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MEGA-URBAN OPEN SPACES

A joint German-Moroccan research project is exploring new forms of urban agriculture which could offer a solution for open space provision in the mega-cities of tomorrow.

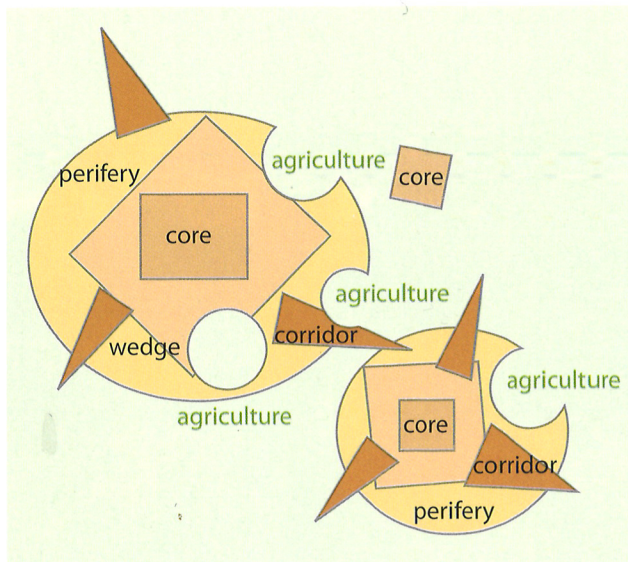
Rapid and uncontrollable development, the increasing gap between the rich and the poor, problems with the provision of housing and technical infrastructure, mainly transport – these are the drastic terms used time and again to describe the challenges facing urban growth centres outside Europe. Against this backdrop the discussion on open space systems for tomorrow's mega-cities seems almost a luxury. But that's misleading. It is the current developments that set the course for the future quality of life in cities. What will open spaces in the mega-cities of the future look like? What is their function? And how can they become an integral part of cities which are growing at a pace that cannot be controlled through planning – in as far as it exists – and characterised by a large proportion of informal spatial developments?

Securing and allocating agricultural land in peri-urban areas today could be a possible approach to future mega-urban open space systems. For more than three years a German-Moroccan research team has been working on this problem using the example of Casablanca in a study within the scope of the German mega-city research project funded by the Federal Ministry of Education and Research.

The region of Casablanca – *Dar el Beida* in Arabic – is the largest and most densely populated area in the Kingdom of Morocco. 22 per cent of the country's urban population already lived in the region in 1994. Owing to the largest port in Africa, 60 per cent of Morocco's industry is based here. Casablanca is the economic engine of the country. While at the beginning of the 20th century a small urban settlement of approximately 20,000 inhabitants was marked on the map, the picture has changed completely within one century. Today, the region extends across an area of 869 square kilometres. It has a population of almost four million and there will be an estimated 4.6 million inhabitants in 2015. Rapid urbanisation is related to informal settlements here too.



Casablanca has expanded enormously: since the beginning of the 20th century the population has grown from 20,000 to four million (left page). Above: Multi-dimensional agriculture, "rurban" citizens and Casablanca's market square.



Long-term linkage of city and country: rural islands become central key spaces for productive urban landscapes.

Of course, the classic public park will continue to exist, also in Casablanca. However, most of the open space concepts like central parks and green belts were conceived in response to urban growth in the 19th and 20th centuries. Today, the dynamics of development are very much higher; in addition to the fight over the resource land there now is competition for water too. Coping with the consequences of climate change, meeting the demands on resource efficiency and contributing to securing food supplies are the touchstones for contemporary green infrastructures. The question arises whether open space must always be a free gift of paradise bestowed by the public sector, or whether, in view of projected land requirements, other types of open space production in mega-regions should be found. In this context, there is much potential for linkages with agriculture. Land in agricultural use within urban areas can now more than ever be considered multi-functional space. It is used for food production and could equally be designed and equipped to make it attractive for leisure purposes. The agricultural areas around Casablanca already are a popular destination. Especially in spring, a growing number of Casablanca's citizens are enticed to combine shopping for fresh vegetables with having a picnic in a field. These beginnings can be taken further. Potentially, urban agricultural land could be specifically developed to contribute to low carbon, regional food production. Additional synergies between city and country could be created by letting farms benefit from the use of treated water from neighbouring urban areas and by providing new recreational and cultural activities on such rural islands.

Urban farmers could become providers of open space in a new urban setting – the “rurban” environment. If the development of attractive synergies between rural and urban structures takes off, e.g. resource-efficient water and waste cycles or local economic cycles, the new open spaces could become attractive working and living environments for a part of the urban population. Establishing linkages between the different, and until now unconnected levels of action is one of the project's main objectives.

What are the potential spaces for such an open space system? First of all, it is an important goal to retain the attractive open spaces in regions where such activities are already taking place. For this reason one of the four pilot projects aims to improve farming and water management in an attractive valley close to the city, and to set up peri-urban tourism projects.

Further potential spaces for productive landscapes will be considered from several viewpoints. This should be based on in-depth knowledge of the agricultural areas, the productivity, the soil quality, the different practices and the inhabitants, but also their perception and values within the region. Equally important is the view from the urban perspective. A thorough analysis of the spatial structures specific to the mega-city will be made. We still don't know enough about the present processes of space

| | Environment | Economy | Society |
|---------|---|--|---|
| Space | for example: land cover soil quality water availability | for example: land use infrastructure speculation | for example: property situation parcelling space utilisation |
| Time | for example: droughts floods prognostic probability | for example: innovations addaption market dynamics | for example: mobility daily organisation migration |
| Culture | for example: protection of resources perception of the environment | for example: traditional products entrepreneur income structure | for example: changement of values every-day culture governance |

production in urban growth centres. On the one hand, they are determined by planning activities and related infrastructure investments, on the other, by uncoordinated and to some extent uncontrolled developments founded on speculative, informal and dynamic land-use processes. What spatial patterns does such an urban development process produce?

The current findings of the mega-city researchers lead to the assumption that within contemporary centres of urban growth the formation of rural islands will be a lasting phenomenon and not a passing occurrence. Such rural islands – we call them lee-side spaces of urban development – can, in terms of tactical open space planning, become key spaces in the development of a system of productive urban landscapes. Here the opportunity lies in the non-simultaneity of urban development processes so that agricultural areas which have undergone the necessary improvements and fulfil the qualifications can stand up to the immense pressure on land-use. To appreciate the value of these spaces for high-quality, climate-sensitive development, an over-arching vision is needed, which can be communicated and discussed by urban society. For this reason, project-based public events, round tables and future workshops are part of the research programme. In addition, a toolkit will be developed that combines classical planning instruments with new specifically designed economic, communicative, or cultural tools for the stakeholders of urban agriculture.

The issue of lee-side spaces makes it clear: it is essential to understand the specific space-temporal framework conditions of mega-cities in order to develop target-oriented solutions and instigate a process of sustainable

Sustainability matrix: space, time and culture must be considered in the sustainable development of mega-cities, along with the three recognised columns ecology, economy and society.

URBAN AGRICULTURE (UA) AS AN INTEGRATIVE FACTOR OF CLIMATE-
OPTIMISED URBAN DEVELOPMENT, CASABLANCA, MOROCCO

Client: Federal Ministry of Education and Research Germany

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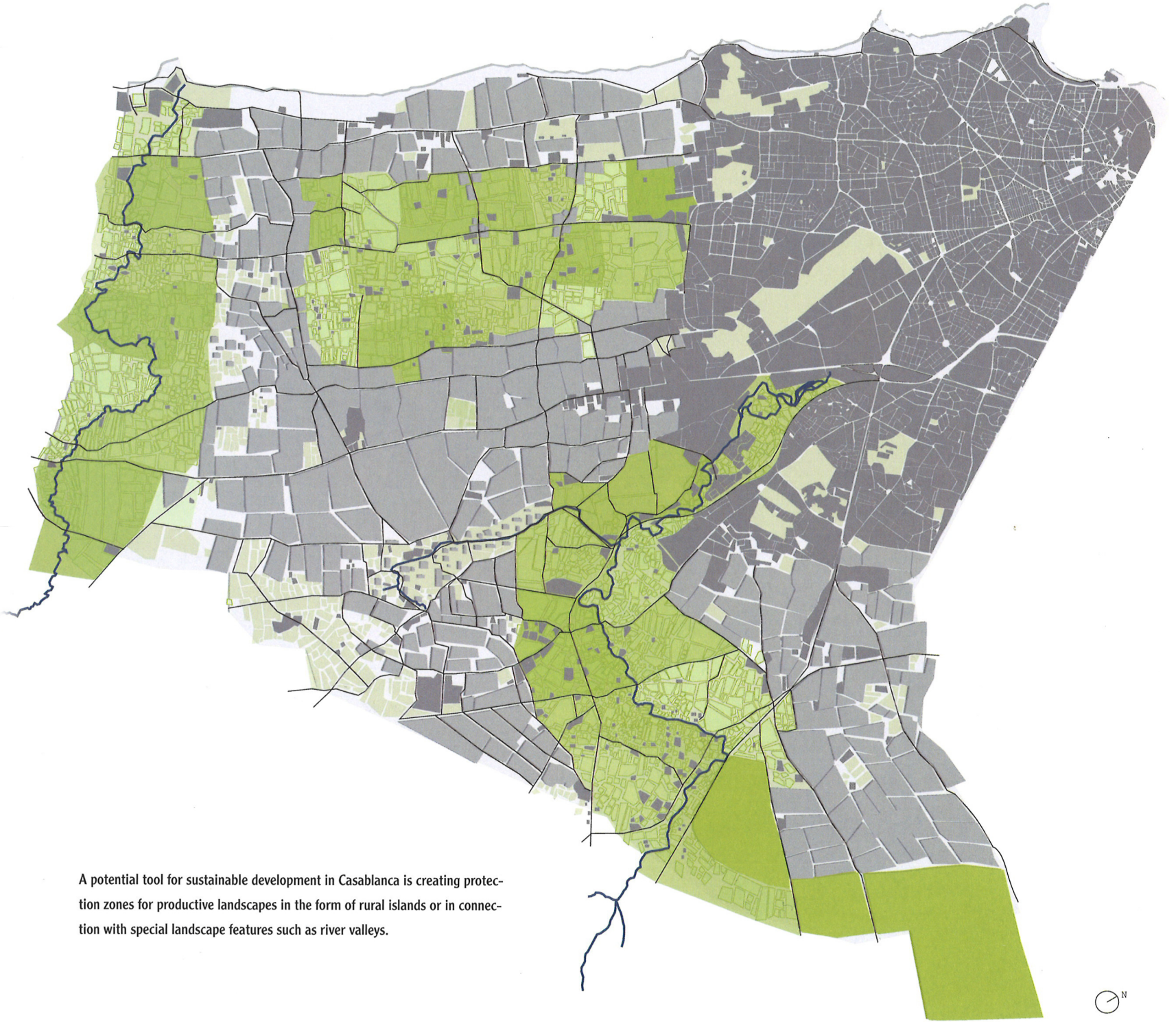
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Research period: April 2008 – March 2013

action. The interdisciplinary and transdisciplinary research team does not only examine the specific spatial and temporal phenomena, but also considers the stakeholders and practices behind them and, thus, the different spatial operating levels. Practices, in the sense of the way in which things are done, are strongly influenced by the respective cultural context. And this is not static either: practices change, particularly with the dynamic changes in urban society, and new ones are adopted. This will be the same for urban agriculture. Existing practices should be reinforced and optimized, but also completely new forms of cultivation and production will be established in the face of changing food and climate patterns. They should contribute to providing urban agriculture with an appealing, future-oriented image as well as boost its approval.

One thing has become clear: when addressing the question of sustainable mega-city development and – with a view to effective implementation in dynamic systems – the aim is to successfully develop appropriate and feasible solutions, the aspects of space, time and cultural context must be an integral part of the sustainability considerations in the same way as the three recognised columns ecology, economy and society. To make this complex approach manageable, an extended sustainability matrix was developed for the project which links up the three recognised columns with the aspects time, space and culture. In the work to date this has proved its worth as an instrument for making "in between" problems visible and identifying important indicators.

At this point we don't know what the "rurban" environments of tomorrow will actually look like, what palette of tools we will need to implement them and what contribution they will really make to low carbon developments and to feeding the cities. However, the German-Moroccan collaboration is proving to be innovative in that scientists from different disciplines and institutions, administrations and civil society organisations will work for another five years closely together on one topic: fusing food and open space cultivation to produce multifunctional urban spaces. The local stakeholders are involved in four large pilot projects which address key questions on new synergies between city and agriculture in different parts of the metropolis. The project has shown initial success. The new preparatory land-use plan for the Casablanca region was adopted at the end of 2008. It includes agriculture as a land-use category and links it with open space objectives. In addition to the basic research that has already started, ideas on multifunctional spaces and the ensuing new urban landscapes are fleshed out in creative workshops and competitions. They offer the chance to create a contemporary and central landscape character type for the Arabic realm of culture: the extensive and intensely irrigated fruit and vegetable gardens that once surrounded Arabic cities – uplifting places for body and soul.



A potential tool for sustainable development in Casablanca is creating protection zones for productive landscapes in the form of rural islands or in connection with special landscape features such as river valleys.