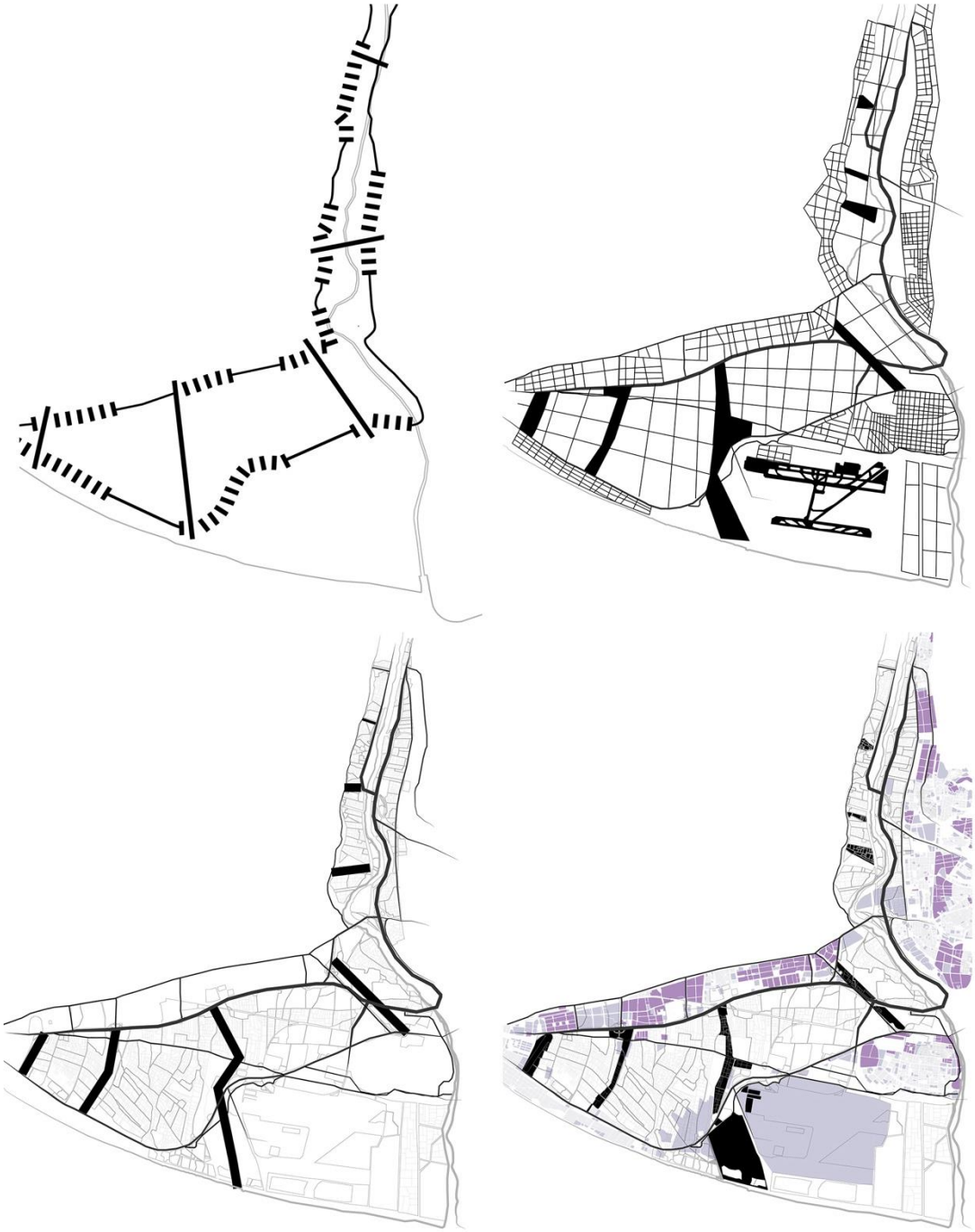

Fig. 03 Llobregat Park Project: logogram, ideogram, diagram, scheme.
Fuente: GicLab students 2014-2015

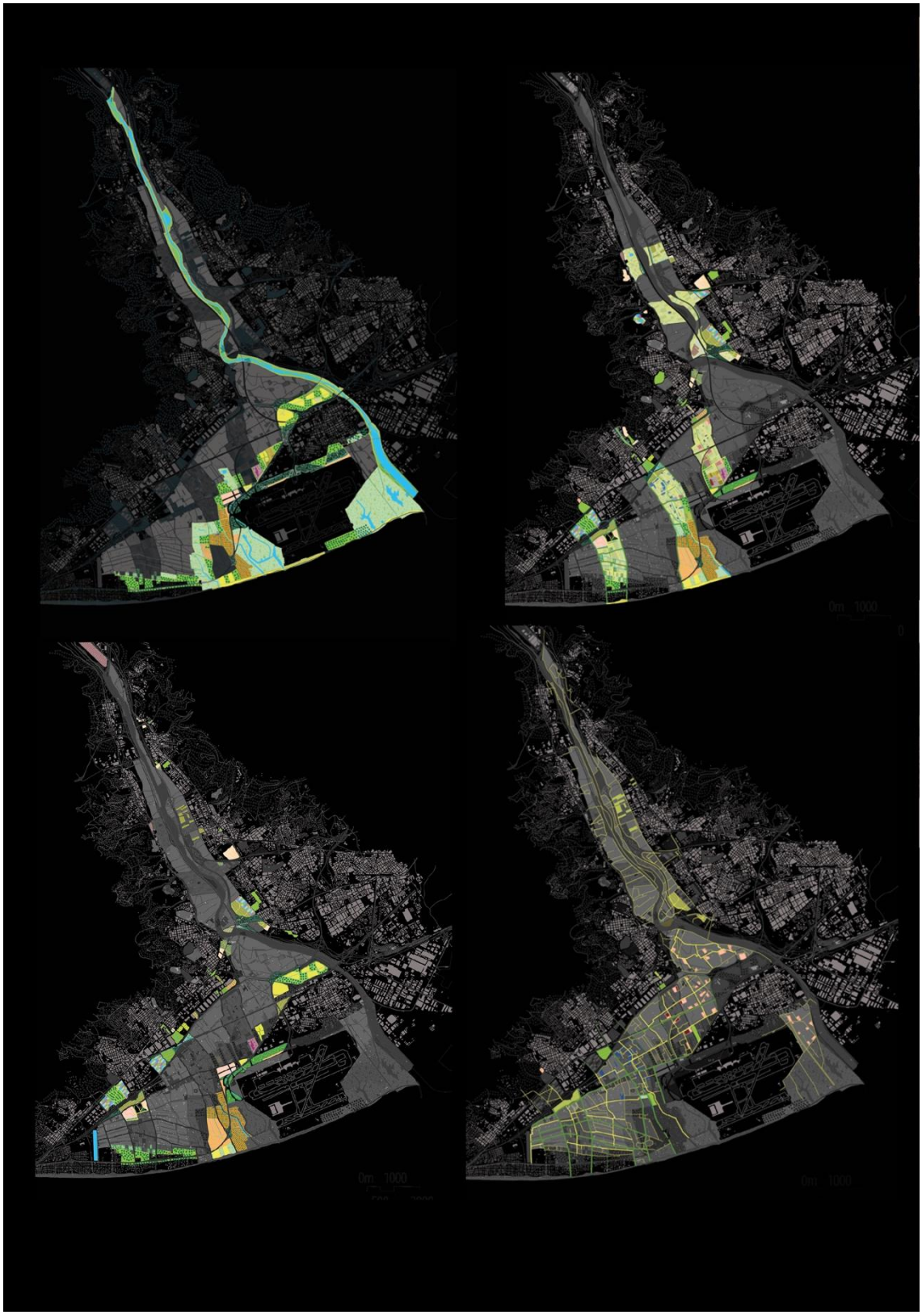

Fig. 04 PABLL_BCN+ Agricultural Park of Baix Llobregat: a park of parks. Structural Layers, Sectorial and Intentional Visions.
Fuente: Actar Arquitectura with Gic-Lab, 2014-2016

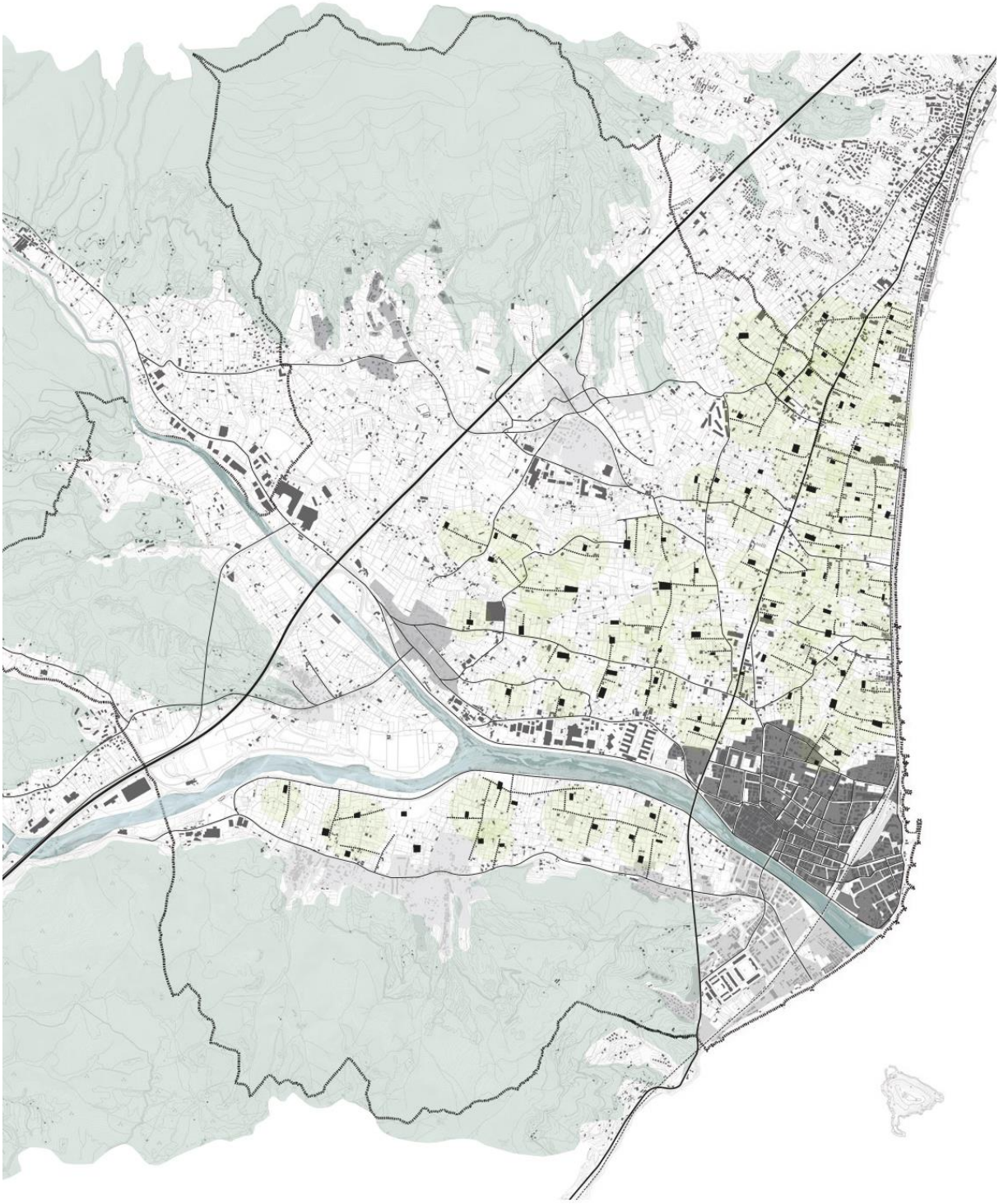

Fig. 05 Analysis schemes of the city of Albenga
Fuente: Master thesis of Lucia Pelosi

Fig. 06 Analysis schemes of the CorePark Project of Albenga
Fuente: GlassCity Research of Giorgia Tucci

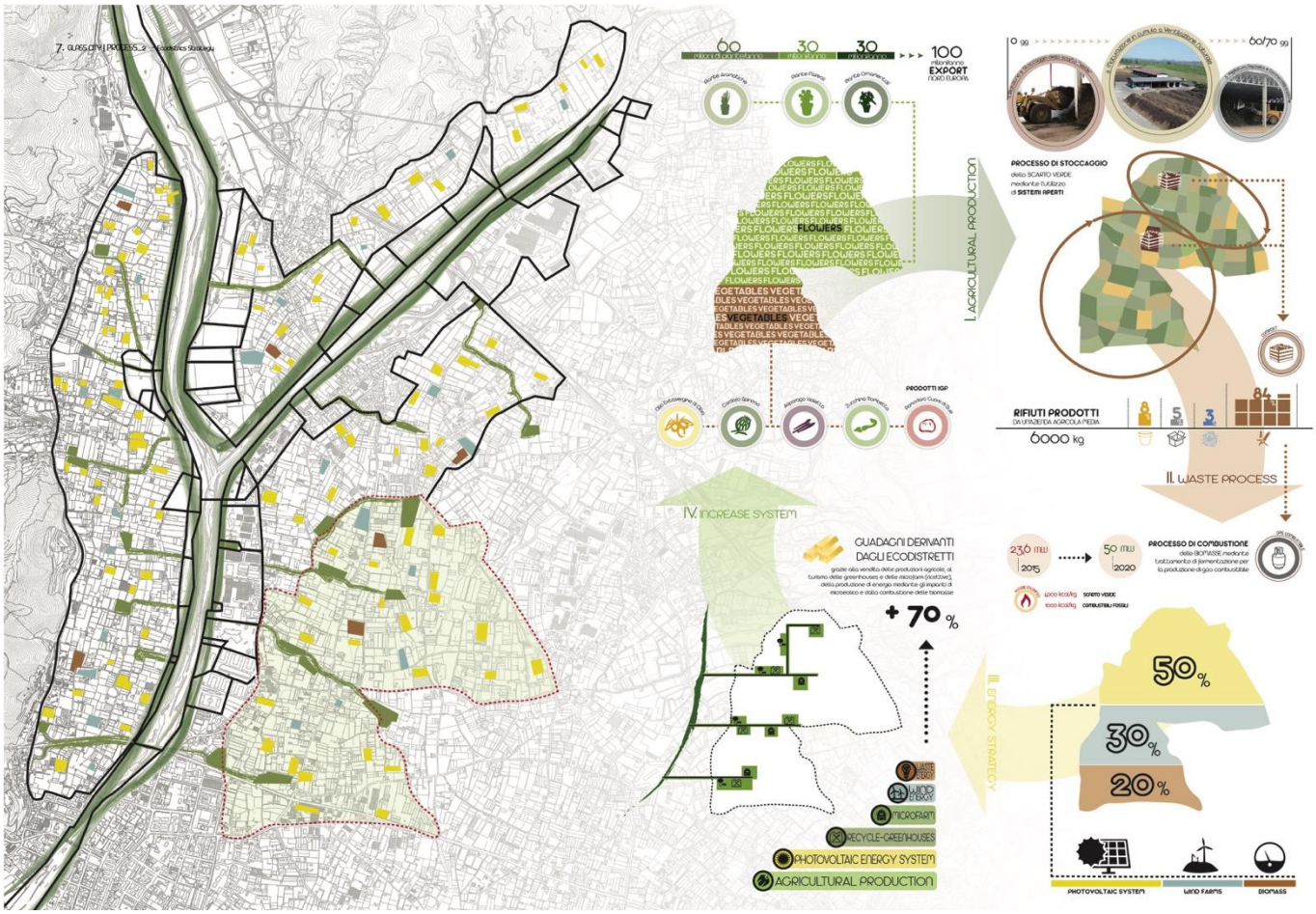

Fig. 07 Self-feeding Strategy applied to the ecodistrics, 4 phases.
Fuente: GlassCity Research of Giorgia Tucci

Bibliografía

Buonanno, D. 2014. *Ruralurbanism, Paesaggi produttivi*. Napoli: Università degli Studi di Napoli Federico II. Online Version: http://www.fedoa.unina.it/9971/1/Buonanno_Daniela_26.pdf (Consulta: 8/02/2020).

Campiotti C., Alonzo, G., Belmonte, A., Bibbiani, C., Di Carlo, F., Dondi, F., Scoccianti, M. 2009. *Renewable energy and innovation for sustainable greenhouse districts*. Oradea-Romania. 15th Conference of Energy Engineering, 4-5 June, 2009, Baile Felix (Oradea-Romania). University of Oradea, Fascicle of Energy Engineering, vol.15.

Capelli, L. 2013. *City Sense. Shaping our environment with real-time data*. Barcellona: Actar Editori.

Carrabba, P., Di Giovanni, B., Iannetta, M., Padovani, L. M. 2013. Città e ambiente agricolo: iniziative di sostenibilità verso una Smart City. In *EAI Energia, Ambiente e Innovazione* n. 6 (21-26).

De Castro, P. 2010. *L'agricoltura Europea e le nuove sfide globali*. Roma: Donzelli.

Gausa, M., Canessa, N. 2018. *AC+ Agro-cities, Eco-Productives Landscape***.** *Agricultural Parks as Key Studies.* Barcellona: Actar Editori.

Gausa, M., Guallart, V., Muller, W., Prat, R. 2003. *HiperCatalunya, Territoris de Recerca*. Barcellona: Actar Editori.

Hubner, S. 2014. *L'agricoltura Europea e le nuove sfide globali*, Int. Stat. Flowers & Plants 2013. ZBG der Leibniz Universitat, Hannover, AIPH/Union Fleurs (NL), vol. 61.

Ricci, M. 2012. *Nuovi Paradigmi*. Trento: ListLab.

Sommariva, E. 2015. *Cr(eat)ing City. Agricoltura urbana. Strategie per la città resiliente*. Trento: ListLab.

Tucci, G. 2018. *Albenga GlassCity. From the GlassCity to the GreenCity.* Trento: ListLab.

Fuentes electrónicas

«*Hechos y Cifras de la Agricultura, la Pesca y la Alimentación en España*». 2006. Ministerio de Agricultura, Pesca y Alimentación. NIPO: 251-06-115-0.
Website: https://www.mapa.gob.es/es/desarrollo-rural/temas/programas-ue/00_tcm30-84598.pdf (Consulta: 10/02/2020).

UNWTO: United Nations declares 2017 as the International Year of Sustainable Tourism for Development. 2017.
Website: https://media.unwto.org/press-release/2015-12-07/ united-nations-declares-2017-international-year-sustainable-tourism-develop (Consulta: 6/02/2020).

EcoDitricts Suistanable Neighborhoods: EcoDistricts Certified.
Website: https://ecodistricts.org/ certified (Consulta: 6/02/2020).

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