

Preface

The master's degree program "Advanced Methods and Tools for Sustainable Planning": an educational research laboratory on sustainability at the service of the territory.

In 2010, the definition of the Memorandum of Understanding among the Italian Ministry of Education, University and Research (MIUR), the Autonomous Region of Sardinia (ARS) and the Sardinian Universities for the implementation and the enhancement of the university system and research in Sardinia, offered the opportunity to encourage dialogue and cooperation among universities, institutions and enterprises, by putting in place tools addressed to strengthen the system of research and scientific and technological innovation in strategic sectors for the regional economy, according to the recommendations of the Lisbon Strategy, the National Research Program, the EU's Seventh Framework Programme for Research (FP7). The year after, the Memorandum of Understanding for Higher Education was signed among the ARS Department of Employment, Vocational training, Cooperation and Social Security and the Sardinian Universities to design an innovative project with the aim to increase the postgraduate training offer, focusing on the enhancement of skills and expertise in strategic sectors, with a view of integration in the economic and cultural European and international context.

November 2012 saw the start of the 2nd level University master's degree program "Advanced tools for sustainable planning", designed by the Department of Architecture, Design and Urban Planning of Alghero (DADU) and carried out together with the academic Chinese partner Harbin Institute of Technology (HIT), with the support of the Department of Employment, Vocational training, Cooperation and Social Security of the RAS. It represents an important opportunity for the exchange of views about planning methodologies, current regulations and, above all, the different modalities for a sustainable design and the future management of the city, the environment and the landscape. The idea which inspired the master's degree program is to offer a critical reading of initiatives and processes of implementation, at international level, in order to deal with issues related to different aspects of sustainable planning and management of the landscape in Sardinia and to raise awareness of the current critical situation. In this sense, the Master program offers multiple and interdisciplinary interpretations and points of view, both the technical issues and the opportunities and risks in relation to the strategic dimension of the policies, for example, those which deal, in particular, with the definition of sustainable systems adaptable to different territorial needs, the cooperation between researchers and experts and the training, including the technical structures of lo-

Today we cannot think of dealing with issue like the sustainable development without the cooperation with emerging Countries through the exchange of knowledge, appropriate experience and technology to study strategies for future oriented to improve the quality of life, without distinction between urban metropolis and rural village. Beyond the old friendship of our institutions, the implementation of exemplary interventions at different scales, on the one hand, and the cultural and environmental distance of China from Sardinia, on the other hand, led us to choose the city of Harbin, in the Heilongjiang Province, being the seat to one of the most prestigious Chinese academic institutions, as the destination for the internship required by the training Master's program. This experience was not confined to the mere knowledge of theories and relevant case studies in Chinese territory, but it served as an input device for the construction of a new vision of the territories, with particular attention to the relationships that govern the urban and the rural dimension of the landscapes. Moreover, the great vitality of this nation with respect to the design of its future shows itself not only in the fast growth of the recent years, along with rapid and simultaneous upheavals both of the society and the environment, which has made China the second largest economy in the world, but also in the care the Country puts today on the issue of "green" economy: in fact, it invests more, in absolute and percentage terms, for the development of environmentally sustainable technologies.

However, this opportunity meets the necessary requirement to build several instrumental in-depth operations involving technological and normative innovation, the reform of the operating modes of public administrations and the effectiveness of protection compared to the models of development, as well as qualified skills related to new ways of understanding the sustainable planning, like the whole project strives for. Specifically it was arranged as an opportunity to rethink the specific field of higher education, meeting the most heartfelt demand to compose shared in-depth analyses, that give a new sense to the instrumental action of the learners in the training project, specialists in architectural and engineering field in particular, but including also specialists in of other fields (agronomists, political scientists, naturalists, etc.), all engaged as members of interdisciplinary teams to deal with procedures and tools oriented to sustainability, declined according to different points of view (not only environmental, but also social, institutional, and, ultimately, economic sustainability) and according to the different perspectives offered by the comparison between Europe and China. These perspectives direct the

framework of the future strategic planning and allow to select tools and procedures needed to innovate the design and the sustainable management of landscapes.

Nevertheless the educational project that guides all the activities aims to up-grade the skills of the participants, to the highest degree allowed by state of the art, with regard to the design and the sustainable management of territorial transformations. These have as a natural consequence the landscapes, both in terms of conservation and in terms of transformation. Furthermore traditional models of education, including those who present themselves with a qualifying image, often prove to be unsatisfactory for the learners, due to the lack of an educational reference model. The risk is a contemplative attitude of learners with reference to the knowledge transmitted almost exclusively through conventional forms of training and often in unsuitable spaces to host innovative ways of learning.

Today technical and conceptual structures have not to be trained with an activity made only by frontal lectures, but rather through real designing and planning workshops, which create environments of mutual learning and study, addressed to develop together awareness and testing forms through a common project, without which any interaction is possible. Consequently, if we want to accelerate the EU's transition towards an economy and a society based on knowledge, crucial goal of the Lisbon strategy, the education and training should aim at the construction of interactive environments to build, to maintain, to renew the human and social capital and to promote research excellence in the field of sustainability.

Therefore, the main task of the master is to support the construction of a permanent space of interaction among the people who operate and work in the field of sustainability at different levels and at different scales: institutions, experts, territorial entities and subjects which deal with the territorial management. Specifically, the goal is to put high value and allow researchers and local and international experts to interact, through an efficient network, exchanging their views on experiences and common problems and strategies to cope with them, starting the discussion on the development of new sustainable systems, adaptable to different local needs, identifying lines of action and shared rules to rethink the ways and tools for designing and planning.

Finally, the definition of these tools and methodologies and their possible application is the topic of the Conference "Urban Planning and Sustainable Development" (UPSD

2013). It is an important international meeting point within the master course organized to consolidate a stable and fruitful relationship of scientific collaboration between the two institutions—the University of Sassari and the Harbin Institute of Technology, with a leading role played by the Embassy of Italy in Beijing.

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Preface

The contributions presented in this book deepen the reflections exchanged during the two conferences organized as part of the International Master's Degree "Advanced methods and tools for sustainable planning", which has consolidated, as just said, the academic partnership between the Department of Architecture, Design and Urban Planning of the University of Sassari (Italy) and the School of Architecture Institute of Technology, Harbin (China).

The first conference was hosted in Harbin May 15, 2013 and the second in Alghero November 11 of the same year.

The two initiatives are also placed in the round of Sino-Italian biennial meetings dedicated to sustainable urban planning (UPSD) and have been encouraged and supported by the Autonomous Region of Sardinia and the Italian Embassy in Beijing in the belief that, despite the profound differences, the constant review of the research and the methodological approach, through the sharing of the results obtained, represents a necessary step for those who pursuing excellence goals.

The first major issue that emerges from these experiences is that the two schools of architecture have proved to be sensitive to the most emblematic transformations that are investing their respective territories and have made of it the object of study. This is not surprising, given that the architecture is influenced not only by the techniques which are its own, but also by external forces that challenge its practice.

In the case of China, the massive movement "migration" of the rural population to the cities offers an unprecedented challenge that forces us to question the traditional techniques of construction of urban space and to establish new priorities: first and foremost, maximum energy efficiency and minimum emissions pollutants.

The European context also calls for a more efficient and sustainable cities with a focus on the territories of the margin, the peri-urban agricultural land threatened by misuse and degraded areas: the fate of these hybrids fields can play a decisive role on energy consumption and pollutant emissions management, but most are likely to affect resources critical to the autonomy of the city.

There are several occasions of overlap, but for an easier reading the contributions have

been divided into four sessions. The first consists of the keynote' speeches. They introduce the main topics addressed in the following chapters, calling the suggestions from other cultural fields like in Cecchini one, or with D'Eramo contribution, stretching the concept of margin til reaching the ports as emblematic case where due to the container's revolution the city has broken its millennial relationship with its harbour.

The second session presents two study cases, placed in two very different context; an archipelago of hamlets in the North East of Sardinia (Italy) and a rural village in Ghana. In both situation the researcher explain the strategies adopted or planned to enhance the life quality of rural communities through actions that support their autonomy and through people empowerment, reinforcing the link between the communities and the agricultural field around the villages.

The third sessions addresses the future of peri-urban areas and relevant empty spaces spread into the consolidated city framework exploring the different planning strategies and tools to drive the development of those hybrids towards a more sustainable use.

The fourth and final session is devoted to strategies to reduce carbon emissions in a very challenging context such as China and particularly the regions of the North East. Here the conditions that affect pollutant emissions, already beyond the critical threshold, are subject to a surge in winter season, the climate exceptionally severe and prolonged that requires extraordinary energy resources to heat their homes and work spaces. Finally the Director of the EC2—Europe China Clean Energy Centre, presents the formalization of a partnership between the European Union and China aimed at promoting the use of alternative energy sources with operations in the territory of China that can model and to flying future programs as virtuous.

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