

TeMA

Journal of
Land Use, Mobility and Environment

The concept of "Smart City", providing a the solution for making cities more efficient and sustainable has been quite popular in the policy field in recent years. In the contemporary debate, the concept of smart cities is related to the utilization of networked infrastructure to improve economic and political efficiency and enable social, cultural and urban development.

Tema is the Journal of Land use, Mobility and Environment and offers papers with a unified approach to planning and mobility. TeMA Journal has also received the Sparc Europe Seal of Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ).



SMART CITIES

RESEARCHES, PROJECTS AND GOOD PRACTICES FOR THE BUILDINGS

SMART CITIES:

RESEARCHES, PROJECTS AND GOOD PRACTICES FOR BUILDINGS

2 (2013)

Published by

Laboratory of Land Use Mobility and Environment
DICEA - Department of Civil, Architectural and Environmental Engineering
University of Naples "Federico II"

TeMA is realised by CAB - Center for Libraries at "Federico II" University of Naples using Open Journal System

Editor-in-chief: Rocco Papa
print ISSN 1970-9889 | on line ISSN 1970-9870
Lycence: Cancelleria del Tribunale di Napoli, n° 6 of 29/01/2008

Editorial correspondence

Laboratory of Land Use Mobility and Environment
DICEA - Department of Civil, Architectural and Environmental Engineering
University of Naples "Federico II"
Piazzale Tecchio, 80
80125 Naples
web: www.tema.unina.it
e-mail: redazione.tema@unina.it

TeMA

Journal of
Land Use, Mobility and Environment

TeMA - Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and Environment. Domains include: engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science, and complex systems.

The Italian *National Agency for the Evaluation of Universities and Research Institutes* (ANVUR) classified TeMA as one of the most highly regarded scholarly journals (Category A) in the Areas ICAR 05, ICAR 20 and ICAR21. TeMA Journal has also received the *Sparc Europe Seal* for Open Access Journals released by *Scholarly Publishing and Academic Resources Coalition* (SPARC Europe) and the *Directory of Open Access Journals* (DOAJ). TeMA publishes online under a Creative Commons Attribution 3.0 License and is blind peer reviewed at least by two referees selected among high-profile scientists. TeMA is a four-monthly journal. TeMA has been published since 2007 and is indexed in the main bibliographical databases and it is present in the catalogues of hundreds of academic and research libraries worldwide.

EDITOR- IN-CHIEF

Rocco Papa, Università degli Studi di Napoli Federico II, Italy

EDITORIAL ADVISORY BOARD

Luca Bertolini, Universiteit van Amsterdam, Netherlands
Virgilio Bettini, Università Luav di Venezia, Italy
Dino Borri, Politecnico di Bari, Italy
Enrique Calderon, Universidad Politécnica de Madrid, Spain
Roberto Camagni, Politecnico di Milano, Italy
Robert Leonardi, London School of Economics and Political Science, United Kingdom
Raffaella Nanetti, College of Urban Planning and Public Affairs, United States
Agostino Nuzzolo, Università degli Studi di Roma Tor Vergata, Italy
Rocco Papa, Università degli Studi di Napoli Federico II, Italy

EDITORS

Agostino Nuzzolo, Università degli Studi di Roma Tor Vergata, Italy
Enrique Calderon, Universidad Politécnica de Madrid, Spain
Luca Bertolini, Universiteit van Amsterdam, Netherlands
Romano Fistola, Dept. of Engineering - University of Sannio - Italy, Italy
Adriana Galderisi, Università degli Studi di Napoli Federico II, Italy
Carmela Gargiulo, Università degli Studi di Napoli Federico II, Italy
Giuseppe Mazzeo, CNR - Istituto per gli Studi sulle Società del Mediterraneo, Italy

EDITORIAL SECRETARY

Rosaria Battarra, CNR - Istituto per gli Studi sulle Società del Mediterraneo, Italy
Andrea Ceudech, TeMALab, Università degli Studi di Napoli Federico II, Italy
Rosa Anna La Rocca, TeMALab, Università degli Studi di Napoli Federico II, Italy
Enrica Papa, Università degli Studi di Roma Tor Vergata, Italy

ADMISTRATIVE SECRETARY

Stefania Gatta, Università degli Studi di Napoli Federico II, Italy

SMART CITIES: RESEARCHES, PROJECTS, AND GOOD PRACTICES FOR BUILDINGS 2 (2013)

Contents

EDITORIALE Rocco Papa	143	EDITORIAL PREFACE Rocco Papa
FOCUS		FOCUS
Resources and Energy Management The Case of the Agropoli Urban Plan Francesco Domenico Moccia	145	Resources and Energy Management: the Case of the Agropoli Urban Plan Francesco Domenico Moccia
Urban Planners with Renewable Energy Skills. Training Description Arto Nuorkivi, Anna-Maija-Ahonen	159	Urban Planners with Renewable Energy Skills. Training Description Arto Nuorkivi, Anna-Maija-Ahonen
LAND USE, MOBILITY AND ENVIRONMENT		LAND USE, MOBILITY AND ENVIRONMENT
Walkability of School Surroundings and Its Impacts on Pedestrian Behavior Lina Shbeeb, Wael Awad	171	Walkability of School Surroundings and Its Impacts on Pedestrian Behavior Lina Shbeeb, Wael Awad
The Spatio-Temporal Modeling of Urban Growth. Case Study: Mahabad, Iran Ail Soltani, Davoud Karimzadeh	189	The Spatio-Temporal Modeling of Urban Growth. Case Study: Mahabad, Iran Ail Soltani, Davoud Karimzadeh

**Tourism and City. Reflections About
Tourist Dimension of Smart City** 201
Rosa Anna La Rocca

**Tourism and City. Reflections About
Tourist Dimension of Smart City**
Rosa Anna La Rocca

**Informazioni dirette ed indirette
nell'organizzazione dello spazio urbano** 215
Alessandro Bove, Carlo Ghirardelli

**Direct and Indirect Information
in Urban Space Planning**
Alessandro Bove, Carlo Ghirardelli

**Modeling the Travel Behavior Impacts of
Micro-Scale Land Use and Socio-
Economic Factors** 235
Houshmand E. Masoumi

**Modeling the Travel Behavior Impacts of
Micro-Scale Land Use and Socio-
Economic Factors**
Houshmand E. Masoumi

**Resilience in the Transition Towns
Movement. Towards a New Urban
Governance** 251
Grazia Brunetta, Valeria Baglione

**Resilience in the Transition Towns
Movement. Towards a New Urban
Governance**
Grazia Brunetta, Valeria Baglione

OSSERVATORI 265
Laura Russo, Floriana Zucaro, Valentina Pinto,
Gennaro Angiello, Gerardo Carpentieri

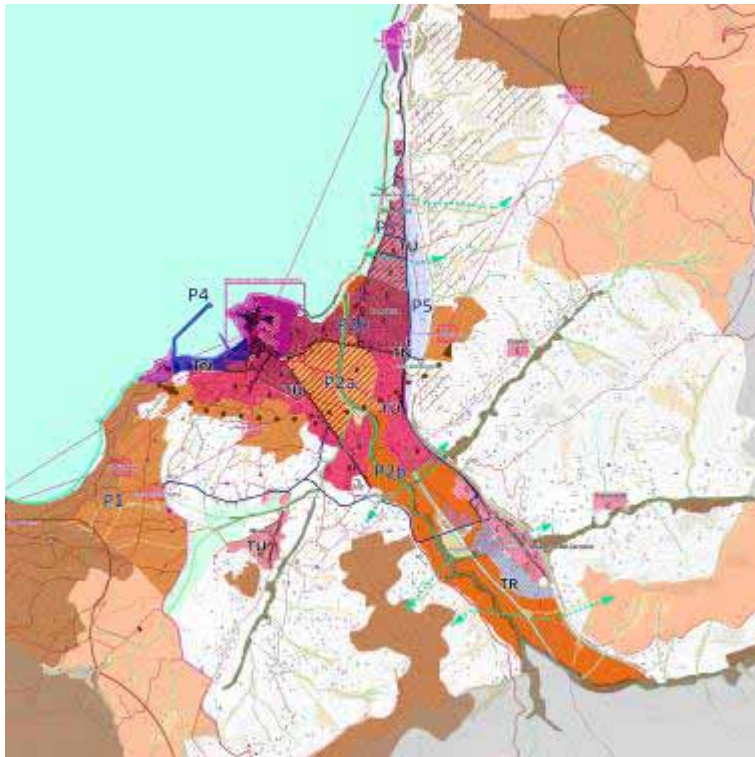
REVIEW PAGES
Laura Russo, Floriana Zucaro, Valentina Pinto,
Gennaro Angiello, Gerardo Carpentieri

TeMA

Journal of
Land Use, Mobility and Environment

TeMA 2 (2013) 145-157
print ISSN 1970-9889, e- ISSN 1970-9870
DOI: 10.6092/1970-9870/1761

review paper. received 16February 2013, accepted 28June 2013
Licensed under the Creative Commons Attribution – Non Commercial License 3.0
www.tema.unina.it



RESOURCES AND ENERGY MANAGEMENT: THE CASE OF THE AGROPOLI URBAN PLAN

FRANCESCO DOMENICO MOCCIA

Dipartimento di Architettura
Università degli Studi di Napoli Federico II
e-mail: fdmoccia@unina.it

ABSTRACT

The issue of the resources management, of the energy-environment retrofitting framed in strategies to mitigate and adapt to climate change, aimed at energy saving, energy generating from alternative sources, metabolism and natural resources is one of the central topics the City Urban Planning of the City of Agropoli, currently approved by Resolution of the City Council no. 110 of 18.04.2013.

The plan is part of the wider system of actions taken by the Municipality to achieve the objectives on the environment posed by the European Union with the Directive "EP seals climate change package 20-20-20". In particular the planning tool provides a series of actions aimed at containing the energy consumption through measures to rationalize, do not waste and reduce the use of non-renewable resources, by promoting "best practices" from the management of public assets, the use of innovative technologies in all sectors and activities; the diffusion of renewable energy production, with care to avoid impacts and interference with the historical landscape, including the promotion of programs and interventions of public management. The different strategic projects will take care of specific actions also for the experimental use of innovative technologies.

The article proposes, within the framework of strategies and actions at the European level for small municipalities, the example of the City of Agropoli drawing conclusions and reflections on the issue of energy saving relative to the housing stock.

KEYWORDS:

Resource management; energy saving; small municipality

1 RESOURCE MANAGEMENT AND URBAN PLANNING

Environmental sustainability and climate change concerns have been a fundamental source of new ideas and approaches in urban planning over the last years. In fact here is increasing interest in the academic literature regarding municipal level action for sustainable development and to address climate change (Moccia, 2009).

In the 1990s the more comprehensive approach of Local Agenda 21 (LA21) received most of the attention, while local climate policy has gained much attention during the 2000s. This evolution brings a trend away from comprehensive sustainability initiatives towards energy-focused and sector-based initiatives focusing on reducing the emissions of greenhouse gases. This shift flanks a companion shift from preservation of natural assets to the reform of the city fabric where greenhouse gas emission concentrate and is moving the majority of the world population (Droege, 2008).

Recently, sustainable development is increasingly being used to guide urban planning. However, its implementation is not immediately apparent, because there has been no general agreement on how the concept should be translated into practice (Berke and Conroy, 2000; Jepson, 2001). According to the literature, resource management is a key factor for Sustainable Development, where RM refers to the conscious handling of natural resources, energy and materials and the utilization of infrastructure and technology to meet human needs; including extraction, transformation, consumption or use and disposal of resources. Hence, RM includes natural resources and manmade products (Agudelo - Veraa *et al.*, 2011).

One of the spreading concepts in the last year regards the urban metabolism concept, aims for improved resources management by closing urban cycles, applying innovative technologies and harvesting urban resources. In practice, good principles and processes stated in literature must meet aims of local communities and their political representatives in the decision making arena.

In the specific field of energy resources, in the last years the approval of the European climate change package gave a further pressure to ensure that the EU will achieve its climate targets: a 20% reduction in greenhouse gas emissions, a 20% improvement in energy efficiency, and a 20% share for renewables in the EU energy mix. At the local level of small municipality civic associations are campaigning according these general principles, strongly requiring adapting the urban planning tools with the aims of defining and putting into practice the general resources management and energy savings goals, sometimes obtaining to be heard by Majors and City Councils. Cities can lead in the reduction of CO₂ emissions and the fight against climate change. Within cities, buildings are the largest energy-consuming sector, and offer the largest cost-effective opportunity for savings. Relative to almost all other investments, energy efficiency retrofit – installing newer energy efficiency technologies in older buildings – reduces emissions and improves energy security. However, considerable intensification in the delivery of ambitious whole-building energy efficiency upgrade programmes is needed. Integrated urban strategies provide the means to tackle the various challenges faced by cities. These strategies must link together the social, environmental and economic policy dimensions, connect the various levels of responsible governance, and involve the key stakeholders in the implementation of an energy efficiency policy for each municipal building stock (Owen Lewis *et al.*, 2012). Cities are ideally placed to drive action on sustainability through local action plans.

A further step is to link sustainability action plans in the general city planning process and tools. In his way, the urban form is designed according to ecological principles searching for solutions of the built environment able to assure the higher grade of resilience, the most saving of natural resources and the best metabolism of the cycles of nutrients (Moccia 2011). These objectives may regard both the new development as well as the already built up areas, some of whom are targeted by redevelopment programs while all the other are to be upgraded and retrofitted to reach the ecological standards.

This paper will describe the study case of the PUC (Piano Urbanistico Comunale) plan of Agropoli, a small Municipality in the South of Italy, focusing on the aspects of energy saving and natural resources management, in the general frame of sustainable urban planning.

2 AN EXPERIENCE IN THE SOUTH OF ITALY: THE AGROPOLI PLAN

2.1 THE CONTEXT

Agropoli is a small municipality located in the Cilento area of the province of Salerno, Campania, Italy, with a population of 21.251 inhabitants (Source: Istat 2011). It is an important coastal town, near the western Cilento, Vallo di Diano and Alburnums National Park, on the Tyrrhenian Sea at the southern end of the Gulf of Salerno and south of the Sele plain.

The urbanized land is the 25% of the municipal area, which is higher of the regional value, equal to 7.5% (source: Regional land use), and the provincial value, equal to 4.5%, but it should be noted that in the provincial and regional data, the rural settlement spread is not calculated.

It is to underline the significant impact of the urbanized area in suburban areas almost equal in percentage terms to the urban (9.14% versus 9.43%), from which it derives considerable land consumption in rural areas. The evolutionary trend over 5 decades complaint a process of settlement of the territory, with an uncontrolled expansion of urban areas. The building development has been tremendous and progressive in the time period from 1960 to 2000 invading almost totally Testene area, the coastal area of San Felice and San Marco, and the valley of Fuonti area. The comparison over the past five years highlights in general, a significant increase in the urbanized area (+3.44%) with an average of 0.58% annually, or more than 18 ha/year (188,000 square meters) and an equally significant increase of abandonment (+2.91%). The built a total increase of about 470 manufactured from 2005 to 2011 going from 8060 to about 8530. The speedy development is fuelled by two main attraction: the first is the clustering of services of whom the surrounding municipalities are lacking, the second is the beach where people all over Campania Region, and most from the Naples metropolitan area, love to swim spending there his summer vacation.



Fig. 1 – Views of the Agropoli Municipality

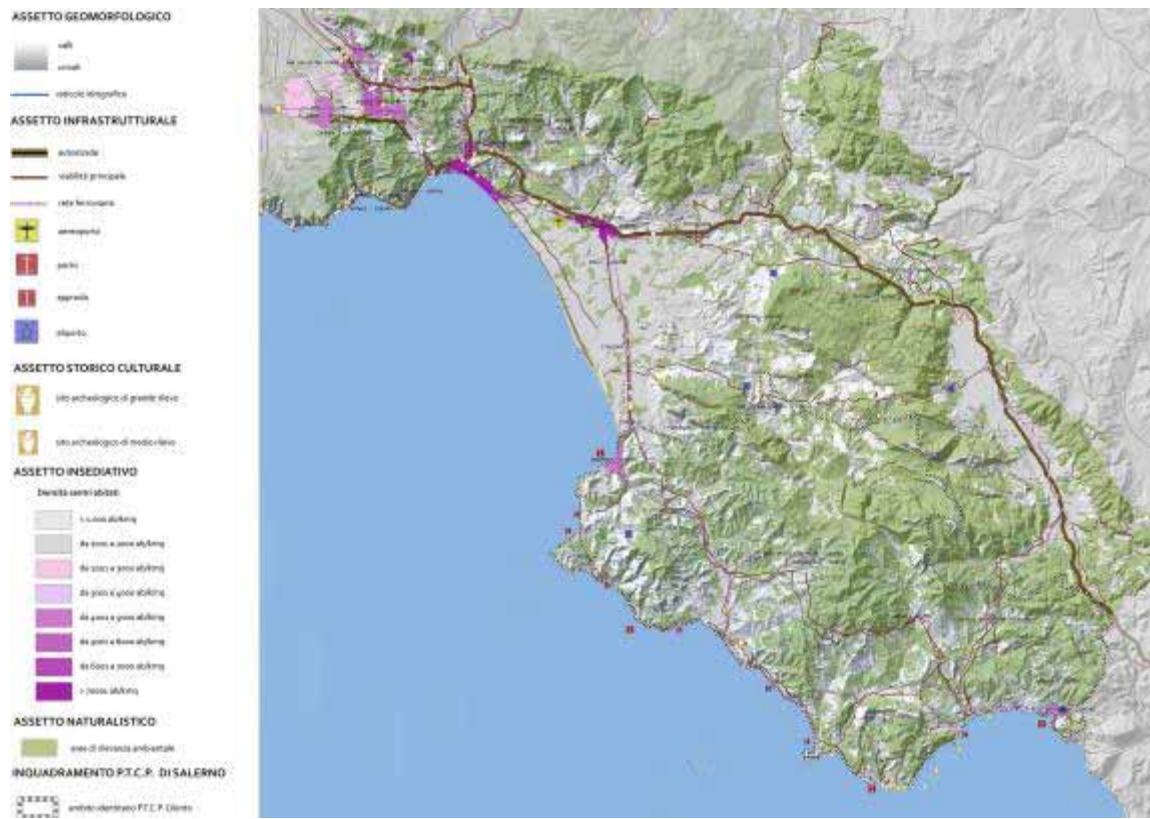


Fig. 2 – Territorial framework

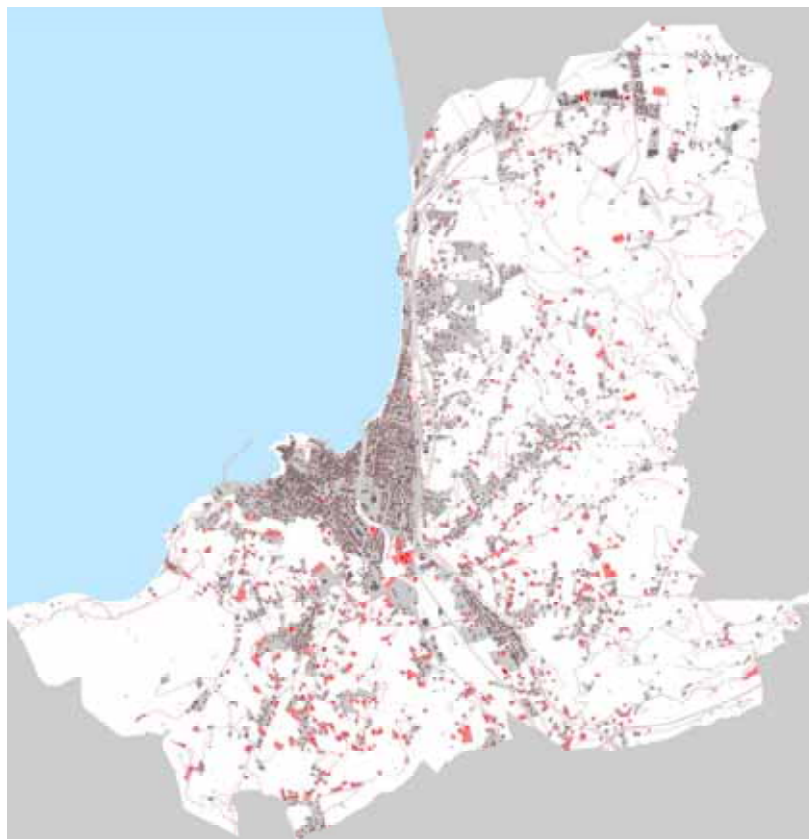


Fig. 3 – The new settlements from 2005 to 2011 (in red)

2.2 THE RM APPROACH, STRATEGIES AND ACTIONS

The resource management approach guides the plan definition and implementation (Comune di Agropoli, 2012; Comune di Agropoli, 2013). In particular the plan defines some “regulation policies”, which are referred to specific planning issues directly connected to the sustainable resources and energy:

- the issue of ecological and landscape redevelopment and mitigation of environmental degradation processes, in particular with regard to the modifications of the rural space;
- the issue of the re-use of urban building and infrastructure heritage, in order both to preserve the identity of places and to counteract the waste of land and other in responding to the demand for housing, social housing and services;
- the issue of urban redevelopment, for the reorganization of the building stock in consistent morphological patterns in relations with the public space;
- the issue of retrofitting energy-environment, framed in mitigation strategies and adaptation to climate change, aimed at saving energy, generation of energy from alternative sources, metabolism of substance and natural resources;
- the issue of “green infrastructure” inside the urban fabric to increase permeability, depuration of areal pollution, greenery; develop ecological corridors for the preservation of biodiversity and fight heat island; with the system equipment for solid waste management, water management, sustainable energy distribution.

Based on the assumptions outlined above the PUC defines a strategic framework organized in three general objectives:

- Ob1: Protection and improvement of the ecological matrix,
- Ob2: Reorganization and strengthening of infrastructure systems,
- Ob3: Urban and landscape rehabilitation for the improvement of the social and touristic fruition.

The strategies related to the first general objective (Ob1) have a distinctly priority, as Agropoli is located in the Cilento National Park, that has been declared UNESCO world heritage. According to this, the Plan defines to locatenew urban settlementsin already developed areas (brownfield sites): here more than elsewhere is valid the principle of “do not touch the untouched” and morenot detract from the general care agricultural and forestry soils.

In detail the actions related to the objective 1 can be summarized as follows:

- Strengthening of the main nodes of the ecological system, through the active conservation and restoring of the habitats and natural resources involved, facilitating the process of naturalization in areas abandoned by agriculture.
- Protection of ecological connections for the landscaping functionality, for the preservation of eco systemic identity and integrity.
- Maintenance and restoration the bio-permeability of soils and hydrogeological balances, through thecontainment and the control of development in rural areas, expansion of traditional farming methods, and integrated control of water management, with particular attention to the recovery of the metabolism of the cycles of natural resources.
- Limiting the consumption of soil, water and other primary resources for non-agricultural uses and activitiesby monitoring and regulation measures of settlements and infrastructure, to be oriented toreuse and recovery of the discarded, abandoned or underutilized building stock.
- Containment, mitigation and prevention of environmental risks, with measures of “adaptation” toglobal change and in particular with measures and interventions to prevent and combat the erosion of the coast and to promote thebeach nourishment; measures to protect against the noise

and electromagnetic risks; control and monitoring of production activities with greatest impact, with particular attention to those in urban areas and in vulnerable areas; measures to reduce water consumption and control over pollution by discharges.

- Containment of energy use through measures to rationalize, do not waste and decrease the use of non-renewable resources, by promoting: the spread of "best practices" from the management of public assets, the use of innovative technologies in all sectors and activities, the dissemination of renewable energy production, with care to avoid impacts and interference with the historical, landscape, including the promotion of programs and management of public interventions. The different strategic projects will take care to define specific actions also experimental the use of innovative technologies in order to promote and implement the objectives defined before.

The second objective (Ob2) converges into a set of actions to strengthen the role and Agropoli position not only to respond to the local demand, but also to the one intercepted on a regional scale, based on the exploitation of natural and cultural resources. The actions that are directed connected to the issue of resource management and energy saving related to the second objective can be summarized as follows:

- Activation of coordinated measures at the inter municipality scale to contain soil and primary resources consumption in manufacturing facilities; promote economies of urbanization and improve network efficiency in the integration of activities and services designed to enhance the manufacturing activities, avoiding interference with agricultural activities and the river band still intact, in order to foster relationships of supply chain processes and the provision of common services.
- Organization, characterization and qualification of complex integrated settlement for production, trading and services through the relocation of activities with significant environmental impact.
- Construction of additional new and diversified accommodation as part of interventions oriented to the re-composition of urban edge, the qualification of underdeveloped and degraded areas, including the redevelopment of complex manufacturing operations of discontinued operations in mixed-use areas (residential-tourist-commercial).

More articulated is the set of actions related to the third objective (Ob3), which focuses on the need of a strong urban transformation of the lately built areas, that differ from the local tradition building models and are characterized by low value, scarce safety, no energy performance and poorly equipped and infrastructured, in order to raise the overall quality of the settlement and its attractiveness, through the urban restructuring and building restoration. The actions that are directed connected to the issue of resource management and energy saving related to the third objective can be defined as the activating processes of urban regeneration in the consolidated city and in strong degraded areas, through the redesign of the not built areas, the reconstruction of margins in urban fringe areas, with the definition of criteria of transformation in relation to the types of building, to the materials and their characteristics, to the weaknesses and opportunities. These actions can be articulated into three main classes:

- *decongesting*, through the rationalization of the road sections and areas for motorized and pedestrian mobility, the provision of parking and green areas, standard services, the rehabilitation of buildings of historical value; incentives for the replacement of buildings which alter the plant or the skyline;
- *completing* the building fabric, through the redistribution of settlement density with building interventions through concentration construction, functional diversification, conversion of use and replacement, with particular reference to tourism services; environmental and functional

qualification of building fabric (energy saving); enhancement of green and open spaces, also aimed at the rainwatersustainable management (Moccia and Coppola, 2009).

- *allocating* the services in urban areas that are poorly served, through the improvement and strengthening of accessibility and connectivity with more central urban areas (pedestrian and cycling pathways network), the equally distribution of standard, the consolidation of residential uses with the functional adaptation and the improvement of the quality of the buildings.

Within the same objective the plan defines other actions that are aimed at the protection and enhancement of open landscapes that surround the city and its branches, with reference to

- open spaces: active conservation of agricultural areas relatively intact, with the maintenance and consolidation of traditional agricultural activities, strengthening the necessary infrastructure and the provision of services to agricultural production;
- landscape redesign of agricultural areas more densely urbanized, with innovative interventions likely to improve their operation and environmental performance, in view of new balances and better conditions environmental safety,
- reuse in rural areas that have been strongly and irreversibly transformed, even encouraging the provision of tourist facilities.

For the specific issue of the component atmosphere and climate change, energy and energy saving, electromagnetic pollution, noise pollution, water pollution, the plan defines specific goals:

- to contribute to the objectives of the Kyoto Protocol to reduce emissions of greenhouse gases
- to increase forest biomass and increase consequently the capability of fixing carbon (carbon sink)
- to improve air quality: reduce emissions of pollutants into the atmosphere from sources and diffuse linear, even though recourse to the use of renewable energy sources
- to contain and prevent electromagnetic pollution
- to contain and prevent noise pollution in the environment external
- to contain light pollution and consumption energy from outdoor lighting to protect public and private environment.



Fig. 4 – view of the Agropoli Selva

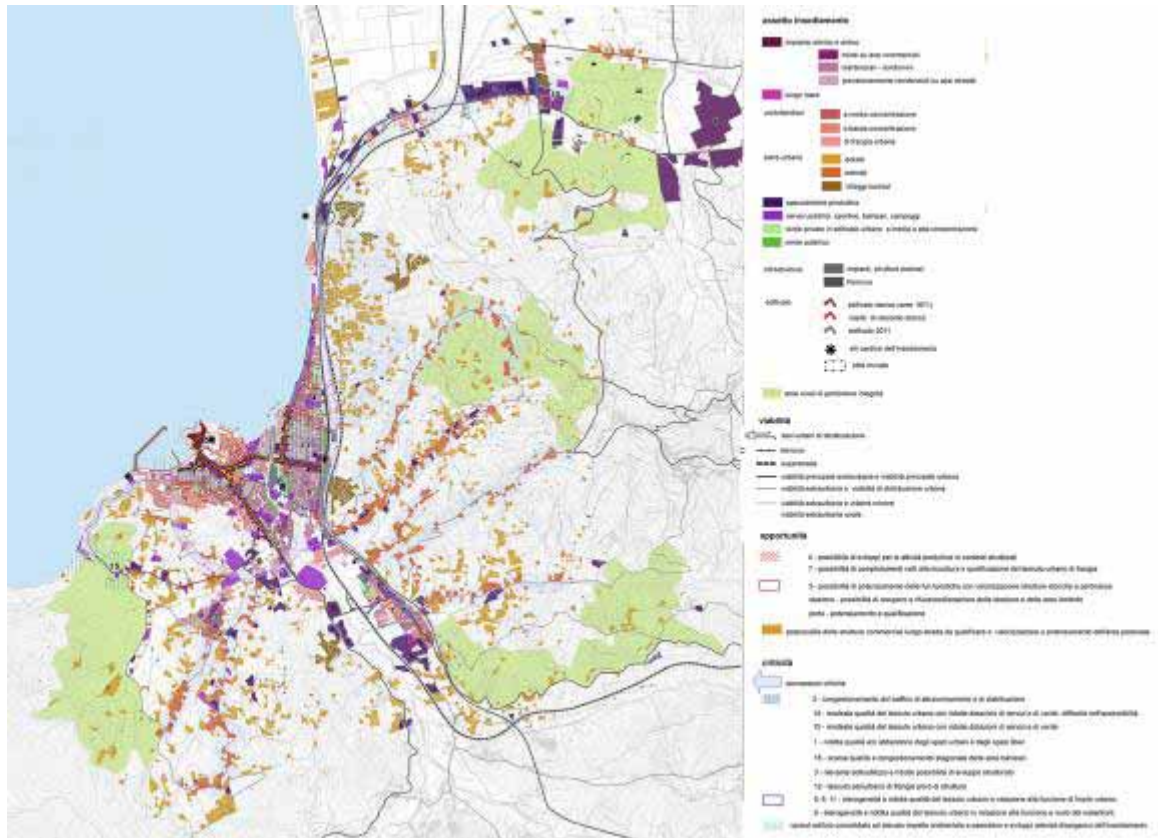


Fig. 5 – Settlement structure of the Agropoli Municipality (Source: Agropoli Urban Plan)

2.3 ENERGY SAVING AND BUILDING STOCK: THE PROJECTS

A significant part of the proposed strategies refers, in addition to regulation measures directly defined by the PUC in its body of regulation, to projects, more or less complex and extended. Some of them are directly related to the issue of resource management and energy saving.

Energy efficiency over the past four decades has focused on individual buildings. More recently, building environmental assessment systems and methods are being extended to address sustainability issues at neighbourhood and district scales. Where energy is concerned, the neighbourhood or city cannot be considered simply as an aggregation of buildings. According to this, different actions are defined in the PUC. The first action regards the building stock retrofitting. The existing building stock must undergo an energy efficient transformation. In particular for the all Municipality, the plan defines rules and interventions for upgrading the energy efficiency of buildings to favour with the provisions of the building code, with the improved thermal insulation and the provision of energy-saving appliances. The challenge lies in how to communicate the benefits of energy efficiency and retrofitting to the wider community, and how to address the upfront capital costs. Understanding what motivates consumers to undertake retrofit works is an integral component of stimulating retrofit demand in sustainable cities.

The second action regard the energy saving, according to the general objective of containing light pollution and energy consumption by public and private outdoor lighting to protect the environment. Containment of energy use through measures to rationalize, do not waste and reduce the use of non-renewable resources, by promoting: the spread of "best practices" from the management of public assets, the use of innovative

technologies in all sectors and activities, the dissemination of renewable energy production, with care to avoid impacts and interference with the historical landscape, including through the promotion of programs and management interventions

The Agropoli administration, also under the pressure of the PUC, is working at Action Plan for Sustainable Energy (PAES), which shall consist of a document in which to bring together the efforts of the City and of public and private actors operating in the area, with the ambitious goal of achieving the reduction of CO₂ emissions, and in drawing up a basic inventory of emissions. Within the PAES, the consumption of energy throughout the city is being detected, starting from the Town Hall, and then check the Schools, the Public Transport, until to monitor emissions in Agriculture, Industry, Commercial, residential buildings, private transport. To date, not many Italian municipalities have completed the process of SEAP, both for the complexity of the work to be done, both for the harsh review of the same made by the analysts of the European Community. Agropoli is one of the first municipalities in the province of Salerno that started to realize the PAES, the main instrument to access grants and funding provided by the EU in environmental matters. The implementation of the SEAP will make a significant contribution to private entrepreneurship that will be called to carry out the works that are going to plan and provide jobs for young people. After a first draft the SEAP, will hold a meeting aimed at stimulating suggestions and nominations for investments in the fields identified by specialists for the environment, particularly in innovative sectors such as, heat accumulation, biomass, insulation of housing, urban forestry, mobility, lighting. It is a path of extraordinary importance to ensure Agropoli also to be at the forefront on the Environment and Sustainability.

Furthermore, with the Act - Rational Use Of Energy (n.372/2012) the Municipality is developing in the field of maintenance and public works, actions aimed at rational use of energy and energy efficiency and the use of renewable energy sources, highlighting, in particular, its intention to support the introduction of equipment and/or high-efficiency technologies in the field of public lighting (such as LED, fluorescent lights, low-power, cogeneration, etc.), as well as actions aimed at the promotion and use of renewable energy sources, including measures to provide information and raise awareness on the issue.



Fig. 6– Example of settlements in Agropoli

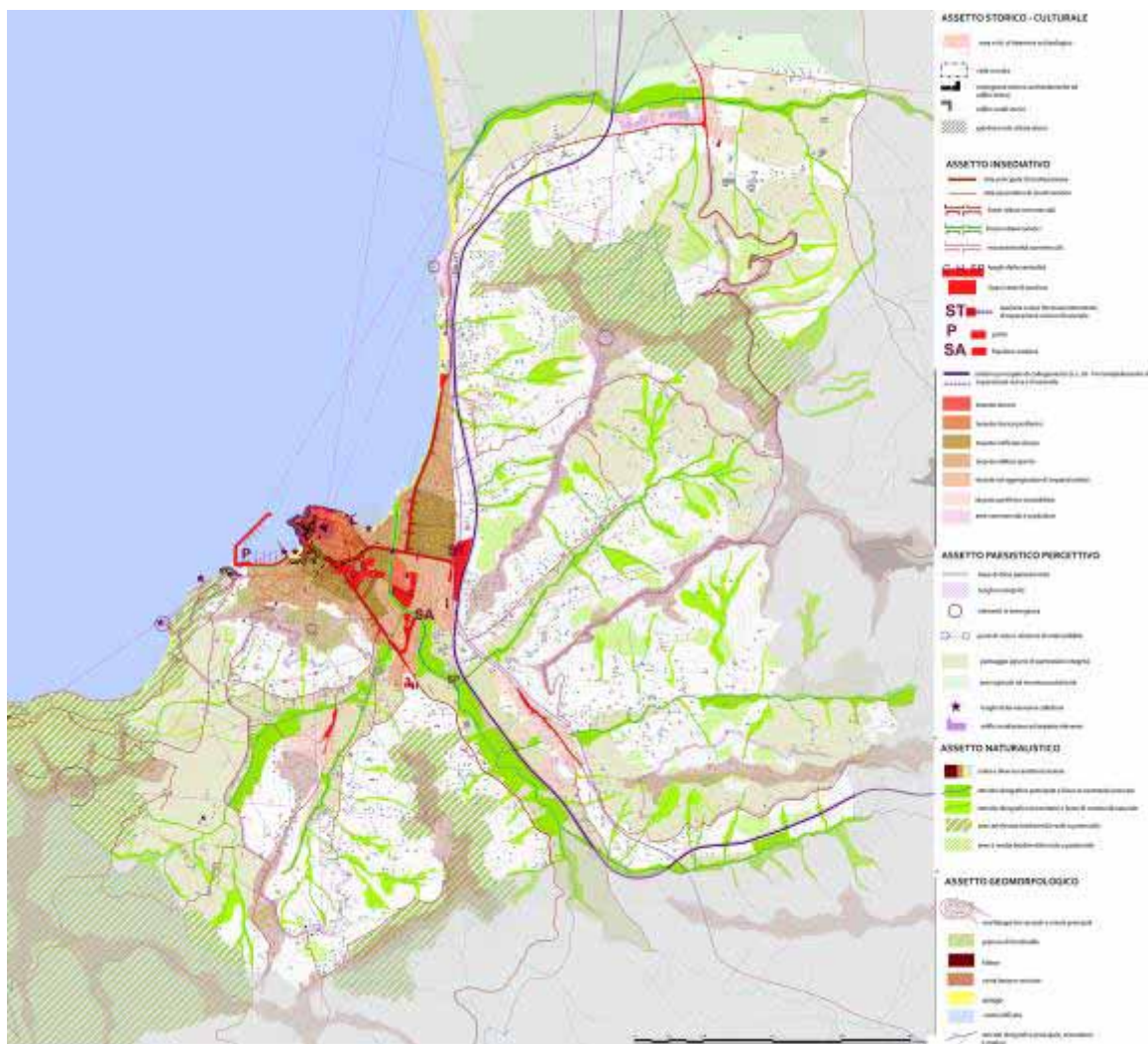


Fig. 7- Structural plan

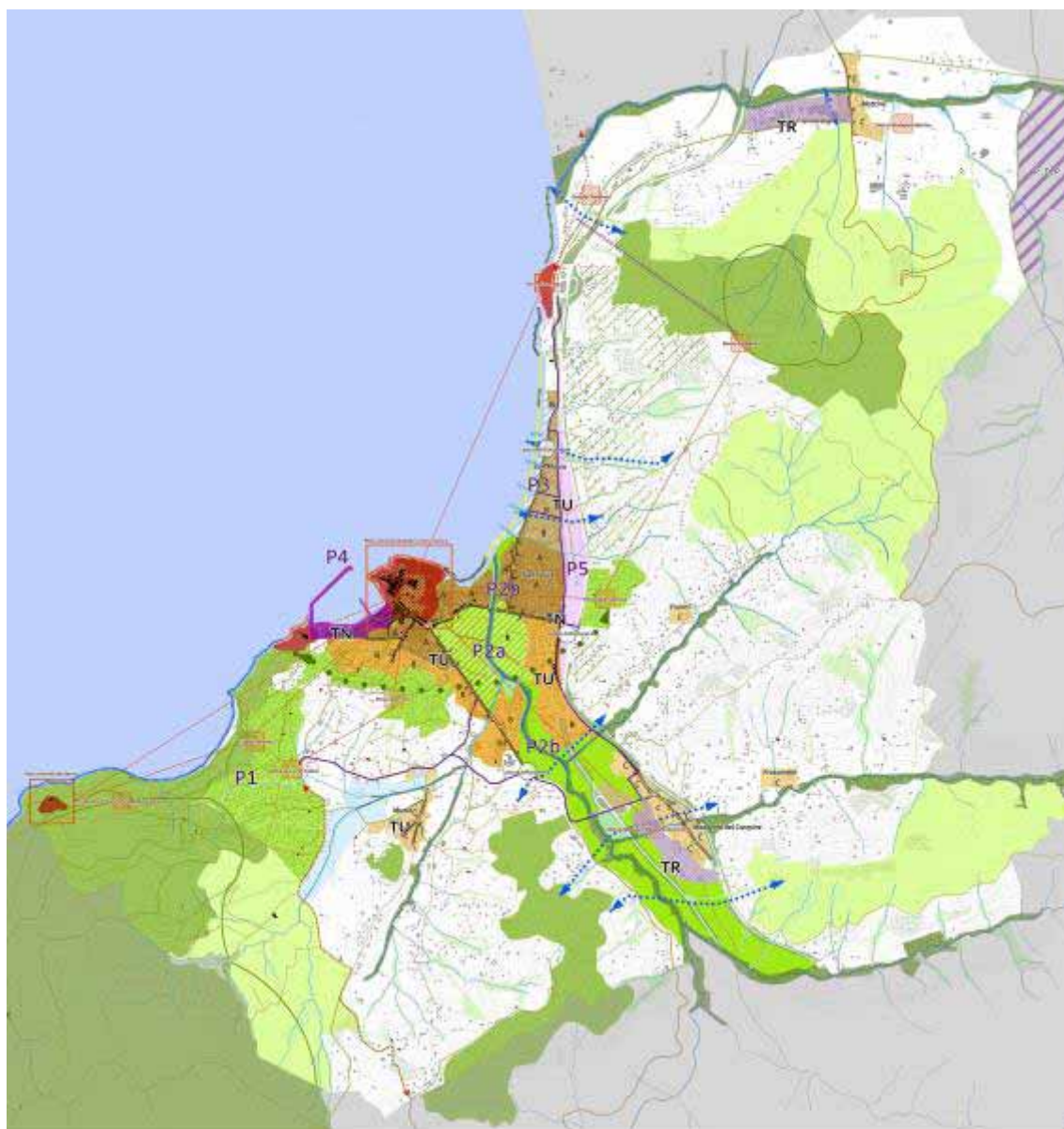


Fig. 9 – Strategic plan

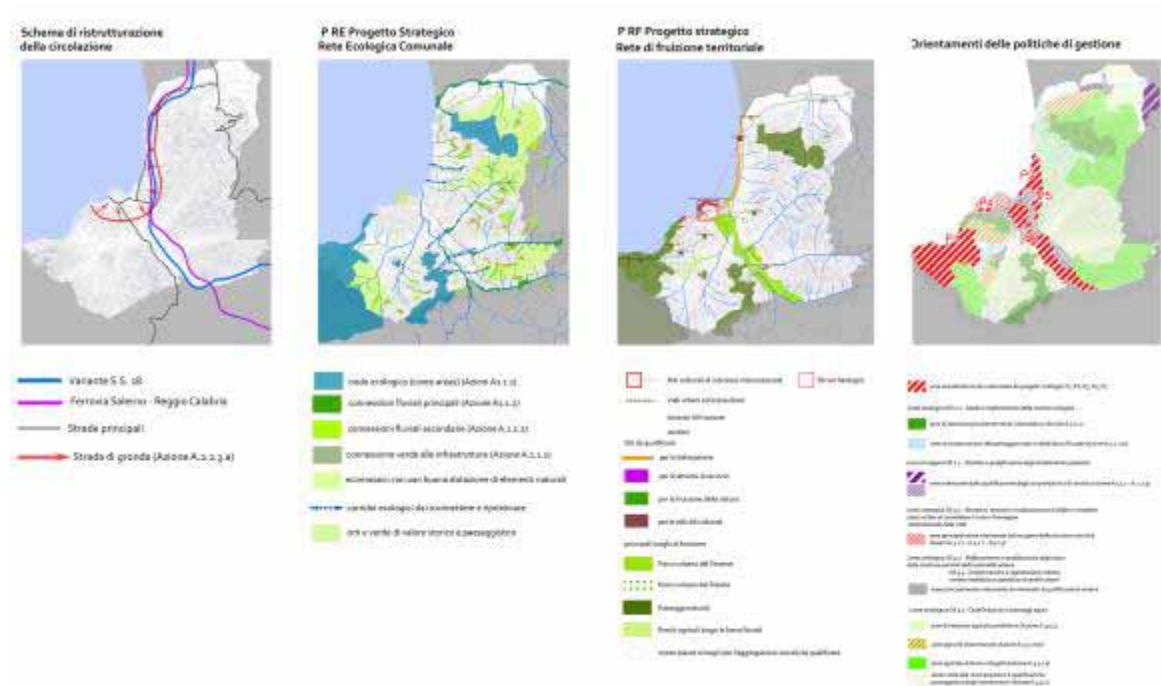


Fig. 10 – Strategies and actions for the mobility network, the ecological network, the territorial fruition and the management

ACKNOWLEDGMENTS

The Agropoli Urban Plan has been designed with the help and work of a multidisciplinary team made by the ing. Agostino Sica, arch. Giuseppe Bilotti, prof. arch. Francesco Domenico Moccia, prof. arch. Roberto Gambino, arch. Antonio Elia Sica, ing. Luigi Vaccaro, ing. Michele Infante, arch. Federica Thomasset, arch. Giuseppe Anzani, arch. Raffaella Gambino

REFERENCES

- Agudelo-Vera, C. M., Mels, A. R., Keesman, K. J., & Rijnaarts, H. H. (2011). Resource management as a key factor for sustainable urban planning. *Journal of environmental management*, 92(10), 2295-2303.
- Berke, P. R. and Conroy, M. M. 2000. Are we planning for sustainable development? An evaluation of 30 comprehensive plans. *Journal of the American Planning Association*, 66(1): 21–32
- Comune di Agropoli (2012) PUC (Piano Urbanistico Comunale) Piano Preliminare
- Comune di Agropoli (2013) PUC (Piano Urbanistico Comunale) Rapporto preliminare della VAS Valutazione Ambientale Strategica
- Droege P. (2008) *La città rinnovabile. Guida completa ad una rivoluzione urbana*. Edizioni Ambiente, Milano
- Moccia F. D. (2009) L'urbanistica nella fase dei cambiamenti climatici, *Urbanistica*, a. LXI, n. 140 (settembre-dicembre), p. 95-102
- Moccia F. D. (ed.) (2011) *Abitare La Città Ecologica / HousingEcocity*, Clean, Napoli
- Moccia F.D., E. Coppola (eds) (2009), *Densificazione e new towns: i casi studio*, *Urbanistica Informazioni*, a. XXXVII, n. 227-228 (settembre-ottobre), p. 21- 35
- Owen Lewis J. , Hógáin S. N., Borghi A. (2012) *Cities of Tomorrow – Action Today*. URBACT II Capitalisation. Building energy efficiency in European cities, URBACT
- Istat (2011) *Censimento Popolazione e Abitazioni*, Istituto Nazionale di Statistica
- Jepson Jr., E.J., 2001. Sustainability and Planning: diverse concepts and close associations. *J. Plan. Lit.* 15, 499e510

IMAGES SOURCES

Figures n. 1 are from http://1.citynews-salernotoday.stgy.it/~media/originale/16463675490787/agropoli_6_1_original-2.jpg and http://www.infoagropoli.it/notizie/Agropoli-ecco-le-linee-guida-del-Puc-_16316.html; figure 4 is from http://commons.wikimedia.org/wiki/File:Agropoli_-_Panorama_dalla_Selva.JPG; figures 6 are from <http://www.panoramio.com/photo/12290666>(on the right) and [http://commons.wikimedia.org/wiki/File:Agropoli,_Italy_-_May_2010_\(18\).jpg](http://commons.wikimedia.org/wiki/File:Agropoli,_Italy_-_May_2010_(18).jpg) (on the left). The other images are from the PUC, Agropoli

AUTHORS' PROFILE

Francesco Domenico Moccia

Full professor of Urban Planning at the University of Naples Federico II. He took part in the of the national board of the INU and SIU, in the Council of National Representatives and in the Association of European Schools of Planning. He was the Urban Planning Councillor of the Municipalities of Afragola and Caserta and of the Province of Naples. He was Vice-President of Metrex, the European Metropolitan Regions and Areas Association.