ECOLOGY CONSTRUCTIVELY

SUSTAINABLE DEVELOPMENT OF URBAN AREAS

The collective work edited by Mariusz Szabłowski



Published by Collegium Mazovia

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Published by Collegium Mazovia Siedlce 2016 The collective work edited by Mariusz Szabłowski

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CONTENTS

About Ecology Constructively	3
Introduction	4
Project Ecology Constructively	6
Why ecology	6
Project goals	7
Best practices	7
Documentary films	7
The conference course	8
Workshop session	8
Workshops for children	9
Conclusions for Urban Sustainable Development Strategies	9
Urban Development Management	13
The Socio-economic Dimension of Sustainable Urban Development	14
Introduction	14
Philosophy – creative paradigm	15
Technology – green recovery	19
Politics – rules of ambition	22
Summary	25
Managing Urban Space	27
Connectors between urbanised and non-urbanised areas	27
Integrating urban and regional planning	30
Integrated Development Policy and Strategies for Cities	32
Development policy and spatial development – basic concepts	32
A set of urban policies and the National Urban Policy	33
Legislation for urban areas	34
Real estates and management	35
Urban planning and urban policies	35
Cooperation between cities	36
Development planning integration	36
Rules of development planning integration	37
Integrated investment strategies and strategic projects	38
Integrated Activities in the Context of Urban Development	40
Urbanized Areas and the Environment	43
Urban Environment	44
Sustainable environment	44
Natural resources management	44
Environmental planning and governance	46
A City in the Context of Climate Change	51
Adapting Cities to Present-day Threats	55
Safe city	55
Crises and response to natural calamities	55

A Friendly City	59
Thorny issues in housing	60
A City for All	63
Inclusion and social capital in urban planning	63
Participatory Planning as an Element of Sustainable Development	68
Introduction to participatory planning	68
Praga Północ – workshops as an example of urban regeneration participatory planning	68
Praga Północ workshops – conclusions and lessons learned	70
Summary	71
Participatory Governance	72
Public consultations	73
Participatory budgeting	74
The Future of Cities	77
Ecopolis in the European Development Strategy	78
Progress in urban development	78
Challenges for the cities of Europe	79
Urban strategies	80
Monitoring City Life	82
City manager and reporting bodies	85
Companies	86
Society	87
Summary	87
Urban Innovation	88
Eco-innovation	88
Cities Innovative By Nature	92
The Smart City	93
Films about Ecology Constructively	95
Germany	96
Belgium	96
The Netherlands	97
The United Kingdom	97
Ireland	97
Sweden	97
Croatia	98
Malta	98
Denmark	99
Italy	99
Kosovo	100
About the authors	103
Bibliography	108

ABOUT ECOLOGY CONSTRUCTIVELY



In the era of worldwide competition, European cities are the strength of the Old Continent. Globally, they provide for above-average conditions in which inhabitants and visitors live, work and develop. The following factors influence the quality of life in European cities: cultural and historical values, spatial order, public security, socio-economic relations, and the geographic environment. Even if various urbanized areas suffer from critical deficiencies in different domains, the balanced attributes of cities are a distinctive feature of Europe.

The quality of urban environment promotes the development of civil societies and creates space for the Europe of Knowledge. High-quality sustainable development of urban areas is a good strategy for both, Europe and Poland.

In this publication we wish to draw attention to selected aspects of urban sustainable development. The aspects refer to development management, shaping the environment of urbanized areas, building a friendly city and the future of European cities. Despite the great variety of subjects brought up by the publication authors, the common denominator and an overall thrust seems apparent: a sustainable urban development requires participation of local communities.

In European culture, participatory governance is a significant element of identity. Not all European countries have managed to develop effective tools for social inclusion and numerous key decisions are still taken by the inner circles of authorities and specialists. Countries which experienced restrictions in the process of democratic civil society building should do their utmost to implement effective methods of participatory governance. Therefore, developing a model of social participation should be the key goal of the spatial planning policies. Cities cannot afford losing the unlimited resources of the social potential of those who are personally and directly interested in the quality of their cities.

The intention of the authors and the aim of their efforts, expressed in this publication, is to inspire those who are responsible for the shape of our cities: officials of national and local administration, architects, urban planners, engineers, investors, and developers so that every specialist could always see the broadest possible context of the actions taken and balance the needs of all city users, the present and future ones.

This publication would be impossible without the inspiration, engagement and effort of many people and institutions. Special thanks are due to the author of the concept for Ecology Constructively project, the producer of all educational films presented throughout the conference course and enclosed with this book, Krzysztof Baczyński. My thanks also go to Maciej Borsa for his significant input as the conference chairman and facilitator of panel discussions as well as for his invaluable remarks on this publication. A big thank you must naturally also go to the other authors of this book: Jacek Godlewski, Janusz Korzeń, Dominika Brodowicz, and Katarzyna Sadowy for their factual input, creative performance as workshop facilitators and for their patience in the editorial work.

Let me express my special appreciation and thanks for the inspiration and uplifting support to all conference and workshops participants, the speakers and guests who were too many to mention by name. In total, nearly 200 participants made their notable contribution to the expertise and positive energy of the project called Ecology Constructively.

For the completion of the project and this resultant publication I am thankful to the whole team of administrators and contractors of key tasks, especially to Barbara Baczyńska, Joanna Kosiek, Sylwia Tokarska, Urszula Szabłowska, and also to Mariusz Cichocki-Kaiser, the creator of all graphics.

The realization of this project was also supported by institutions that deserve many thanks.

The Chamber of Polish Architects (IARP) supported the project in terms of the content and organization as well as publicity through a nationwide magazine IARP *Zawód: Architekt.* I would like to thank the architects delegated by the IARP: Łukasz Górzyński and Andrzej Poniewierka for their professional contribution, the members of the scientific committee of the conferences as well as Urszula Szabłowska for her organizational and promotional assistance.

The Institute for Territorial Development assisted us substantially and personally – I am grateful to two former Institute Directors, Janusz Korzeń and Maciej Borsa, as well as the present deputy Director for spatial planning, Magdalena Belof.

I am using this opportunity to express my gratitude to Collegium Mazovia Innovative University for project realization and for co-financing some of project activities.

The National Fund for Environmental Protection and Water Management made this project possible through financing project activities and supporting it from the substantive side. A big thank-you must go to Anna Wielgopolan, chief specialist in the Ecological Education Division of the Environmental Protection and Ecological Education Department for her valuable factual remarks to the project outputs.

PROJECT ECOLOGY CONSTRUCTIVELY Mariusz Szabłowski

Cities and urban matters addressed by frequently changing dignitaries could not bring themselves to run development policies that would leave sustainable and numerous mementoes or would not hinder the intentions of the generations to come. Eugenjusz Porębski¹

Why ecology

Our contemporary knowledge of ecology is comprehensive and widespread, however in Poland it is rarely translated into practical effects². Decision-making groups who create the urban space are driven by their own objectives and are unwilling to respect a diverse viewpoint or the common interest. The observation of Mr. Porębski, a remarkable science and technology promotor in the 1920s and 1930s, is still relevant.

The key decision-makers in terms of urban shape and future are public administration, investors and designers, especially architects and urban planners. They all act within one city space, but look at it from totally different angles. Based on their own studies, Kuhn and Garzillo notice that "systems within which they function are managed by disparate logic"⁴. The studies referred directly to the scientific community. With regard to the art of city building they can correspondingly refer to experts (planners) guided by knowledge in their activities.

According to the authors, experts recommend actions which reflect the findings of the studies, but the decision-makers prefer actions that fit the electoral timetable. For this reason, decisions that coincide with the social consensus determining political decisions do not always go hand in hand with experts' opinions. Every profession functions within its system and principles: experts in line with expertise and study findings, politicians in agreement with the rules of a political system while officials as stated in legal and organizational regulations. The legitimacy of actions taken in various structures requires identifying and understanding the aims and rules of all participants of the process.

¹Porębski E., Cuda Techniki (Engineering Wonders), Rocznik trzeci, Dom Książki Polskiej, Warszawa, 1931, p. 149.

² Miedziński M., Eco-Innovation Observatory, Eco-innovation in Poland. EIO Country, Profile, 201

³ http://ipsb.nina.gov.pl/index.php/a/eugeniusz-jan-porebski, access date 22.01.2016.

⁴ Informed Cities. European frameworks for local sustainability. The role of researchers, policy-makers, and European institutions in shaping local commitment. ICLEI, Freiburg, 2012, p. 12.

Commitment to sustainable development entails taking into consideration the needs and fears of all social groups, because only by joint efforts can they ensure social approval for more and more ambitious goals and the basis for their implementation.

Project goals

Ecology Constructively is a project about an exemplary exchange of experience and capturing the full city context. The key project goal is to promote sustainable development in groups that have a decisive role in the shape and future of urban areas. The main thesis of the project is an observation that the engagement of all the stakeholders in a given area is a precondition for serious urban actions of sustainable development, which paves the way for a necessary agreement.

Best practices

The project activities included the exhibit of 40 best practices from European countries that prove the above thesis. The poster boards were displayed in conference venues and discussed during the poster sessions. All posters can be accessed on the project website www.ekologiakonstruktywnie.pl as well as on the DVD attached to this hard copy. The most interesting and informative examples have been shown in 24 educational films. The others were described and illustrated on the poster boards.

Documentary films

The solutions presented in films have been selected to show the broadest possible spectrum of activities that could be copied in Poland. In the conference course, the participants (especially local administration representatives) often stressed numerous limitations that discourage from taking up bold projects and assessed some examples as impossible to implement. Having anticipated such an attitude, we demonstrated bottom-up initiatives in Kosovo which prove that good solutions do not need big money, and very modest realizations can be the source of pride for local communities. On the other hand, the initiative of Benevento authorities, a town located less than 100 kilometers off Naples, famous for breathtaking sights and municipal waste problems, shows how a systematic, long-term process of building social approval, especially the education of children, can effectively change the overall approach to the ecological waste separation system.

The films refer to selected subjects: regeneration of historic urban complexes and postindustrial areas, technologies and eco-innovations, social participation and urban areas management systems, transportation, smart cities, and community life in full harmony with ecological principles. However, each film illustrates the complexity of all these issues and proves that the combination of all aspects of city life form a basis for thinking of sustainable development. There is no a single system within a city that could exist independently of the others. Each of them affects the natural and anthropogenic environment, they influence one another, individual users and social groups and, more importantly, they impact present and future generations.

The conference course

Considerations over urban complexities framed the content of three academic conferences held in Wrocław, Gdańsk and Warsaw in 2015. Naturally, the considerations had to be narrowed down to selected fragments of sustainable development of urban areas. The result of all speeches in connection with the films, panel discussions and workshops can be found in this publication.

The formula of films presented alternately with lectures together with the poster exhibit around is worth a comment. Participants' feelings, in spite of an intensive eight-hour agenda, were very good. This helped create a productive atmosphere which turned out very fruitful on day two, during the workshop session.

Workshop session

The target of the workshop session was to put the participants in a role different from their daily professional occupation. Public administration officials became investors, investors turned into planners and the planners changed into officials. The teams of several participants had to break mental barriers, put themselves in other stakeholders' shoes, and look at the problem from a totally distant perspective than their practice, expertise and customs suggested. The films triggered lively debates in the first day of the conference, and this friendly atmosphere allowed the participants to open up to atypical experience and see that even the smallest concern is never black and white, but it has plentiful shadows, or even colors.

The original project assumption to systematize the work in groups (of ten people on average) and to collect a substantive material turned out impossible. Due to the autonomy the groups enjoyed, together with the spirit of complete engagement and fun from the professional role swap, the facilitators faced a dilemma whether to take an upstream position, against the dynamics of the group and force their initial agenda or to reach an overriding objective, i.e. to let everyone gain experience from the role swap in the process of urban planning. The decision taken immediately after the first workshop session started in Wrocław, came out right for the whole workshop course.

The experience of taking part in this exercise, despite prior doubts and unease of the participants, was assessed in evaluation questionnaires as highly valuable. The workshops have been documented in films and photographs where the most important feature visible is passionate engagement of the participants.

The conclusions from the workshop session based on the *put yourself in your adversary's shoes* principle are as follows: learning new professional patterns by experience, even in simplified experimental conditions, is a highly effective educational tool. Initially skeptical, anxious and hesitant attitudes promptly yield to openness and willingness to recognize the arguments of the opponent. The method of workshops together with subject-related session is definitely worth recommending.

Workshops for children

With a view to broadening the minds of the adult audience, the agenda of every conference included a side event for schoolchildren in the form of workshops related to architecture and urban planning. Frequently, specialists tend to forget how passionate and inspirational city planning can be, even in a small paper-constructed scale.

Differences in the children's works from the three cities are very interesting. Children's vision of the city is strongly affected by the surroundings in which they grow up. *The city of Wrocław* had a very organic form, firmly connected with the dense arrangement of rivers and canals, *the city of Gdańsk* was ecological, while *Warsaw* was based on the orthogonal layout with the axial scheme for public administration buildings. Therefore, the simple and obvious conclusion is that the cities will always be as good as their youth's education.

Conclusions for Urban Sustainable Development Strategies

Despite a limited spectrum of issues covered under the project, its complex structure helped hammer out general conclusions and recommendations for the sustainable development of urban areas.

It is necessary to adapt the Polish spatial planning system to contemporary challenges, especially in terms of social participation and the principles of sustainable development. Currently, regulations fail to adequately recognize sustainable development criteria, yet there are mechanisms that allow social inclusions and integrated activities beyond the frames of the spatial planning system. In practical terms, it is recommended to apply the model of integrated development planning through the realization of developmental tasks and projects. The fundamental suggestion is to integrate spatial and strategic planning, including areas and horizons broader than those required by law. On a local scale, the sustainable development is conditioned by social participation, whereas on a supra-local scale by the inclusion of interconnected outer systems – adjacent or neighboring functional and administrative areas.

The requirements of the present spatial planning system do not need to be treated as the formal minimum. For the strategy of urban sustainable development governance, it is recommended to **integrate the following domains**:

- spatial, economic and social planning,
- impacted areas and territories,
- political, social and civic aims,
- public, private and non-governmental sectors.

For each of these domains, the environment of urbanized areas is of crucial importance. It is vital to manage natural resources in a sustainable manner, especially in the future-oriented context. While meeting the present needs, future challenges cannot be disregarded: climate change, social and economic situations, or potential natural threats. The strategy for urban governance should **extend the timescale of planned development**, taking into account the needs of future generations, sustainable governance principles and possible future threats. Responsible urban governance is about predicting and preparing for changes.

Particularly in Poland, where social capital and civic engagement is relatively low, inclusive actions are highly recommended. Following the main thesis of this publication, it is social participation that forms the basis for sustainable development. Workshop sessions under the three conferences make a great example of an educational tool to promote and implement social participation and the dialogue between all stakeholders of the urban space.

Civic engagement and social inclusion are strongly recommended to be the driving force of urban sustainable development. They affect all four domains of the integrated sustainable governance (aims, areas, planning, and sectors), although in terms of areas its impact is rather limited because territorial integration is executed within administrative structures. However, it must be noted that residents, companies or NGOs may also be interested in issues that are not directly related to their impacted areas⁵.

Digital technologies provide data that facilitate city-related decisions and participatory governance. Access to data and bilateral communication (authorities vs. citizens) enable efficient, economic and common inclusion, e.g. in the form of participatory budgeting. The idea of a *Smart City* is about to close the experimental phase, but its great potential for the cities of tomorrow has been already proven. It may turn out that one of the key results of Smart Cities will modify the paradigm of development planning strategies. Smart Cities will decide by themselves about their future. A project recommendation is to **implement the Smart City idea** in the broadest possible scope.

Today a sustainable city means building a competitive edge of Europe in the global context. Development strategies that promote the assets, cultural heritage and special features of cities can have an added value. There is a strong relationship between innovation and the quality of urban space. Cities play the role of innovation incubators or catalysts for creativity and civic engagement. Better quality enhances their competitive advantage.

The resulting challenge for development management strategy can be defined as **raising urban quality**. The urban quality is made up of all the above elements: the natural environment, social relations, security, self-efficacy of the citizens, economic potential, social and technical infrastructure as well as historical and cultural resources. Living conditions in a city determine the behavior of its residents. Cities that provide

⁵ A construction project of Augustów bypass road may serve as an example https://pl.wikipedia.org/wiki/Obwodnica_Augustowa, access date 22.01.2016.

premium living conditions attract resourceful and creative people and prevent the migration of skilled and ambitious youth to more promising places. Cities must develop and react against the *Matthew effect* in order to remain competitive. Only a holistic approach can secure the balance of natural, social, economic, technical, and cultural elements. It requires major efforts of the authorities and the inclusion of communities and relevant stakeholders. Still, quality pays off, especially in the long run. And it is the quality and tomorrow, not the quantity and today that makes the substructure of sustainable development.

URBAN DEVELOPMENT MANAGEMENT

THE SOCIO-ECONOMIC DIMENSION OF SUSTAINABLE URBAN DEVELOPMENT Maciei Borsa

The forest does not belong to anyone – it is neither mine nor yours, nor ours but it is a sacred place that belongs to God. Stefan Żeromski, The Fir Forest

Introduction

For decades, starting in the 1960s, a lot was said about environmental issues, developing the already existing traditions of environmental protection. Two generations were brought up in a great sense of respect for the environment, which contributed to a significant reduction of the negative processes initiated by the Industrial Revolution and its negative impact on the environment. Environmentalists were considered as "priests of higher initiation" who introduced us to a new model of civilization. That kind of rather peculiar anointing and the abuse of the privileged position turned out to be one of the main obstacles stalling the development of the idea of sustainable development.



Figure 1 - The model "environment -> costs -> protection", author's own work

The model "environment -> **costs** -> protection", using the argument of "obligation" to protect the natural heritage, became the basis for building social awareness. Being a part of the education process, it made an important contribution towards reaching the consensus on the ecological issues. It was also a sound basis for creating new social relations such as a sense of identity, a sense of territorial identity or even for wider concepts of "homeland" in more or less broad territorial scope⁶.

Presenting environment related tasks as an obligation appeared to have boundaries that a major part of the society did not want to exceed⁷. Costs associated with its implementation came to be regarded as excessive in relation to the needs and "moral"

⁶ Borsa M., Chmielewski W., Głogowska M., Wrana K. Modele rozwoju zrównoważonego i procesy planowania na obszarach NATURA 2000 (Models of sustainable development and planning processes on NATURA 2000 sites), [in:]: Studia KPZK PAN (KPZK PAN Studies), vol. CLVII, p. 168-186, Warszawa 2014.

PCf. Brown K., Innovations for conservation and development [in:] Geographical Journal Volume 168, Issue 1, p. 6-17, March 2002.

obligations. The argument presenting natural protection in terms of obligation proved too weak to convince people to make sacrifices. The ideological approach turned out to be insufficient for the continuation and development of the ecological issues or for the paradigm of development. A concrete and practical approach does not deny the existing ideas but it rationalizes them by treating elements of the environment as a resource that contributes to growth. It was therefore necessary to look for a constructive approach towards environmental issues that would use more convincing arguments.



Figure 2 - The paradigm "environment -> resources -> development", author's own work

The paradigm "environment -> **resources** -> development" shows that it is not only advisable but worthwhile to protect the environment because, putting it simply, it pays off. Environmental resources may contribute to growth, for example as a basis for the development of tourism, as an essential component of development in the form of raw materials or location advantages for specific industries, leisure or simply for settlement. It is an important factor affecting the quality of life and a distinctive external image in today's globalized and unified world. In this constructive approach towards environmental issues we refer not to costly obligations but to practical effectiveness, since a better environment means more effective, cheaper and faster growth⁸.

Environmental conditions are conducive to the development associating it with the local potentials of the unique specifics. Such a model is called endogenous development. It helps build partnerships and agreements instead of competition because it differentiates the base to build profiles of development policies. Therefore, it reaches deeper levels of sources of sustainable development, replacing the monopoly of the power with a broader co-governing model. Pursuing common interests, the local environmental factors are growing on significance and cooperation within groups and organizations becomes more visible.

Philosophy - creative paradigm

The human being transforms the environment to suit his needs, applying its resources for different purposes and in different extents. The greatest achievement of man as a species is the city, seen as a cumulative effect of coordinated environmental changes. The city, as a phenomenon, is both a man-made and a processed environment that shapes human behavior and development. Knowledge and ability to create urban

⁸ Borsa M. - Polityka przestrzenna we wdrażaniu rozwoju zrównoważonego (Spatial policy in the process of implementation of sustainable development), [in:] Problemy rozwoju zrównoważonego w gospodarce regionalnej (Problems of sustainable development in regional economy), Warsaw School of Economics, study report 02/S/0013/11, directed by Z. Strzelecki, 2012.

environment is the domain of urban planning. This term is relatively new, it was used a hundred years ago, but the knowledge and the art behind this name has been used for at least 3,000 years. It has always been set in the cultural and technical reality of its time, its patterns have been changing, as each period has been discovering in the field its own trends, criticizing the previous patterns. This criticism was the basis for the development of the discipline, because it helped to adapt it to the new conditions and expectations of its time. Urban planning, as an art, has always been associated with architecture. The border between the two disciplines is not clearcut, though we intuitively know where it can be found.

The cultural pattern of modernist urban planning, the effects of which are currently the most visible in the urban space, was functionalism. It resulted primarily from the need to rationalize spatial solutions for the implementation of clearly defined social utility purposes. It applied to space at different levels - from design, to building, its surroundings, the city and even the region. "Functional' was the kitchen (the so-called "Frankfurt Kitchen" in 1927) and the city ("Functional Warsaw"1932). In both cases, efforts were made to optimize the technology to achieve the objectives in the most effective way, and these spaces were to serve these objectives.



Figure 3 – The Frankfurt kitchen designed by Margarete Schütte – Lihozky in 1926⁹

Figure 4 – Warsaw catchment area, Chmielewski J., Syrkus S., Functional Warsaw, Warsaw: The Society of Polish Town Planners, 1934, Fig X.

⁹ https://upload.wikimedia.org/wikipedia/commons/0/0b/Frankfurterkueche.jpg, access date 22.01.2016.

Postmodernism¹⁰, was born from a critique of modernism, though, of course, to a large extent it is its continuation. A critical look allows to adjust thinking in line with the spirit of the new era, and to repair the errors characterizing previous time. We can observe, to some extent, a return to tradition, often a little forgotten and neglected. Postmodernism removes the negative aspects of the functional approach, integrating space and supporting underestimated needs such as: social contacts, neighborhood, and spirit of a place ("genius loci"). In many cases, in terms of form, postmodernism is going back to the old, proved patterns, to the traditional language of urban planning.

The concept of "new urbanism"¹¹ is commonly identified with the postmodern composition, referring to the traditional urban forms such as streets, squares and quarters¹². This trend began in the United States as a critique of modernist doctrine of functional zoning. In Europe, it met a completely different ground; here cities are older, more diverse, with distinct historical roots, and most importantly, smaller and growing more slowly than in other parts of the world. Their form depends more on the mechanisms governing the transformation of cities, on the architectural shape of individual objects, than on a uniform plan. Moreover, what we have been experiencing recently with some surprise also in Poland involves a methodological crisis of urban design, based on the narrow paradigm of functional zoning. The new urbanism sees the city as a constantly evolving creature that involves multiple processes ongoing within the city and its surroundings. Urban design, in contrast to the design of objects, residents and entrepreneurs. Among them "circulates" an urban planner, trying to find a balance between many conflicting interests in the city.

"The new urbanism" imitates the traditional city in a very specific way – it replaces the ideas with practical tips and even design patterns that are "ready to use". They use the SmartCode¹³. Its characteristic features are traditional, but more integrated components of the space, enabling the implementation of some general objectives, such as:

- pedestrian access (isochrone 10 minutes), to restrict the use of cars or by pedestrian traffic on the local scale, or by rail transport in the field of external relations;
- more dense, dynamic and diverse way of development, with the so-called commingling of "functions", that is the use of land;
- references to the traditional form of planning quarters by forming small neighboring communities.

¹⁰ http://encyklopedia.pwn.pl/haslo/;3960928

[&]quot; http://pl.wikipedia.org/wiki/New_urbanism

¹² Charter of the New Urbanism, Congress for the New Urbanism 2011, translated by Mycielski M., Buczek G., Choynowski P., Urbanista, Warszawa 2005.

¹³ SmartCode version 9.2, The Town Paper Publisher, 2009.



Figure 5 - typical transformation from rural to urban zones - The Smart Code^{14.}

Projects of this type have the following main features:

- dominant role of pedestrian traffic, as a practice but also a kind of philosophy;
- traditional street network, the structure of the space created in a traditional "language" of urban planning, through streets and squares;
- combining functions, using a variety of forms, forming a mixed community

 rich and poor, old and young;
- diversified typology of housing and communities living in them;
- high quality facilities, public spaces and urban small architecture;
- restoration of traditional neighborhood, through the appropriate scale of construction and its form supporting social ties;
- increased density and compactness of the development, more efficient use of land than in a traditional Modernist development;
- "intelligent" transport adapted to the needs of inhabitants;
- attention paid to the quality of life understood as "happiness" in the place of residence;
- particular attention to the quality of the environment.

A particular importance of environmental issues in the model of new urbanism is reflected in:

- minimizing the negative impact on the environment during construction and operation procedures;
- respect for the value of nature and the use of environmentally friendly technologies (green technologies);
- high energy efficiency;
- reduced consumption of energy from traditional sources;
- increased share of local production, without distant commuting;
- living according to the principle of "more walking, less driving".

¹⁴ www.transect.org, access date 22.01.2016.

The concept of new urbanism comes from the United States, a country with a different urban landscape, resulting among other things from its "shorter" urban tradition. Approximately 4,000 spatial teams applying the rules in question have been established there, with half of them in the existing urban fabric. Solutions that the "new urbanism" tries to imitate in America are widespread in Europe, shaped by centuries. Here cities are smaller, they grow less rapidly or even shrink, they are less spectacular, but cheaper, more friendly, more beautiful, unique, with a long tradition and, above all, well-balanced: durable, quiet, mature, more resistant to crises. The question that arises here is whether the US model should be implemented in Europe and how Europe can benefit from it?

Technology - green recovery

Justifying environmental issues and the use of its resources, we should refer to the category of energy. Ecological concepts are in fact often very hermetic, incomprehensible and vaguely defined. Therefore, talking about energy makes sense because it makes it more understandable; everyone uses different forms of energy, buys it and knows that the issues related to it concern them. People also know that it is worth rationalizing its consumption and that it can be saved. Understanding is the basis for a constructive dialogue.

As consumers of energy, cities satisfy three main types of needs:

- life needs of the residents an increase in the living standards boosts energy consumption; we try to fight this type of increase in the energy demand by promoting new ways to meet the emerging needs and technological solutions for the control and optimization of energy consumption;
- 2. production and economic needs technological progress makes the energy consumption of the product fall and the technology too energy-intensive which makes it unprofitable; but on the other hand, the growing production generates greater energy consumption, but bringing tangible benefits;
- **3.** operating costs of urban organism depending largely on the functional and spatial structure of the city; regardless of what the city produces, what services it provides, its structure absorbs the energy that can be described as "idle gear energy"¹⁵.

This third group of needs is the biggest area of energy consumption and consumption of materials within the city. For example, material consumption in the construction and operation of roads is incomparably higher than the consumption of energy and materials in technological processes used in industry. The same rule applies to the energy consumption in transportation within the city, particularly the

¹⁵ Borsa M. - Metabolizm miasta (Metabolism of the city), [in:] Miasto idealne - miasto zrównoważone; Planowanie przestrzenne terenów zurbanizowanych i jego wpływ na ograniczenie skutków zmian klimatu (Ideal city - sustainable city; Spatial planning of urbanized areas and its impact on limiting climate change effects), Warsaw University 2015, p. 135-140.

one serving not to satisfy in a direct way the actual needs, for example searching of a parking space – more than 30% of the vehicles of average size in the city centre is in motion for this purpose.

Location of functions and quality of spatial relationships in the cities have an impact on energy consumption. Practical solutions can be sought through the model of "urban metabolism", which helps see many of the problems of development in terms of energy consumption. Traditionally, the term metabolism describes all transformation processes of matter and energy that occur in living cells, which is the basis of all biological phenomena. Metabolism allows cells to grow and reproduce, to manage its internal structure and to respond to external stimuli. Analogies to the processes occurring in cells can be seen also in other areas, including "living" organisms of another type, e.g. social¹⁶.

In the theory of the metabolism of cities it is important to distinguish between the cyclic and linear metabolisms – the more the transformation of matter and energy are part of a closed cycle (recycling), the higher the level of sustainable development. Comparisons between different cities helped determine how different factors, for example, spatial form, water management, thermal efficiency, communication systems, building technologies and ways of delivering public services, affect the metabolism of the city.

Metabolism has become a fashionable term in today's culture; we all know that normal metabolism is a prerequisite for health. We also know that the external manifestation of bad metabolism is only part of a disease. Bad metabolism is rooted deep in all structures of the body. Our cities are growing fat; putting the problem in this way, we help the bad metabolism of cities to be more easily recognized and condemned. Criteria for the urban metabolism can be used to optimize the functional and spatial structure of cities, similarly to the implementation of a "proper diet". Green transport and energy are important elements in the diet.

One of the effects of bad metabolism of the city is suburbanization, which can be regarded as a "fat accretion" of suburbia. It is characterized by:

- increasing number of urbanized areas mainly outside the node or even outside the city – faster than the growth of population and infrastructure;
- increasing number of areas with a low density of development and extensive population;
- growth of built-up areas per capita in residential areas and in general, higher than stemming from an increase of standards in the area.

¹⁶ Cf. Morgan G., Images of Organization, PWN, Warszawa 2015.

Symptoms of suburbanization as a kind of urban dysfunction are as follows:

- low density of development;
- lack of continuity in land use;
- uneven distribution of housing and work spaces;
- excessive local concentration of use, for both residential and work spaces;
- transport-consuming spatial organization, consisting mainly of excessive distance from the place of residence and work to services;
- too homogenous land use per unit of area;
- large distances between different forms of land use;
- polycentric model of local work-related and service centres¹⁷.

The effects of bad metabolism of the city is the dispersal of residential development, drop in the standard of services – including public services – loss of open spaces, negative impact on the environment, reduction of the quality of the living environment – landscape values, cultural and leisure activities. At the same time, we can observe a raise of the necessary public expenditures on infrastructure, public services and transport and an increase of material and energy consumption of the city, including a permanent loss of land. This process can be stopped by optimizing the flow and transformation of the matter and energy in the functioning of the city:

- reduction of the individual and total consumption;
- improvement of the energy efficiency;
- reduction of the amount of "waste"¹⁸.

You can also make the forms of urban development dependent on resource use – land, matter, energy, taking into account the influence of demographic changes, competition and technological innovation. This can be the basis for a "green recovery" of cities. The improvement of metabolism in this process is influenced by the spatial layout, diversity and functional typology of developments. They influence the use of land, energy and materials.

In the case of spatial layout, the use of **land** means the intensity of housing development and the fragmentation of the area has a negative impact on the environment. The use of **energy** depends on the intensity of housing development and on the level of the fragmentation of the area, which factors significantly increase transport distances. The use of **materials** is bigger with a lower intensity and a higher level of area fragmentation – due to infrastructure needs. It is therefore necessary to promote compactness and reduce area fragmentation in the spatial politics by applying smart solutions and increasing development density without losing the quality of the area.

¹⁷ Cf. Borsa M., Zrównoważony metabolizm miejski w scenariuszach rozwoju aglomeracji warszawskiej (Sustainable metabolism of the city in development plans of Warsaw), [in:] Przegląd Urbanistyczny VI/2014, p. 10-12.

¹⁸ Markowski T., Borsa M. - Metabolizm miasta (Metabolism of the city), [in:] Przegląd Komunalny 5/2015, p. 114

In terms of the functional differentiation, land use does not significantly depend on the functional system, that is dislocation of residential and work spaces. Energy consumption depends on the effective public transport ("green transport"), which requires a concentration of work spaces and high-density development. The spread of economic activities increases distances and a polycentric system of functions, on a small scale, can support the development of cycling and walking. The use of **materials** does not depend on functional diversity. The spatial policies should therefore first and foremost increase the density of development, taking into account public transport systems.

Regarding the typology of development, the use of land depends mainly on the type of development; buildings, roads and infrastructure cover more areas in housing developments with low intensity. The use of energy for heating purposes depends on the intensity of development, on the type, age and technical condition of buildings. The use of materials depends on the type of development – lower buildings may consume less material, but the infrastructure absorbs these savings; the age of the building has an impact on the use and re-use of materials. The spatial policy should therefore ensure high energy efficiency of developments.

The positive message for the green urban regeneration, resulting from the theory of urban metabolism, indicates that the energy efficiency of cities largely depends on the efficiency of the urban organism, its functional and spatial structure. The city can economically manage its resources such as land, materials and energy through more innovative spatial development policies. Ample opportunities in this area are provided by the optimization of forms of urban space planning, promoted by a greater awareness of citizens and authorities in fundamental issues of city metabolism, the rules and the scale of flows of matter and energy.

Politics - rules of ambition

In 2005 the European Union Member States signed the Bristol Accord, a document defining the characteristics of urban spaces which should be promoted in the framework of the EU policy¹⁹. The Accord sets out that a sustainable community should be:

- active, inclusive and safe fair, tolerant and cohesive with a strong local culture and other shared community activities;
- well run with effective and inclusive participation, representation and leadership;
- well connected with good transport services and communication linking people to jobs, schools, health and other services;
- well served with public, private, community and voluntary services that are appropriate to people's needs and accessible to all;
- environmentally sensitive providing places for people to live that are considerate of the environment;

¹⁹ UK Presidency EU Ministerial Informal on Sustainable Communities, Policy Papers, Office of the Deputy Prime Minister, London, March 2006.

- thriving with a flourishing, diverse and innovative local economy;
- well designed and built featuring quality development and natural environment;
- fair for everyone including those in other communities, now and in the future²⁰.

The road from political declaration to implementation requires effective tools of spatial policy, supporting the processes of design, integrated planning and multi-level governance. Public policy in this regard should be subsidiary and inclusive. Tools for promoting this policy are as follows:

- information, education and counselling;
- direct intervention (e.g. supervision services);
- economic measures (e.g. taxes, grants, subsidies);
- regulations and other types of legislation (top-down laws and other regulations that have a legal bearing);
- market based solutions (e.g. self-regulation of market players)²¹.

Information tools are the lowest rung of the "ladder of intervention", but these cannot be identified as "doing nothing". They require that the authorities monitor the situation, e.g. changes in space, and other effects of their own spatial policy, the activities of various entities in space as well as the dynamics of the conditions in which these activities and processes take place. Their effectiveness depends on a good, open organization and cooperation between institutions. This group of actions includes spatial analysis and research which help track the processes of change in space and form the basis of the theoretical, methodological and cognitive spatial policy. Information tools include measures not only to obtain information but also to collect, harmonize and share it. Only information that circulates and reaches all the interested parts or different types of recipients can be considered as a part of the implementation of spatial policy.

Organizational instruments, being organizational structures or other forms of action, having either a form of direct involvement or of a system of "incentives" regulating the behavior of other entities, will not be subject to the authorities. In this group of instruments we can find organizational structures and actions in the area of coordination and regulation performed by public administration, which determines the shape of space through decisions regarding planning and land use. The authorities must have a certain organizational strength to fulfill the spatial management policy; first of all, they need to be aware of what is happening. The monitoring should ensure a dynamic diagnosis of transformations, which consists of collecting information, processing it, alerting, and even predicting the hypothetical development of the situation in the absence of intervention. Operational

²⁰ Borsa M. - Informacja jako czynnik rozwoju (Information as a development factor), [in:] Gospodarka regionalna i lokalna w Polsce - czynniki i bariery (Regional and local economy in Poland), ed. Z. Strzelecki, Warsaw School of Economics 2011.

²¹ Borsa M. - Polityka przestrzenna w Polsce w latach 2004-2013 (Spatial policy in Poland 2004-2013), [in:] Wybrane regionalne i lokalne polityki publiczne w Polsce - 10 lat doświadczeń w warunkach członkostwa w Unii Europejskiej (Selected regional and local public policies in Poland - 10 years of EU membership), ed. Z. Strzelecki, Ministry of Infrastructure and Development, Warszawa 2015.

monitoring tool may be spatial information systems, which can create knowledge useful to the authorities, but which may also be an open knowledge base. Citizens, entities that manage the land and social organizations can be whistleblowers and can actively support the authorities.

Economic tools stimulate the implementation of socially desirable solutions by businesses or people. Within this group of these tools, major importance should be given to the current EU system of subsidies. It consists of strategies and "operational programs", managed by the central authorities (sectoral programs and coordination functions of the entire system) and strategies and regional operational programs managed by regional authorities. Other economic tools include a traditional tax relief regarding the property tax, which is a local tax levied on buildings and land. The amount of the tax is determined by the municipality, under the guotas stipulated by the law. At the national level, it is possible to introduce tax reliefs in income tax and to establish areas of preferential tax status, having a significant impact on the economic development of the surrounding area and the transformation of the space itself. Investment tools, mainly direct public investments, fulfill social needs, but also significantly affect investment behaviors of different entities outside the public sector. This mainly concerns investments in the field of technical and social infrastructure. Today, many investments are implemented through various operational programs related to the distribution of EU funds; depending on the level of reference, these instruments can be regarded as economic or investment tools. We observe a return to the instrument of the territorial contract, stipulated by the government and the local authorities, in order to co-finance from the state budget specific investment projects requested by local governments. It systematically increases the importance of the spatial dimension in the distribution of investment funds, a tool proposed by the European Union. Local authorities are encouraged to undertake joint initiatives, regardless of the official administrative divisions, in the form of, among others, Integrated Territorial Investments.

The legal and regulatory tools that form the basis for the functioning of the active policy responsible for shaping the space, or directly regulate the space management in particular areas. Creating a framework system is available to the authorities of higher levels, e.g. government; furthermore, the regional and local authorities have limited but unused capacities in this regard. Lower tiers of public authorities, especially local ones, have sufficient command and prohibition means that regulate different ways of space management in the form of documents or planning decisions. With regard to single properties, local law provisions are applied. These are determined by municipal authorities and their task is to protect the public interest and to preserve normal relations between the activities of various entities operating in the area.

Summary

In summary, it would be interesting to initiate a general debate on the place of Polish urban planning, or more broadly urbanistic thought, in a global context. A specific character of the challenges means that it develops in its own cycle, "out-of-phase" in

relation to what is happening in the leading countries of the world. This opinion can be supported e.g. by Jane Jacobs' book entitled *The Death and Life* of Great American Cities, recently published in Poland, 54 years after its date of publication in the USA. The book was published in response to the 1960 Lower Manhattan Expressway project, improving the communication system of the city of New York at the expense of displacement of half a million inhabitants. Jacobs dispute with the main urban planner Robert Moses was so significant that it became a subject of books and, after years, of an opera. A quotation taken directly from Jacobs book became the motto of the 2014 World Urban Forum in Colombia: "The city has something to offer to everyone, since it is created by everyone".

In the same year in Poland some legislative changes were made to eliminate a professional self-government, the National Chamber of Urban Planners, which some emotionally compared with the "abolition" of the profession. It should be emphasized that the essence of existence of professional bodies is to guarantee the quality of professional services. This is due to the fact that such services are provided in a high asymmetry of knowledge between the providers and recipients of the service, which requires confidence in the competence of the specialist. A proper evaluation of the professional service is only possible by other professionals. Therefore, the existence of professional bodies is a norm and standard in developed countries. This applies to the so-called professions of public trust²². A good example of an asymmetrical relationship is the medical profession – the patient agrees to anesthesia, entrusting his life to the surgeon and anesthetist. While planners do not "operate on a live patient," the changes in the urban tissue and interference in the body of the city also involve an enormous responsibility. Decisions regarding urban planning may affect millions of people for hundreds of years.

It is significant that the profession was defined by the spatial planning and development act, specifying the scope and procedures in matters of allocation of land for specific purposes, in the form of areas with a uniform use of land. Such actions resulted from the methodology questioned by Jacobs. Apart from the distance in time and objective obstacles to the transfer of ideas from the 1960s, particular attention should be drawn to the anachronistic methodology of spatial planning as an instrument of public policy in Poland²³. Its restitution, with the use of a new methodological approach and paradigm based on the principles of sustainable development, is necessary. In this restitution, ecological issues may have their constructive participation.

Those changes should focus on raising environmental awareness, in particular in environments affecting the investment processes, especially in the cities. An adequate circulation of information can ensure the sustainability of spatial solutions, resulting – among other things – from the continuity of the concept and implemented solutions.

²² Cf. Samorząd zawodowy w demokratycznym państwie prawa (Professional self-government in a democratic country), Senate of the Republic of Poland, Warszawa 2014.

²³ Belof M., Borsa M. Planning for Real - po drabinie partycypacji społecznej (Planning for Real - on the social ladder of participation), Przegląd Urbanistyczny 2015.

Sustainable development should not consist in demolishing and building from scratch; in most cases creation has a strongly adaptive character that respects the past. In this model, an urban planner becomes a counselor more than an "autonomous" creator. This is linked to the growing number of needs that are defined in the debate on the directions of development. These are defined as higher needs, of a more subjective type²⁴. This changes the behavior of the authorities, artists, architects, and urban planners; a technical approach that is effective in the case of the primary and objective needs, gives way to a more social approach that supports less obvious choices²⁵.

Therefore there is an increasing need for an efficient circulation of information, confrontation of ideas and social inclusion²⁶. A constructive ecological approach requires for the communities to get involved and to be aware of the consequences of their own decisions. This increases the scope of public participation in deciding on the directions of development. The society expects that the city should be "theirs" instead of "for them"²⁷. Sustainable development also requires a balance between the various interests: of residents in defining their needs and attitudes, of businesses taking social responsibility into account, of developers integrating activities in space and cooperating with the public sector as well as of citizens and public authorities shaping the local development policies. Partnerships between these four groups are essential for a real implementation of the principles of sustainable development and therefore for a constructive ecological approach.

²⁴ Borsa M., Dudziuk-Dudzik A. Na rozdrożu wzajemnych oczekiwań – partnerstwa w procesach rewitalizacji (On the crossroads of mutual expectations – partnerships in revitalization processes), transl. Sokołowska, University of Economics in Wrocław 2015.

²⁵ Belof M., Borsa M. Place based policies vs. place based politics - functional areas and the practice of multilevel governance, Regional Studies Association European Conference 2014, Izmir.

²⁶ Cf. Borsa M. - Wyrównywanie szans małych miast w procesie rewitalizacji (Equalization of opportunities of small towns in the process of revitalization), [in:] Przegląd Komunalny 12/2014.

²⁷ Markowski T., Borsa M. Miasto - dla nas czy nasze (City - for us or ours), [in:] Przegląd Komunalny 1/2015, p. 82.

MANAGING URBAN SPACE Janusz Korzeń

Connectors between urbanised and non-urbanised areas

The functional and spatial structure of urban areas is determined primarily by natural elements (geological structure, layout of the land, land cover, hydrographic system), cultural heritage (historical settlement network besides preserved historical building units and communication links) and current investment of various nature. Urban areas are consolidated by natural elements with the predominance of river valleys forming basic ecological corridors as well as vast open, agricultural and forest areas. They are also linked by technical connectors with the main role being given to transport systems and technical utilities. Spatial resources of cities are complemented by their well-developed network of social, economic and institutional relations.

The patterns of rural and urban settlement, especially in the western regions of Poland, were already established in the Middle Ages. They underwent major changes after the Second World War, specifically over the last 50 years, when the role of urban areas, and large cities in particular, became more pronounced with dynamically growing agglomeration and metropolitan areas growing around them. Service and residential areas were expanded, mainly by the construction of multi-family units. New production plants and shopping centres were put up. This gave rise to negative processes of uncontrolled suburbanisation, resulting in adverse deformations of the spatial structure of these areas and many negative spatial phenomena.

Such processes many be observed in the case of two agglomerations: Poznań and Wrocław. Both are undergoing a gradual metropolisation and intensive socio-economic changes, gaining advantage over other urban areas in both regions. But they are also rife with problems typical of rapidly developing areas located around large cities. The problems are caused by the increased investment pressure put on neighbouring municipalities compared to the central areas and the construction of new housing estates with no community facilities and poor public transport access to the so-called "core". This leads to the prominence of scattered building projects, landscape changes and a bigger share of private means of transport.

Despite attempts to coordinate and rationalise these processes, they remain spontaneous and uncontrollable, which may upset the balance of spatial planning in the entire area, aggravate spatial chaos and contribute to the fragmentation of environmentally valuable areas. There are also growing problems with improving access to jobs and services, especially in the case of suburban residents, despite markedly better transport links between Poznań or Wrocław and their immediate and wider vicinity.

Besides transforming the internal structure of the central areas through their territorial expansion and establishing new functional connections with the surroundings, such processes also significantly alter nearby rural areas. What emerges is a multifunctional

consumption space where agricultural activity is pushed out by housing functions, which gain primary importance; by contrast, production and service functions are scarce or absent. This results in serious changes to the structure and forms of managing a historically developed rural landscape. The process is illustrated by two synthetic figures showing the current state and future directions in the development of the Poznań and Wrocław agglomerations. The figures were developed as part of analytical projects led by Elżbieta Raszeja in Poznań²⁸ and Professor Tomasz Ossowicz in Wrocław²⁹.



Figure 6 - Directions in spatial development of the Poznań agglomeration



Figure 7 - Directions in spatial development of the Wrocław agglomeration

The pressure to expand large Polish cities onto rural areas and the related processes of urban sprawl not only destroy historical settlement structures and deform traditional village plans, but also overburden existing transport services and infrastructure. With the growing domination of private means of transport, public transport systems still lag behind. Nor is there sufficient coordination and resources to modernise and expand the road and railway networks.

When giving shape and direction to spatial planning in urban areas with individually developed urban structures dominated by well-established downtown areas, it is necessary to link such areas with their economic base, the settlements growing around them as well as the surrounding nature and landscape. The directions in the

²⁸ Raszeja E., Krajobraz i dziedzictwo kulturowe wsi w aglomeracji poznańskiej (Landscape and Cultural Heritage of Villages in the Poznań Agglomeration), Przegląd Urbanistyczny, Vol. II, Wrocław 2010.

²⁹ Ossowicz T. i Korzeń J., Analizy i studia dla Wrocławskiego Obszaru Metropolitalnego (Analyses and Studies for the Wrocław Metropolitan Area), Przegląd Urbanistyczny, Vol. II, Wrocław 2009.

development of the areas are determined on the basis of fundamental strategic and spatial planning documents, which are still not integrated sufficiently with similar documents in the neighbouring municipalities.

The biggest problem of the relations between urbanised and non-urbanised areas is that their development is not harmonised, whereas the activities which could be carried out in properly structured functional areas are not coordinated. The need to create such functional areas is the premise of the new National Spatial Planning Concept³⁰ and of a number of regional documents devoted to strategic and spatial planning.

Integrating urban and regional planning

Municipal and regional planning should be understood and managed as key elements in development policies treated as the total of interconnected public activities undertaken and carried out with the aim of ensuring durable, sustainable development as well as social and economic cohesion at the local and regional levels. The local level is dominated by local governments engaged in municipal planning covering tasks focused on meeting on-going needs of residents and making necessary investments and repairs of facilities, grids and municipal equipment. Such tasks only partially involve decisions taken by a number of spatially linked municipalities or initiatives undertaken and carried out at the supra-local level by regional governments or central government institutions.

Urban planning in individual cities and regional planning, especially in functional areas, should be designed to achieve sustainable development goals set in the relevant documents of strategic and spatial planning and should result in the integration of the socio-economic, spatial and institutional spheres. Furthermore, it is necessary to take account of the conditions and requirements of spatial governance, improvement of the quality of life, maintaining environmental balance, protection of natural and cultural assets and the principles of the rational use of space. The goals should also include the following objectives of the National Regional Development Strategy³¹:

- supporting the growth of regional competitiveness,
- building territorial cohesion and combating marginalisation,
- creating conditions for efficient and effective implementation of development initiatives based on partnerships.

Development policies as well as urban and regional planning should centre around implementing growth initiatives and projects defined in the planning documents mentioned above supported by correctly functioning existing technical structures. This should be seen specifically in the programming and implementation of the so-called "flagship projects" giving rise to more far-reaching changes which often go beyond their immediate location.

³⁰ National Spatial Development Concept 2030, MP of 2012 item 252 of 27 April 2012.

³¹ National Regional Development Strategy for 2010-2020 – Regions, cities, rural areas, RM, Warsaw 2010.

A development policy thus understood could lead to the practical implementation of sustainable development principles at the regional and local levels as part of a systemic and integrated development planning through carrying out development tasks and projects (in accordance with the model from Fig. 3). The suggested model was developed in the course of the author's own research focused on the problems of integrating the tools of spatial and socio-economic planning³².



Figure 8 - System of implementing principles of sustainable development through putting development projects into practice

³² Korzeń J., Integracja narzędzi planowania przestrzennego i społeczno-gospodarczego dla zrównoważonego rozwoju (Integrating Spatial and Socio-Economic Planning Tools for Sustainable Development), [in:] Urbanistyka w działaniu – teoria i praktyka (Urban Planning in Action – Theory and Practice), Urbanista, Warsaw 2006.

INTEGRATED DEVELOPMENT POLICY AND STRATEGIES FOR CITIES Janusz Korzeń

Development policy and spatial development - basic concepts

In order to present current tendencies in attaining cohesion and integration of development planning and implementation tools, some definitions of basic concepts need to be proposed The definitions must cover their terms in a holistic way as the terms are subject to specific regularities. Such an approach is necessary if we are to discuss integrated development strategies, integrated investment strategies included.

In an original attempt to extend the terms already known and used in theory and practice³³ – terms that are variously defined in legal regulations and other publications – I suggest the following definitions:

- sustainable development a key term for a comprehensive approach to the problems in question should be seen as a development which is durable, stable and self-sustainable. It can be achieved by integrated political, social and economic actions undertaken to sustain an environmental balance and to maintain durability of environmental processes within areas of different size and structure. The goal of sustainable development is to ensure economic and social development with no harm to nature or its components. It takes into account the necessity of self-restraint and the needs of present and future society;
- development policy it should be understood as a whole range of public actions undertaken and carried out in order to ensure sustainable development and social, economic, regional, and spatial cohesion. The actions aim at attaining quantitative growth and qualitative progress as well as at increasing competitiveness and creating new jobs. Development policy focuses on setting aims and development directions in a territorial context. It integrates social and economic, spatial and institutional dimensions alongside the requirements of spatial order and rational space management, quality of life improvement, maintaining balance in natural systems and protecting natural and cultural resources;
- spatial planning refers to the processes and actions undertaken within the development policy to influence land use management, its harmonious development and transformations. It serves for the needs of the social and economic progress and it performs the following actions in a territorial context: coordinative and regulatory, investment, evaluative and monitoring, alongside the requirements of spatial order and rational space management, quality of life improvement, maintaining balance in natural systems and protecting natural and cultural resources.

³³ Korzeń J., Zasady i metody integracji planowania przestrzennego i społeczno-gospodarczego dla zrównoważonego rozwoju, (unpublished), 2015.
A set of urban policies and the National Urban Policy

The basic set of policies related to the management of cities consists of specialized "urban" policies developed by public authorities and applied at the local level or in areas of collaboration between communes. They include selected areas of the management, such as spatial, ecological, revitalizing, housing, transport, social and economic policies as well as the protection of monuments. In overall terms, these policies determine how to take into account the interests of local communities and the obligations of public authorities related to the implementation of their political, social, economic and institutional functions performed in relation to the territory which is administratively assigned to them. Most often they are not consistent or fully integrated with the basic documents of spatial and strategic planning in cities.

A policy aimed at targeting state and regional actions in this area should promote effective and integrated management of urban policies. The basic document which defines them is the National Urban Policy 2023 adopted by the Council of Ministers in October 2015³⁴. In the document, the policy is defined as *planned activities of the government which concern urban policy and take into account the objectives and directions set out in the medium-term national development strategy and the national strategy of regional development. It is intended for deliberate, territorially targeted activity of the state for sustainable development of cities and their functional areas as well as the use of their potentials in the processes of national development.*

National Urban Policy aims to:

- create conditions for efficient and effective partnership development management in urban areas, particularly in metropolitan areas;
- support sustainable urban development, including the prevention of negative phenomena related to uncontrolled suburbanization;
- restore the capacity for development through revitalization of urban areas which are degraded socially, economically and physically;
- improve the competitiveness and ability of major urban centers to create development, growth and employment;
- support the development of sub-regional and local urban centres, especially in problematic areas of regional policy (...) by strengthening their function and preventing their economic decline³⁵.

Each of the aforementioned purposes has its proper spatial context, and two of them, the second and the third one, are crucially associated with the development of spatial and urban planning. Their implementation falls largely with the previously proposed definitions of development policy and spatial planning. Three of the remaining objectives are components of strategic planning (socio-economic). The basic

³⁴ National Urban Policy 2023, Ministry of Infrastructure and Development, Warsaw 2015.
³⁵ Ibidem.

tool for their implementation should comprise consistent, integrated tools of urban policy and especially studies of conditions and directions of spatial development of municipalities and strategies for their development.

Legislation for urban areas

The implementers of spatial planning policies carried out within a specific area are public authorities applying the measures specified in the Act on spatial planning and development³⁶, and its main elements are:

- at the national level the concept of spatial development of the country as well as analyses and studies, concepts and programs relating to the above-mentioned scope and reports on the state of development of the country;
- at the regional level spatial development plans of provinces and metropolitan areas, analyses, studies, concepts and programs relating to the above issues and reports on the state of province development;
- at the local level studies on conditions and directions of urban planning (almost all communes in Poland, with few exceptions, have access to such studies), local spatial development plans (they were available at the end of 2013 for approx. 28.6% of the country area, and the increase in the surface covered by their findings amounted in years 2004-2013 to an annual average year of approx. 1.3%, and in the last 2 years only to approx. 0.8%) as well as the decisions to establish the conditions of building and land development (issued in the absence of scale plans in 2013 in the amount of about 150,000, which is widely perceived as the main cause of deepening the process of destruction of the spatial structure of the country)³⁷.

The current state of spatial management has been evaluated very negatively in many speeches and publications in recent years, and the worrying trend in this field still cannot be overcome. These evaluations were included, among others, in the *Report* on the status of spatial development of the country³⁸, as well as in the diagnostic part of the new *Concept of spatial development of the country³⁹*. The current spatial planning system is not functioning properly, and the repeated attempts to repair it have failed. Its efficiency is worse in size than is commonly estimated, which is emphasized, among others, by Adam Kowalewski⁴⁰, stating that *due to the irrational, often faulty spatial policy, the benefits of political transformation are not properly reflected in the existing spatial order, and often cause its deterioration, with all its consequences, both social and economic.*

To eliminate these anomalies, several attempts have been made in recent years in order to introduce amendments to existing legislation for spatial planning. The last of these has been developed recently and a project of the so-called "small" amendment

³⁶ Act of 27 March 2003 on Spatial Planning and Development (Journal of Laws of 2003 No. 80, item. 717, as amended).

³⁷ Śleszyński P., Planowanie przestrzenne w gminach w 2013 r., Przegląd Urbanistyczny vol. X, Warsaw 2015.

³⁸ Polish space – Report on the state of national spatial development, MB, Warsaw 2007.

³⁹ The concept of spatial development of the country 2030, MP of 2012, item 252 of 27 April 2012.

⁴⁰ Kowalewski A., Bończak-Kucharczyk E., Gorgoń J., Kogut J., Ornoch-Tabędzka M., Zaniewska H., Z. Ziobrowski Z. and Żyłka J., Bariery i problemy gospodarki przestrzennej w Polsce – Raport Krajowego Sekretariatu "Habitat", Warsaw 2003.

to the current law⁴¹, developed by the Ministry of Infrastructure and Development, is currently being consulted. It assumes, for instance, the strengthening of the connection between spatial policy of municipalities with their real needs and capabilities, the introduction of general principles of spatial planning, derived from the idea of a compact and low-carbon city, as well as enabling simultaneous work on projects of local studies and local plan in order to accelerate their adoption. An essential element of the planned changes are the limitation of the possibility to issue a decision to establish the conditions for land development and link them with the spatial policy of municipalities, defined in the studies, and the increase in social control in the process of planning.

Real estates and management

The causes of the current weakness of spatial planning, resulting in deepening chaos in space and negative economic, social and environmental effects are the excessive liberalism in the conduct of land and real estate management and appearing speculative trends, related to changes in land prices which are low before making them available for potential development and high after acquiring such a qualification. Spatial planning in Poland which results from these processes and is associated with them to a great extent does not fully serve its purpose, as it does not effectively regulate settlement, urbanisation and investment processes. This is an expression of ineffective use of space assets, a limited resource, resulting in hindering its future rational utilisation.

The economy led in this way is expressed through the phenomenon of spontaneous, chaotic expansion of residential development in rural and open areas, often valuable in terms of nature and landscape, causing a decrease in the attractiveness of urban areas, depopulation of city centres and destruction of ecological systems of areas occupied for the needs of new "urbanization". Many municipalities already bear, or will bear, the cost of purchase of land for roads and construction development costs of technical infrastructure in areas that will never be built which were determined as a result of repeatedly overvalued balances of field needs for the housing development and in extensively built-up areas. A shocking assessment of the scale of these phenomena was presented recently in a special expert *Report on the economic losses and social costs of uncontrolled urbanization in Poland*⁴².

Urban planning and urban policies

Urban planning is carried out within the framework of spatial planning and serves the space distribution and time coordination of development activities as well as the adoption of detailed arrangements and rules for land development and its use for the implementation of tasks aimed at modernisation and investment at the local level. Thanks to them, visions of change in space are implemented by identifying ways of urban and architectural design of selected areas and creating urban composition, aimed

⁴¹ A draft amendment to the Act on spatial planning and development and certain other acts, Ministry of Infrastructure and development, Warsaw 2015.

⁴² Kowalewski A., Mordasiewicz J., Osiatyński J., Regulski J., Stępień J., Śleszyński P., Report on the economic losses and social costs of uncontrolled urbanization in Poland, FRDL and IGiPZ PAN, Warsaw 2013.

at improving and expanding the spatial structures, spatial order and living conditions and implementing integrated urban development strategies.

The practice is, however, often different and urban design serves the implementation of isolated projects, not focusing on creating spatially coherent structures, which usually leads to meeting the current investment needs that are not always consistent with the principles of sustainable and integrated development planning.

Cooperation between cities

Improvement of the situation in this area is expected in the development and initiation of inter-municipal cooperation, especially in urban functional areas and metropolitan agglomerations, which, as a matter of integrated strategic and spatial planning, were introduced in the above-mentioned *Concept of spatial development of the country*⁴³. Experience in this field is still very scarce, there are few positive examples, the enthusiasm weakened in terms of making local authorities organise themselves as part of metropolitan areas planned to be constructed. The government policy of pro-integration provides new incentives. This policy is associated with the initiation of preparations for the comprehensive development projects recognized in the framework of the so-called *Integrated Territorial Investments*⁴⁴.

In order to support and accordingly prepare such projects, there is a need for integrated planning of territorial development, understood as the management of sustainable development of the area in the framework of social, economic and spatial policies and implementation of the objectives and tasks of development adopted in the documents prepared for them. The establishment of rules concerning the acquisition of socio-economic, regional and spatial cohesion, improvement of effectiveness and competitiveness of the economy and the ways of development, land utilisation and implementation of modernisation and investment plans set for the regional and local levels should also serve this purpose.

Development planning integration

The state of planning and development of space in Poland has been severely criticised for many years, which is expressed in many publications and speeches. Also pointed out are evaluations such as the one in the *Report on the state of spatial development of the country*⁴⁵, or the one in the diagnostic part of the Concept of spatial development of the country 2030⁴⁶ One of the major causes of defectively conducted spatial development is believed to be the weakness of the connection between spatial planning and socio-economic development, which is also deepened by the beliefs of many experts and decision-making communities, educated in the former command system, about the fundamental superiority of socio-economic planning over spatial planning, and not about their necessary interdependence.

⁴³ See footnote 23

⁴⁴ The rules of taking into account the urban dimension of EU cohesion policy, including the implementation of the Integrated Territorial Investment, Ministry of Regional Development, Warsaw 2012.

⁴⁵ Polish space - Report on the state of national spatial development, MB, Warsaw 2007.

⁴⁶ The concept of spatial development of the country 2030, MP of 2012, item 252 of 27 April 2012.

When, as shown e.g. by the National Urban Policy, Polish cities face major decisions relating to the investment policy (...) and must respond to the still very significant needs for investment in infrastructure and housing – the integration and concentration of activities for the implementation of these decisions seems to be the dictated by temporary needs. This is largely emphasized in the literature on the subject, in many governmental documents, including the Action Plan of the National Crisis Management Plan 2030⁴⁷. The plan is intended to "implement" the National Spatial Planning Concept 2030 in order to exploit the potential of the country and regions more effectively, which results from the conditions and area connections through the development of an integrated, multi-layer, coordinated system of development planning and abandoning the duality of spatial and socio-economic development.

It can be further assumed that the integration of spatial and socio-economic development described in this way should be treated as a public activity of continuous nature, striving for the implementation of its objectives in the framework of sustainable development policy and for integration of the equitably treated systems of spatial and socio-economic development. It should also include the integration of systems for programming, planning, monitoring and managing the development of the territory and the creation of organizational structures capable of efficient coordination of public and private entities for the conduct of a coherent development planning as well as implementation tasks and development projects.

Rules of development planning integration

One can specify the principles that should guide the practical implementation of urban development of this kind of spatial and strategic planning, already described in the literature a long time ago⁴⁸, and emphasizing, among others, the need to:

- maintain equality between both areas of planning and expand their relations;
- apply harmonized standards, measures and indicators of sustainable development;
- conduct comprehensive works on planning documents in close cooperation with the institutions responsible for their preparation, teams of authors and their performance in a similar period of time or at the same time;
- create new norms and standards of integrated planning.

One example of searching for such a formula of integrated development planning both at local and regional level are the "Model principles of integrated programming and management of sustainable development of the province", developed as part of the project of Lower Silesian Province⁴⁹ development, as shown in the figure below:

⁴⁷ Action Plan of the National Crisis Management Plan 2030, Warsaw 2013.

⁴⁸ Korzeń J., Integration of tools for spatial and strategic planning, *Urbanista* no. 4/04, Warsaw 2004.

⁴⁹ The change in the spatial development plan of Lower Silesian Province, Korzeń J. and Wałęga A. et al., WBU – IRT, Wrocław 2014.





Integrated investment strategies and strategic projects

The basic tools of integrated development planning should consist of integrated, comprehensive investment strategies and strategic projects arising out of them. They are already part of the regional operational programs as Integrated Territorial Investments⁵⁰, supported by the funds from the European Regional Development Fund and European Social Fund, as well as by national operational programs.

Such strategies and the above-mentioned projects must be directed at the challenges of urban areas: economic, environmental, climatic and social challenges, as well as focused on activities in an integrated way in the area of specific features and devel-

⁵⁰ The rules of taking into account the urban dimension of EU cohesion policy, including the implementation of the Integrated Territorial Investment, Ministry of Regional Development, Warsaw 2012.

opment needs or areas which require intervention. These projects should be treated as comprehensive sets of actions aimed at coherent and coordinated implementation of priority tasks with specified organizational, financial and technical parameters identified for implementation as part of the sustainable development policy.

Strategic projects of various nature (area, network, linear or point nature) are characterized by complexity, large-scale, complementarity with the other actions or programs, a synergy effect on the development and consideration of requirements of best practices in the specific field, and the basis for their implementation are the findings contained in integrated spatial plans and development strategies as well as other planning documents related to them. Their implementation will have a significant influence on the acquisition of the desired changes in the spatial, social and economic structure of a given territory and on the introduction of the idea of sustainable development and progress while creating spatial order.

INTEGRATED ACTIVITIES IN THE CONTEXT OF URBAN DEVELOPMENT Jacek Godlewski

A city is characterized by diverse interests and continuous actions taken by various stakeholders. Urban development can be defined as changes in the economy, social system, environment, and spatial arrangement, which make up the spatial management as a conscious and intentional activity to meet urban development goals. Cities are the driving force of the European economy and can catalyze creativity and innovation across the European Union. Statistically, approximately 68% of the population live in metropolitan areas and generate 67% of the GDP. The significance of cities has been noted in strategic documents such as the *National Strategy for Regional Development 2010–2020 or the Concept of National Urban Planning and Management 2030*, which casts cities in the role of key areas for strategic intervention, i.e. the targets of concentrated pro-growth activities.

Factors that shape urban arrangement include: demographics, shrinking cities with aging population or on the contrary, a rapid increase in area and population of young residents, expansion of multicultural communities and economic crisis-related elements⁵¹.

Various dimensions of the urban life – environmental, economic, social, and cultural – are interconnected and a successful development of urban areas can be achieved only by the integrated approach. Effective urban management needs allocated renovation means to be linked with funds for education, economic growth, social inclusion and environmental protection. Also, it is necessary to establish a strong partnership between local communities, civil society, local economy, and all-level authority officials. It is of crucial importance in view of challenges that European cities are facing: aging societies⁵², economic stagnation in terms of new jobs and social progress, as well as the effects of climate changes. Successful response to these challenges will pave the way for smart and sustainable growth conducive to social inclusion, stipulated in the *Europe 2020 Strategy*.

The 2014–2020 Cohesion Policy is packed with various tools dedicated to specific types of territories, including cities and urban functional areas. It derives from a territorial approach, which is based on the assumption that tailor-made interventions, appropriate for a given territorial type, are more effective than traditional ones. The territorial approach which puts an end to viewing an area through the prism of administrative limits, holds internal capacities, challenges and growth barriers.

⁵¹ Why Urban planning System Must Change [w:] "Urban World", vol. 1 Issue 4, UN-HABITAT For a Better Urban Future, 2009.

⁵² For example, according to Eurostat forecasts (EuroPop2013) after 2024 the number of people over age 65 will exceed 20% of the Polish population, while after 2060 - 33%. See also: Waligórska M., Kostrzewa Z., Potyra M., Rutkowska L., Prognoza ludności na lata 2014-2050 (Population forecasts 2014-2050), Zakład Wydawnictw Statystycznych, Warsaw, 2014, p. 21.

The scope of integrated actions for the sustainable development of urban areas should be based on such key issues as:

- natural environment with the following targets: protecting resources, maintaining the balance between available resources and planned level of development, finding cross-border and interregional solutions to water-related problems, upholding biodiversity, preserving natural structures, promoting energy efficiency, encouraging smart energy management and renewable energy sources, limiting transport intensity, reducing the emission of greenhouse gases, recommending low-emission strategies for all territories, especially for urban areas, plus supporting sustainable, multi-modal urban mobility;
- urban environment with the following targets: urban regeneration, reclamation
 of post-industrial areas, reduction of air pollution and noise levels, renewal
 in terms of the substance, society and economy of poor communities living
 in urban and rural areas;
- cultural environment with the following targets: heritage protection, reinforcing identity, incorporating the culture in development projects;
- transportation with the following targets: accessibility as a key factor for growth and competitiveness, balancing the spatial development and the expansion of transportation networks, improvement of public transport;
- economy with the following targets: stimulating growth, adapting growth trends to the specifics of a given area, creating cooperation networks and clusters;
- social challenges with the following targets: reducing the trends of social exclusion, combating unemployment and social problems;
- housing with the following targets: analyses, balancing the needs and housing stock in local and regional plans, weighing the housing stock and the job market;
- regeneration with the following targets: limiting an excessive expansion of urbanized areas, better use of urbanized areas, cultural heritage protection, counteracting the processes of social degradation.

Integrated activities for sustainable development of urban areas will be implemented in Poland through the Integrated Territorial Investments under the Cohesion Fund, financed by the European Regional Development Fund and the European Social Fund within sixteen Regional Operational Programs as well as indirectly under national programs. Thus, the integrated programs financed from various sources can be accomplished. They will be run in twenty four functional areas, including seventeen functional areas of province capital cities and seven functional areas of subregional/regional municipalities.

The implementation of the Integrated Territorial Investments (ITIs) through inter-communal agreements refers to thirteen functional areas, whereas in eleven cases it will be realized through the existing or new associations. Some of them have a wide spectrum of interventions, e.g. Wrocław Functional Area will start projects of twenty three investment priorities, while Warsaw Functional Area of no more than seven priorities. The associations or partnerships to run the Integrated Territorial Investments will mainly focus on projects under Priority 4e: promoting low emission strategies for all types of areas, in particular in urban areas, by encouraging sustainable urban transport and taking up necessary adaptation and mitigation activities; as well as Priority 4c: supporting energy efficiency and exploitation of renewable energy sources in public buildings and the housing sector.

The list of developmental goals for ecologically sustainable urbanization can be found in the 2009 Report⁵³ on sustainable city planning. The list includes the following challenges: reducing the emission of greenhouse gases, limiting urban sprawl, promoting more compact cities with efficient public transport, creating conditions that foster business activity, providing equal access to high-quality municipal services within a city and stimulating social integration by proper urban forms.

The elements of the integrated approach to the regeneration of urban areas are included in the Leipzig Charter on Sustainable European Cities with the following assumptions:

- creating and ensuring high-quality public spaces,
- modernizing infrastructure networks and improving energy efficiency,
- proactive innovation and educational policies,
- special focus on deprived neighborhoods within the context of the city as a whole,
- pursuing strategies for upgrading the physical environment,
- strengthening the local economy and local labor market policy,
- proactive education and training policies for children and young people,
- promoting efficient and affordable urban transport.

Modern city governance requires a visionary approach, original concepts and seemingly irrational ideas. Creation of new urban areas should be governed by **the rule of integrated protection of the cultural and natural heritage**. Therefore, one of the main challenges for a contemporary city, besides its functional role, is to integrate both material and mental elements. Urban life comprises environmental, economic, social, and cultural correlations, and thus the adequate development of urban areas can be achieved only through the integrated approach. The development includes the physical renewal of urban areas that integrates education, economic growth, social inclusion, and environmental protection. Consequently, partnerships between civil society, local economy and all levels of public administration is a precondition for reaching this aim.

⁵³ Planning sustainable cities [in:] Global report on human settlements, UN HABITAT, 2009.

URBANIZED AREAS AND THE ENVIRONMENT

ECOLOGY CONSTRUCTIVELY 43

URBAN ENVIRONMENT Jacek Godlewski

Sustainable environment

Urban environment is one of the most complex urban structures, strongly transformed anthropogenically, which affects natural ecosystems. It is also a result of shaping cultural environment of the urbanized space and it modifies depending on current needs of local communities and regional legislation. A city offers a comfortable living standard thanks to cultural, educational or health-care services (about 75%⁵⁴ of EU citizens live in municipalities of various size). In urban space development we can distinguish environmental and cultural elements.

Urban environment offers valuable options for sustainable life. Population density in cities makes it possible to shorten the distance to work and services, triggers a greater use of public transport, smaller flats take less lighting and heating energy, and thus residents consume less energy per capita than the population of rural areas. Urban structures, however, are expanding and extend well beyond city limits themselves.

Natural resources management

On the city scale, the following groups of resources can be specified: energy and climate, bio-economy, metals and mineral resources, clean air, water, and waste. Some resources tend to expand beyond municipal boundaries as they play an important part in the regional or national ecosystems, e.g. water catchment, agricultural areas or forests. The situation of a municipality depends on the natural environment which can be defined as ecosystem services to inhabitants. They include drinking water, clean air, healthy food or flood protection. Properly functioning ecosystems form the basis of sustainable urban development as they have a positive impact on a human being and open a wide spectrum of economic activity⁵⁵. Natural resources are mainly connected with the functioning of open urban space and create linked areas, spatial corridors that allow the air-mass flow as well as the movement of plant and animal species.

Natural resources can be also viewed as natural capital, forces of nature or environmental values that determine the quality of human life, including: renewable resources (water, air, solar energy, soil, forests); non-renewable (fossil fuels, minerals, secondary raw materials); and anything that a local community declares to be a resource (municipal waste, sand, landscape, wind power).

⁵⁴ In 2014 74.6%, source: Urban population (% of total), http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?display=graph, data for 2104, access date 22.01.2016.

⁵⁵ Berghöfer A. (ed.), Poradnik TEEB dla miast: usługi ekosystemów w gospodarce miejskiej (TEEB Manual for Cities: Ecosystem Services in Urban Management), UFZ, Helmholtz Centre for Environmental Research, Polish edition, Sendzimir foundation, Kraków, 2011.



Figure 10 - A former coal mine in Nowa Ruda - Słupiec, Poland



Figure 11 - Wind power stations in Den Helder, the Netherlands



Figure 12 - Hydro power plant on the Bóbr River in Pilchowice, Poland

Environmental planning and governance

Both governments and societies make decisions on the exploitation or conservation of particular natural resources. The decisions refer mainly to planning authorities, particularly noticeable on the municipal level where plans are adopted in relation to the public interest (social) and the private one (investments). Understanding the complexity of interactions between abiotic (physical environment), biotic and socioeconomic systems is a prerequisite for the future of cities and genuine improvement in the quality of life in the city.

Lack of knowledge about the effects of environment-related decisions may result in a loss of indispensable and valuable ecosystems, which causes not only impoverishment of society but also affects the potential for urban economic development.

Due to the evaluation of different resources within urban areas, the governance of natural resources should be subject to:

- applying sustainable production patterns,
- taking actions against excessive exploitation of ecological space,
- using renewable and non-renewable resources of the natural environment in a proper manner, integrating and connecting economic, ecological and social aspects.

An adequate approach to urban environmental governance requires sustainable production patterns and better management of natural resources. Necessary actions against excessive exploitation of *ecological space* should determine the efficiency of renewable and non-renewable resources of the natural environment as well as their correct use by the inhabitants. Uncontrolled urban sprawl leads to an expansion of artificial areas in Europe at the expense of agricultural ecosystems, grasslands and wetlands.

For the sustainable development to be successfully implemented in cities, a consistent urban strategy is a must. It includes integrated planning and city governance with the emphasis on the following aspects: ecological, social, economic, spatial, as well as civilization, institutions and politics. The goal of integrated planning is reaching social cohesion, reduced energy consumption (renewable resources, alternative fuels), efficient transportation system (diversification of means of transport), energy efficient buildings (insulation, low-energy buildings). Providing lower energy consumption per capita through such solutions as public transport or energy saving buildings is the key in urban planning. New technologies facilitate energy efficiency, especially with renewable resources such as wind power, solar energy or alternative fuels.



Figure 13 - Free ferry crossing system that links Northern and Southern Amsterdam



Figure 14 - Houseboats in Amsterdam



Figure 15 - High density built-up area with elements of park greenery in Warsaw

Successful city governance must include deliberate creation of urban greenery, surface waters and groundwater systems. Effective quantitative and qualitative solutions should be subject to green infrastructure through promotion of ecological engineering or eco-hydrology.

Proper governance of natural resources needs individual components to be evaluated, including: nature reserves, ecological land, natural habitats, wetlands, coastal zones, etc. in order to determine links and flows in ecosystems with a view of prioritizing tasks for different resources. An important indicator for maintaining or reducing a resource is the number of ecosystem users/beneficiaries and placing the component in protective hierarchy, which directly affects the resource use. In urban policy it is crucial to specify an indigenous zone for a given resource which gets destroyed when critical level has been reached in case of non-renewable resources. Yet, renewable resources need more financial efforts to recreate a given ecosystem. For this reason, ecosystems are of considerable value for urban governance.

Attempts to create urban sustainable environment are visible in pro-ecological trends in urban planning, including Eco-Urbanism, Green Urbanism or Green Architecture. The most pro-ecological tendency in urban planning is probably the garden city movement.

An example of changing urban planning system is the 1918 development plan for Greater Helsinki, made in line with the *City Beautiful Movement* by Elian Saarinen. Today, Helsinki is a model example for strategic planning with an integrated and holistic vision of the city. It includes the following stages:

- strategy a vision for the development of Helsinki region by 2050 with a population increase from 1.3 to 2 million on the area of 70 square kilometers of new development land⁵⁶;
- concept a new concept for the town of Sibbesborg in line with the strategy guidelines; the town located in the eastern part of the region as a missing satellite town, with the target population of 70-100 thousand and the area of 26 sq. km⁵⁷;
- plan a new local land use plan based on the concept;
- implementation the realization of key elements of the transportation system has started.

Drawing up the strategy and the concept was based on open planning and architectural competitions in order to get as many ideas for efficient urban governance (including its resources) as possible.

⁵⁶ Strategic alignments for Land Use, Housing and Mobility 2050, Greater Helsinki Vision 2050, http://www.hel.fi/hel2/helsinginseutu/ FINAL_GreaterHelsinki_200x200mm_english_03-09-2010_LOW.pdf, access date 22.01.2016.

⁵⁷ http://www.sipoo.fi/easydata/customers/sipoo/sibbesborg/kilpailu/index.html, access date 22.01.2016.



Figure 16 - "Greater Helsinki" 1918 by Elian Saarinen



Figure 17 – Vision for the development of Helsinki Region by 2050



Figure 18 - Functional and spatial structure of the planned city of Sibbesborg

Summing up, new spatial layouts require interdisciplinary governance, especially when the environmental context is taken into account. There is no one-fits-all solution. It must be adapted to a given location and stages of the modification process. Natural resources should be treated as the future social and financial wealth of the city residents as well as a sign of humanist and ecological solutions in the place of their everyday residence. The creation of urban environment must take into account natural aspects and its spatial continuity by connecting *outer* biodiverse areas (farmlands, water lands and woodlands) with *inner* areas of particular districts, housing estates and building complexes. This system should maintain high environmental standards in urbanized areas and provide people with a daily and direct contact with nature. Today, natural air ventilation systems, living hygiene and green infrastructure are the top priority guidelines in planning modern cities.

A CITY IN THE CONTEXT OF CLIMATE CHANGE Dominika P. Brodowicz

When considering climate change issues, it is worth referring to an opinion of those who have a real impact on shaping policies on environmental protection on a global scale and on the United Nations (UN) forum. As recently as in 2002, the problem of climate change was reluctantly addressed at the highest levels. In the case of the United States of America it was connected with its foreign policy, focused mainly on military interventions, including operations in Afghanistan and then in Iraq. We can learn from a 2002 memo by Frank Luntz, a prominent advisor to George W. Bush, the US President at that time, that a consensus about climate change within the scientific community would have a decisive impact on public opinion. Therefore, a primary solution suggested for that time was to continue to maintain scientific uncertainty and disagreement in the debate⁵⁸.

A radical change in the approach to the issue could be observed a decade later. The current US President, Barrack Obama, said in his speech to the US Congress in January 2016 that the best scientists confirmed a correlation between human activity and global climate change (especially an increase in greenhouse gas emissions). The President warned that if the world does not "stop the amount of carbon that we send up", there will be everything from rising oceans to more droughts and more floods and bigger hurricanes and typhoons, which in turn will trigger migration, conflicts and global famine⁵⁹. Climate change is a fact confirmed by NASA, including the Goddard Institute for Space Studies in NYC⁶⁰. Data presented by NASA refer to increasing average air temperature. Compared to the temperature data of the late 19th century and then to the whole 20th century measurements, the increase of the average annual temperature by more than 0.6 degree is evident⁶¹.

Cities as a place of living for more than half of the global population have a disgraceful input into deteriorating environment. According to the World Wide Fund for Nature (WWF), urban areas account for 67% of global energy demand, with the trend growing to 73% in 2030. This will have a direct impact on increased CO² emissions due to non-renewable energy resources being used for heating, cooling as well as lighting for buildings and streets⁶².

⁵⁸ Drivers of change, Climate change, ARUP, 2006.

⁵⁹ https://www.whitehouse.gov/the-press-office/2015/01/20/remarks-president-state-union-address january-20-2015, access date 18.09.2015.

⁶⁰ http://www.giss.nasa.gov, access date 16.01.2016.

⁶¹ http://www.giss.nasa.gov/research/news/20151218/, access date 16.01.2016.

⁶² Marks M., Miasta w obliczu zmian klimatu – zagrożenia i wyzwania (Cities and climate change – threats and challenges),

http://awsassets.wwfpl.panda.org/downloads/1_monika_marks_miasta_w_obliczu_zmian_klimatu.pdf, access date 18.09.2015.

Climate predictions are far from optimistic. Rainfall distribution will change towards drier summers in the Mediterranean area and more humid winters in Northern Europe. Heat waves will become more intense and will last longer, and by the end of the century the average annual air temperature will increase by 2-5°C compared with the current measurements⁶³. Unfortunately, we do not need to look far to find extreme weather events. In 2002 Austria and in 2015 the Balkans saw severe flooding⁶⁴, while the summer months in 2003 and 2015 brought heat waves not only in the Mediterranean area⁶⁵ but practically throughout Southern and Central Europe⁶⁶.

Population density gives cities a great potential to save energy and cut down on greenhouse effects. Due to the significance of climate change issues, top universities together with organizations of cities and local governments have started studies on preparing urban areas to climate change. One of the relevant examples is a project run by the Massa-chusetts Institute of Technology (MIT) and ICLEI - Local Governments for Sustainability called *Urban Climate Change Governance Survey*. From the 2014 report it emerges that⁶⁷:

- 4% of cities worldwide are engaged in both adaptation and mitigation activities.
- The most common areas where local governments reduce emissions are those under their direct control (i.e. local government buildings and vehicle fleets), waste management and household energy consumption.
- Priority motivation factors for cities to initiate climate change mitigation strategies are: demonstrating leadership, promoting sustainable urban development, understanding local climate-related risks, creating green jobs and boosting green economic development.

Cities report that their climate change planning and implementation initiatives face multiple challenges with the financial issue on the top. Lack of funding for implementing projects and programs or employing teams and experts is a significant impediment. Also, nearly 50% admit to have no access to or understanding of the data and information related to natural threats⁶⁸.

New York City is one of those cities preparing for the negative impact of climate change. The administration of the former NYC Mayor Michael Bloomberg made a roadmap called *PlaNYC*. The current Mayor Bill de Blasio released on Earth Day 2015⁶⁹ a new plan *One New York: The Plan for a Strong and Just City*⁷⁰ which builds on the previous one. According to the data found on the Mayor's website, since 2005 carbon emissions have been reduced by nearly 20%, on track to reaching a 70% reduction by 2050. These actions have already given the city the cleanest air in 50 years.

68 Ibid.

⁶³ Ilibid.

⁶⁴ http://www.fakt.pl/serbia-tonie-gigantyczna-powodz-na-balkanach,artykuly,462043,1,1,3.html, access date 17.09.2015.

⁴⁵ http://prawo.money.pl/aktualnosci/wiadomosci/artykul/powodzie;w;europie;woda;wyzej;niz;podczas;powodzi;stulecia,178,0,1318322. html, access date 17.09.2015.

⁶⁶ http://tvnmeteo.tvn24.pl/informacje-pogoda/prognoza,45/tropiki-w-europie-nadciaga-potezna-fala-upalow,172510,1,0.html, access date 17.09.2015.
⁶⁷ http://www.urbanclimatesurvey.com, access date 18.09.2015.

⁶⁹ Earth Day, https://en.wikipedia.org/wiki/Earth_Day#Earth_Day_Network, access date 10.01.2015.

⁷⁰ http://www1.nyc.gov/html/onenyc/about.html, access date 18.09.2015.

Another well-known European example of a city that has included developing plans for adaptation in its agenda is Copenhagen. It has been awarded the European Green Capital Award in 2014⁷¹. It has been granted the title of the world's most livable city by *Monocle* magazine twice (2008 and 2013)⁷². Copenhagen is also a cyclist-friendly city. More than 55% of its residents commute to work, school or university by bike. An estimated 96% of inhabitants can get from their place of residence to recreation areas in less than 15 minutes. Public transport is also appreciated by specialists. In 2008 transportation experts called the city train network in *Copenhagen the best metro in the whole world*⁷³.

Worthy of particular note is the foresight of those responsible for 2100 urban developing strategies. Taking into account alarming assumptions about the 30-40% increase in rainfall by the end the century, the temperature in summer months by 2-3 degrees by 2050 and the sea level by about 1 meter within the next hundred years, the authors of the report *Copenhagen - Solutions for Sustainable Cities* prioritize 4 pillars of change⁷⁴:

- 1. Rainwater. Creating solutions across the whole city to pump out the rainwater.
- **2.** Air conditioning. Building more passive buildings with alternative cooling solutions awnings, ventilation and natural insulation.
- 3. Warning system. Monitoring and analyzing data on flooding and raising the sea level.
- **4.** Green areas. Developing new green areas, small parks (pocket-size parks), green roofs and walls in order to slow down the outflow of rainwater and reduce the risk of flooding.

Polish cities have also seen many changes, although they are less spectacular than in Western European countries, yet still significant on the way to adapting to climate change. The 2010 and 2013 flooding as well as the 2015 drought indicate that climate challenges pose a real threat. Drawing on the example of Warsaw we can refer to a project called *Cities of Power*⁷⁵, concluded in 2014. It was financed by the European Regional Development Fund with Warsaw as the lead city and partner cities of Turin, Ravenna and Klagenfurt. The project objective was to promote renewable energy use in urban areas. Under the project, an action plan for Warsaw was developed on using renewable energy resources by 2020. Project outputs include also a map of sun exposure for Warsaw connected with an interactive IT-toolbox which estimates the solar gain of solar panels or photovoltaic systems in the city.

One of current topical issues is Urban Climate Change Adaptation Plan for cities of over 100,000 inhabitants⁷⁶. In cooperation with the Ministry of the Environment municipalities can launch planning projects within the upcoming two years that would prepare them for sudden rainfalls, local flooding, extreme heatwaves or hurricanes.

⁷² http://op-talk.blogs.nytimes.com/2014/08/04/what-is-the-worlds-most-livable-city/?_r=0, access date 17.09.2015.

⁷³ http://manager.money.pl/news/artykul/najlepsze;metro;na;swiecie;jest;w;kopenhadze,36,0,610852.html, access date 17.09.2015.

⁷¹ http://ec.europa.eu/environment/europeangreencapital/winning-cities/2014-copenhagen/, access date 17.09.2015.

⁷⁴ Copenhagen – Solutions for Sustainable Cities 2012, https://stateofgreen.com/files/download/1174, access date 18.09.2015.

⁷⁵ http://www.citiesonpower.eu/pl, access date 18.09.201.

⁷⁶ http://www.lublin.eu/Lublin_przygotuje_sie_do_zmian_klimatycznych-2-4724.html, access date 20.09.2015

The planning strategies may also develop systems for rainwater collection or plans for spatial development of highly urbanized areas. The projects are to be financed from the Operational Program Infrastructure and Environment, whereas the adaptation activities from environmental funds. Without such plans, cities will not be eligible for financial support for climate change related actions under the EU 2014-2020 financial perspective⁷⁷.

Summing up, the issue of climate change together with its negative effects has become a challenge for cities for years to come, regardless of their geographical location. The cities which prioritize these challenges in their strategic plans have been presented here. However, it turns out that this approach is globally uncommon. It frequently stems from incomplete knowledge of decision makers as to climate-related risks for functioning of the city and health condition of its inhabitants as well as insufficient financial means for projects that would adapt infrastructure, transportation network or property resources to sudden spells of hot or icy weather, or high concentration of particles that induce urban smog formation.

⁷⁷ https://www.mos.gov.pl/artykul/5232_spotkanie_konsultacyjne_spa_2020/20436_spotkanie_konsultacyjne_spa_2020.html, access date 20.09.2015.

ADAPTING CITIES TO PRESENT-DAY THREATS Katarzyna Sadowy

Safe city

The beginning of the 21st century turned out to be a period of many risks and threats which were both unexpected or exceptionally large in scale. The nature of such crises is varied and complex; they are related to economic, social and environmental phenomena with many areas of overlap between the three aspects⁷⁸. Some would like to see the source of today's problems in the depletion of natural resources and climate change. Others point to the dominant cultural and economic model dominated by consumption. Regardless of who is closer to the truth, the causes of the problems will not be easy to remove. We had better be prepared to respond to the crises and calamities which are very likely to take place in the years to come.

Cities are special areas when it comes to risk management, most of all because of the people living in them, but also due to the specific nature of urbanized space, i.e. spatial planning, which generates different problems for water supply and sewage management, formation of heat islands during heat waves, infrastructure density and its location, growing social polarization and the resulting vulnerabilities of various social groups. The degree of resilience to crises which cities possess can be weakened or boosted by factors which are environmental and urban, but also architectural, technical, social and cultural.

Crises and response to natural calamities

A safe city will operate a correctly functioning system despite the existing threats, although there can be different types of relationships between risks and system security. When cities are resilient to threats, they retain all their functions practically intact and do not change as a result of calamities or dangers. Cities may also display an ability to adapt and accommodate to adverse phenomena by modifying individual elements. In extreme situations, cities ravaged by disasters may be rebuilt as better systems, more adapted to new challenges. One group of challenges has to do with gradual changes including demographic (e.g. changes in the age structure of societies, migrations), economic (e.g. the degree of industrialization), social (e.g. changing models of living and consumption), technological (e.g. depleting old and looking for new energy sources) and environmental ones (especially climate change). Another group is related to one-off events which transform cities in a very short period. This group includes primarily various disasters – political (e.g. war), economic (e.g. collapse of a sector of the economy), technological (e.g. infrastructure failures) and, finally, environmental (e.g. hurricanes, typhoons, draughts)⁷⁹.

⁷⁸ as noticed by many authors including Roseland 1997, EEA 2010, Hirt 2008, Owen 2009, Krugman 2010, Speck 2013.

⁷⁹ Sadowy K., Struktura przestrzenna a ryzyko związane z funkcjonowaniem miast (Spatial Structure and Risks Related to the Functioning of Cities), Research Bulletin, Collegium Mazovia Innowacyjna Szkoła Wyższa, Siedlce 2014

The mechanisms of preventing risks and their consequences or carrying out adaptation or rebuilding work vary. Three types of actions are usually identified:

- grey actions, e.g. building barriers;
- green actions, e.g. improving biodiversity;
- soft actions, e.g. early warning systems⁸⁰.

It is always easier to forecast and foresee gradual changes. But even those risks which are more difficult to predict may be countered with better or worse preparations to minimize their consequences. Earthquakes and their consequences measured in the number of casualties are a good case in point. Earthquakes of a similar magnitude killed about 230,000 people in Sumatra in 2004, between 165,000 and 310,00 (according to different sources) in 2010 in Haiti but only about 20,000 in 2011 in Japan, which was much better prepared. Yet even Japan proved unprepared for the tsunami which brought about a nuclear accident⁸¹.

Pre-emptive actions which not only minimize the consequences of risks, but, most of all, tackle the risks themselves, are the most efficient. However, they require time and the involvement of decision makers and residents. This is well illustrated by the approach to potable water crises in Cyprus and Spain⁸². In 2005–2008, due to poor rainfall in Cyprus, potable water became so scarce that the country decided to import it in tankers from Greece. On the other hand, Saragossa, which experienced similar problems in 1998–2012, introduced a comprehensive policy of water saving. It consisted in modernizing the water supply infrastructure, launching awareness campaigns, metering the use of water by households and the necessary adjustment of water tariffs. As a result of these measures, water consumption fell by 30%, even though population increased by 12%. The rise in population numbers may be interpreted as indirect evidence of improved quality of life in the city, which is undoubtedly related to uninterrupted access to good quality potable water.

Soft measures are also employed to manage the problem of heat waves and the formation of heat island in cities. More and more European cities try to contain health risks, including premature deaths, brought about by long exposure to excessive temperatures. For example, Milan, Paris and Botkyrka (Sweden) have all identified risk groups, registered them in a dedicated system and ensured access to relevant services, including paramedic care and shopping assistance. In Budapest, an early warning system about heat waves was an element in the initiative to expand air pollution monitoring⁸³.

⁸⁰ Adaptation in Europe – Addressing risks and opportunities from climate change in the context of socio-economic developments, EEA Report 3/2013.

⁸¹ https://pl.wikipedia.org/wiki/Trz%C4%99sienie_ziemi_u_wybrze%C5%BCy_Honsiu_(2011) access date 10.01.2016.

⁸² Adaptation in Europe - Addressing risks and opportunities from climate change in the context of socio-economic developments, EEA Report 3/2013

Specific challenges are related to a situation when a city or part of it must be rebuilt after a disaster. One of the largest such calamities in recent years was hurricane Katrina which hit the Bahamas, the Gulf of Mexico and New Orleans on 29 August 2005. In New Orleans dykes were broken, as a result of which 80% of the city was flooded, the water level reaching 3 meters. About 500,000 people had to be evacuated.

New Orleans fell victim to a series of critical factors. First, the city was inconveniently located. Other factors were socio-economic in nature. The risk management and early warning system did not work as expected. Later on the system of organizing relief, especially at the federal level, was also heavily criticized. However, the situation was aggravated by the fact that basic infrastructure was destroyed at the very beginning of Katrina's strike. Social problems, especially the highest poverty level in the USA, and a small share of home owners in the population, were additional risk factors and - according to some observers - they help explain why rescue efforts came so late with preference given to white middle class citizens. Nevertheless, the projects launched when rebuilding the city provide a good model and may be an inspiration for analogous actions in other part of the world including Europe and Poland.

One of the implemented projects was *Project Home*⁸⁴. Its first objective was to recreate neighborhood "clusters" to encourage more residents to come back to the city. It would be difficult to imagine anyone wanting to rebuild a house among ruined, empty plots with no prospect of neighbors settling in the vicinity in the near future. Clusters also served to make more efficient use of resources earmarked for infrastructure reconstruction.

The other important objective was to build the city anew in a way which would minimize the negative consequences of potential future calamities. Thus, the plan was to build more safe houses with better technical parameters.

The methodology adopted was to involve different stakeholders and encourage them to exchange knowledge, expertise, labor and capital (including real estate). The stakeholders included:

- non-profit organization: Leonard and Louise Riggio Foundation, which gave birth to Project Home Again,
- non-profit organization: Home Again Project;
- public body: U.S. Department Of Energy's Building America;
- public body: The New Orleans Redevelopment Authority (NORA);
- research body: Building Science Corporation;
- private owners, residents;
- private bodies, local developers; Green Coast Enterprises.

⁸³ Ibid., see also: Molander I., Carlsson-Kanyama A., *Heat waves, an underestimated threat to health: A method for local governments to prevent and act, presentation from the Annual Global Forum on Resilient Cities and Adaptation, Bonn, 2011.*

⁸⁴ Baechler M. C., Gilbride T. L., Hefty M. G., Cole P. C., Adams K., Butner R. S., & Ortiz S. J., Building America Best Practices Series Volume 16: 40 proc. Whole-House Energy Savings in the Mixed-Humid Climate, Pacific Northwest National Laboratory (No. PNNL-20890, Richland, WA (US), 2011.

In the first phase of the project in 2009, 20 plots in Gentilly were purchased to build houses according to new technical standards. A system of incentives and conditions was created for former New Orleans citizens who had lost their homes and could recover them by participating in the project. The following conditions had to be met:

- keeping up the house,
- paying the insurance,
- paying the taxes,
- offering one's own real estate to Project Home Again;

In return, it was possible to obtain a house with no additional fees thanks to loans which were written off at the rate of 20% a year. In this way, the ownership was transferred after 5 years. The project resulted in 131 houses built in 6 phases. The houses are protected from floods, additionally insulated from wind and water as well as equipped with energy-saving devices, installations and extra thermal insulations, reducing upkeep costs. An average house area was 110-125 square meters and the total costs were below 198,000 dollars, decreasing in every successive phase of the project. Energy saving could be up to 55% compared to previous houses⁸⁵.

Efficient methods of building safe cities require the involvement of different stakeholders and methods. It is also necessary that this should be an ongoing learning curve for the organizations and the people involved. In the case of exceptionally serious risks or challenges, it is recommended to tap into the experience of the stakeholders who have faced similar problems in the past as well as draw upon the achievements of the R&D sector. The same goes for the everyday running of cities, including Polish ones. Urban planning needs to be done with more involvement from local community or neighborhood organizations, leaders and residents. This tendency has been pronounced for several years now. Despite differences among individual countries, American and Western European lessons provide good examples of organizations which may be successfully applied.

⁸⁵ Rodin J., The Resilience Dividend, Publicaffairs, 2014.

A FRIENDLY CITY

THORNY ISSUES IN HOUSING Jacek Godlewski

There are lots of thorny issues related to housing and they affect residents in different manners. One of the two key aspects that have a negative impact on inhabitants is the intensification of residential development visible in city centers and suburban housing estates. It derives from both economic and social factors that lead to the maximum land use for construction purposes.

The typology for housing challenges refers to the character of housing development, starting from multifamily residential, which involves the problems of dwelling ecology, smaller dwelling areas, a shortage of common space for the community and an insufficient spectrum of public services, to detached houses dominated by cramped subdivision of land and no transportation service.

Apart from problems connected with intensified development of residential areas there are also difficulties with scattered housing buildings. This phenomenon concerns mainly new suburban projects, located in farm lands. It is spontaneous urbanization triggered predominantly by the land owners' profit. It grows out of the following factors: a) intention to sell plots of farm land as residential land, which is more expensive, b) building houses as rural settlements, which is subject to lower taxation or c) an appetite for living in "green suburbs".

Seemingly, the above aspects do not pose problems to living itself, as these examples of development are carried out as individual housing investments surrounded by extensively used agricultural land. This kind of investment approach is similar to development in the countries of Northern Europe, e.g. in Finland. A housing project of Tapiola (a garden city) in the middle of a forest is characterized by freely scattered buildings, 3-8 stories high with an average population density rate of 3,200 per sq. km, while in Helsinki region the rate in low density areas (detached housing) is 350 per sq. km. The tradition of Finnish Modernism was concentrated on the development of suburbs and the creation of balanced relations between built environment and the nature. Polish suburbs may enjoy such a form only in the first stage of transformation because the development is located along the roads (typically for farming transport vehicles) on single subdivided plots that have e.g. an attractive location. An indirect factor triggering scattered development is the lack of investment stages or of continuity in construction, because local legislation does not pose a common-sense obligation to pursue planned urban development.

Another stage of agricultural land transformation is building up the space between the already existing plots, which forms chains of development. The final stage is developing the second and third building line inside the urban blocks in street line development, with limited transportation, accessed through extension roads or thanks to land easement. Major problems for residents of these areas include limited transportation service (incorrectly parameterized streets) and no space for technical infrastructure (water, sewage and rainwater connections). Such an approach to the spatial planning policy results in resorting to temporary solutions: wells, septic tanks or home sewage treatment plants, which cannot operate efficiently and thus induce hygiene disasters.

Another challenge for new housing developments is the lack of public services such as culture, education, sport, or recreation. Market conditions are responsible for that as there is an ever greater demand for residential development. The consumer (resident), however, is interested in a place for living and not in participating in costs of buying and developing public space such as parks, sports fields, roads, schools, or community centers. This is the key responsibility of the Commune where residents live and pay taxes. Today, a general approach of municipalities promotes random urban development since local legislation does not include public status roads, park greenery or public services. Reluctance of local authorities to plan these objectives results from the necessity to buy out land properties along prospective road boundaries as well as from an obligation to make water, sewage and street lighting investments. Therefore, let us ask a question: what is this planning of new housing trends for? The answer could include the following arguments: an extra revenue gained from direct taxes (taxes on land and buildings) and indirect taxes (VAT, CIT, and PIT), way higher than taxes on agricultural land; the power to impose and collect planning fees and betterment levy or common cadastral tax.

A problematic issue in housing is uncontrolled urban development based on geodetic land subdivision, which in turn results from a wish list for small-scale residential plots. Indeed, a smaller land plot is easier to sell than a big one as it will cost less with the fixed price per square meter. Consequently, the market demand leads to a formal division into land plots of average size 600 sq. m in urban areas, while in suburban towns about 1,000 sq. m. It translates into population density of 4,500 per sq. km and 2,700 per sq. km, respectively, on the assumption that 10% is taken by (unwanted) transportation and three people will inhabit one plot. In the first case, population density corresponds to population density of the Swedish capital city Stockholm, while in the other to Tallinn, the capital city of Estonia.

Particular problems of multifamily housing development include: inadequate daylight, impractical floor plan in old towns, city centers and Modernist prefabricated buildings; lack or ineffectual public space filled with substandard development (garages, sheds, technical constructions, etc.) in city centers; insufficient parking space, sports and recreation facilities. City center built-up substance generates problems when the purpose is changed and offered to commercial services (banks, law firms, offices). This transformation does not improve the quality of city centers as the area becomes less and less attractive for the residents due to raised prices and domination of services, which in turn makes downtown districts die out culturally. It also reduces security based on neighborhood solidarity.

New multifamily housing projects are based on a minimum program. It is limited to: a specific apartment typology, placing parking space in the immediate vicinity of or inside buildings, common space between buildings and fencing. Lower living standards result from the form and method of investments which promote standard solutions limited to putting up an apartment box by making reinforced construction shell, ceilings, glass or gas concrete walls with some heat-insulating cladding. The buildings are on the one hand cheap to produce, but on the other hand expensive to maintain and definitely lack energy saving parameters.

How can we solve housing development problems? First, municipalities must implement sensible and consistent spatial policies, avoiding changes in land use (from housing into services or production) and giving investors the sense of security during the investment process. For new housing projects it is essential to divide the investment into stages, which enables subsequent completion of basic infrastructure, communication and construction development. They should also designate and hold areas for basic public services which could be temporarily used for other purposes, thus being a next stage in the realization of the target vision for the housing estate (greenery, sport and recreation on areas for culture and education). Decision makers should also manage the primary transportation and shared zone arrangement (for passersby, vehicles and bicycles) which provides residents with a possibility to move around and with relevant technical infrastructure. It is vital to make publicly available the inner part of multifamily urban blocks in the form of semi-private space. Efficient management is also a must that leads to reduced maintenance costs thanks to ecological and low-energy solutions. The final and the most important factor is dwelling hygiene, including due care for biologically active space through preserving parks, green squares, water greenery or family allotment gardens which also constitute the green infrastructure used e.g. for rain water management purposes.

It cannot be forgotten, though, that the conclusions presented here will not universally apply to all residential areas. Yet, it seems that for housing resources management in settlement units they can serve as selected case studies that help to prevent problems with urban planning and development.

A CITY FOR ALL Katarzyna Sadowy

Inclusion and social capital in urban planning

Privileges and responsibilities, differences in the standard of living and access to various urban functions, domination of municipal or religious authorities are all reflected in the architectural and urban creation of the city. Today, one of key challenges for Europe is neutralizing the effects of growing social polarization and exclusion of some people and groups from using the advantages offered by the city. Inclusion of as many parts of urban community as possible increases social capital and strengthens civil society, to the benefit of all, at the end of the day.

Speaking of the urban planning strategy that takes into account these principles, we should consider what elements are crucial because a city is very complex and diverse. The following aspects seem to be notably meaningful:

- urban spatial arrangement (different quality levels in various neighborhoods, availability of public services, etc.);
- housing development (including rental apartments and community housing);
- public facilities;
- public space.

The role of public space in participatory planning and social capital building together with the concept of planning *for all* needs to be elaborated. The notion of community segmentation, differentiation or categorization presupposes that some of these groups suffer particular disadvantages or even exclusion. City residents can be part of many groups at the same time (young, uneducated, wealthy), and the assessment of their diverse participation may be complex. However, the goal of these classifications is to analyze specific needs of particular groups and the degree of their satisfaction.

There may be numerous categories of group divisions, including the following ones:

- ∎ age;
- economic status (measured e.g. in the income level per one household or a household member; household financial assets);
- education;
- cultural aspects, mostly nationality, religion and race.

The following groups are currently considered to be influential stakeholders of participatory planning:

- seniors,
- children (together with their parents),
- the disabled,
- people on social welfare or in difficult long-term life situation.

Planning that takes into consideration the needs of immigrants is a subject that deserves special attention. A significant, yet challenging issue is to include the users of public space that are viewed as undesirable or a threat to public security, e.g. the homeless. The fundamental question is: "Should planning for all include the needs of all indeed (of course apart from criminals and those who threaten or destroy public security)"? If the answer is affirmative, to what extent? It is impossible to equally satisfy the needs of all, not least because some needs of particular groups are mutually exclusive. This does not mean, however, that we should stop looking for compromise solutions. It would be ideal to provide everyone with an opportunity to spend time and have their desirable lifestyles. The greatest challenge, however, is to establish how to negotiate the space between individual groups and what behaviors should be declared inadmissible.

A way out is to start studies on public space and analyze its accessibility. We can distinguish the following aspects of accessibility:

- physical;
- economic;
- psychological.

Physical accessibility is most connected with physical shape of public space. Various barriers may form obstacles, yet it must be borne in mind that it is not only about physical disability but also other kinds of impairment. Designing space for wheelchair users does not cover all needs in this respect (as it is frequently believed). Removal of technical barriers, installing amenities as elevators, driveways, ramps, passages wide enough, roads and floors with even surfaces is convenient also for people with minor walking disabilities, parents of small children or travelers with heavy luggage. Planning should also take into account the needs of people with the visual or hearing impairment as well as those with developmental disabilities. The following factors should be taken into account: clear-cut urban layout, properly formulated announcements and information, adequate lighting and intensity of impulses which can be annoying or disturbing.

Economic accessibility is connected with the level of commercialization in public space. What promotes greater accessibility is outdoor location (in parks or squares) for fitness gyms, ping-pong or chess tables or simply urban furniture to fulfill various functions. Free entertainment or cultural events perform a similar function.

A significant aspect is psychological accessibility, meaning the sense of freedom in using public functions or facilities. Widespread promotion of a healthy lifestyle and sports by all social groups encourages inhabitants to use outdoor gyms. Also seniors or people who are less physically fit have stopped feeling embarrassed or uncomfortable to use sports equipment. Outdoor fitness or workout practiced by seniors does not surprise anyone anymore. It seems that several years ago such psychological barriers were much higher. They seem to have vanished partly thanks to placing outdoor gyms as small, local zones, close to their dwellings, in the area where they feel comfortable and at home. Mental barriers may concern using cultural facilities or attending cultural events. Those who are not accustomed to this kind of activity may be uninterested in these offers or they can feel strange and awkward not knowing certain codes of manners appropriate in cultural space. A proper introduction to public space may effectively lower the barriers, encourage to take active part and thus strengthen the individual and social capital. Making the best of public space is connected with the quality and dignity of life. Sense of belonging, opportunity to express oneself, to satisfy social needs and to develop hobbies are extremely important for both categories equally. However, social capital, just like preventing social exclusion, has much more to do with the infrequently applied category of life dignity. It can be weakened due to:

- indifference (disrespecting or ignoring needs of some users);
- disdain (tolerating hate speech in public space);
- dependence (necessity to be assisted, e.g. because of physical barriers);
- collective responsibility, stigmatization (neglecting areas designated for particular social groups, using disrespectful or scornful terms by their residents);
- exclusion (e.g. through gentrification or commercialization of public space).

Participation in the process of creating public space naturally enhances social inclusion and social capital building. It offers a chance to exchange opinions and needs with different groups during a debate, when there is still time for compromise solutions and various viewpoints. Participation may take various forms, from formalized schemes required by law to bottom-up initiatives which tend to be unwelcome or even ignored by the authorities.

Today, basic tools for joint efforts in shaping public space is submitting comments to draft zoning plans as well as proposing projects under the participatory budgeting scheme. Also other participation methods have become more and more popular, mainly public consultation and workshops. They trigger the engagement of particular social groups, also those that are usually inactive and reluctant to take part in quite common participation mechanisms. There are tools being prepared to facilitate the understanding of project concepts - spatial drawings, mock-ups or plans - by children and citizens unfamiliar with urban planning as well as by people with the visual impairment or developmental disabilities.

An exceptional technique for participatory public space creation is introducing signs, symbols and notes by artists and other users. There are two notable remarkable examples of such bottom-up interventions.

The first one is artistic in its nature. It is a mural by Iwona Zając made on the walls of the Shipyard in Gdańsk. The artist made it in 2004 upon her decision to go out with her works into the urban space and turn a spotlight on social issues. The mural was inspired by stories that former shipyard workers had shared with the artist. As Iwona Zajac put it, the mural was meant to be a tribute to the place and the people. When decisions were made to close down the shipyard and redevelop this part of the city, the building wall became troublesome. The initial idea was to move it to another location (according to the investor's statement from 2008) however finally, in 2013, it was simply knocked down. It is, moreover, a strategy model that affected other buildings such as Supersam (a supermarket) in Warsaw or the Railway Station in Katowice which were supposed to be moved, in one piece or in parts, but at the end it did not happen and they were replaced by brand new constructions. It proves not only a doubtful authenticity of investors but also something deeper and more important. The testimony of time and identity of the inhabitants is strictly connected with the place. Moving relics and setting up a lapidarium instead of authentic space is not only problematic and costly, but probably also pointless. After ending their professional careers, the former shipbuilders were still symbolically present in that space for a few years. Eventually, they disappeared completely.

The other example of interference in public space is not as symbolic but has a very practical dimension, related to the sense of security and control over the immediate surroundings. In Calgary, local residents had for years been unsuccessfully trying to enforce reduced speed limits in their street. Since their motivation was driven by the security of their children, they took action that drew on the esthetics of children's drawings. In the street, apart from illegally putting up road signs with the desired speed limit, they painted road surface markings, e.g. yellow signs that promoted reduced speed or huge ladybirds that symbolized children the nearby playgrounds. The road signs were removed by municipal services. The authorities made a statement that the official plans did not include reduced speed limits to be introduced any time soon. The painted ladybirds, however, were allowed for a limited period of time, as a gesture of goodwill on their side. The representatives of the inhabitants' groups declared that they would keep on painting the drawings. Thus symbolic actions became a basic tool to negotiate the right to control the space they use. Artistic activity in the urban space is a form of social expression, a communication between the artists, inhabitants, city authorities or even in a broader sense, the state or the international community. They can have a crucial meaning in the debate on the urban future and related ideas. This aspect will be elaborated on in the following chapter.

Social inclusion and building community capital through all-party creation of public space is an essential and timely challenge. It requires continuing education and engagement of all the stakeholders, i.e. planners, local authorities, local organizations, informal groups, and inhabitants themselves. There are more and more tools and best practices available which can prevent or mitigate conflicts and facilitate the adoption of the most effective solutions.

PARTICIPATORY PLANNING AS AN ELEMENT OF SUSTAINABLE DEVELOPMENT

Katarzyna Sadowy

Introduction to participatory planning

Participatory planning plays an important role in the functioning of mature, democratic societies. It refers to exceptionally essential issues which significantly affect the creation of urban sustainable development. In Poland, the direct participation of a community in this process is legally secured in the Spatial Planning and Land Development Act⁸⁶ which is relevant to passing local law⁸⁷. Nevertheless, there is a need to extend the participation methods to more open and flexible forms that respond to current planning and social demand. Extra-statutory forms of participation are widespread across Western Europe⁸⁸, but are still fledgling in Poland. For this reason hammering out and disseminating best practices is of high priority. An exemplary action of this kind is planning workshops Praga Północ⁸⁹, a district in the city of Warsaw.

Praga Północ – workshops as an example of urban regeneration participatory planning

The assumptions were consistent with the guidelines of UN-HABITAT Agenda, which emphasizes participatory governance model based on community's will, equal chances in the access to the advances of the development, equitable share of costs and respect for natural environment by modifying today's patterns of production and consumption.

Praga Północ is located on the right bank of the Vistula River in Warsaw. A characteristic feature of this neighborhood is a very high degree of preserved buildings that did not undergo destruction during World War II, as compared to other quarters of the capital city. A considerable part of the urban development dates back to prewar times and is to a greater degree in poor technical condition due to numerous social, political and economic factors of the postwar period. It is noteworthy to mention changes in the ownership structure following which the most of prewar private buildings were transferred to municipal ownership (municipalized). It applied to single family houses, multi-family residential buildings with a commercial part on the ground floors, as well as to service and industrial sites. Complex social processes in the district gradually led to steady deterioration of its reputation. This, in turn, translated into progressive negligence in housing management and consequently to a continuing degradation of the urban tissue and to local community problems. Only in the past few years has the trend been successfully reversed by intellectual and high art elites that

⁸⁶ Act of 27 March 2003 r. the Spatial Planning and Land Development Act, Dz.U. [Journal of Laws] of 2003 no. 80 item 717.

⁸⁷ Goździewicz-Biechońska J. Partycypacja społeczna w tworzeniu prawa na przykładzie miejscowego planu zagospodarowania przestrzennego (Social participation in law making on the example of a local spatial development plan), Samorząd Terytorialny, 2008, 7-8, p. 32-42.

 ⁽Social participation in law making on the example of a local spatial development plan), SamorZąd Terytoniany, 2008, 7-8, p. 32-42.
 Siemiński W. Cele i zasady partycypacji społecznej w planowaniu przestrzennym – przegląd literatury (Aims and principles of social participa-

tion in spatial planning – literature review). Człowiek i Środowisko, 2007, 31.1-2, p. 37-59.

⁸⁹ http://sarp.warszawa.pl/warsztaty-projektowe-praga-polnoc/, access date 10.01.2015.
started to appreciate the values of this historical urban tissue and the colors of local community who never ceased to cultivate its folklore, typical of prewar Warsaw. Despite the current *vogue for Praga*, the wish list of urban regeneration actions is enormous. There are still serious social problems connected with unemployment, undeclared work and dependence on social welfare.

The goal of Praga Północ workshop session was to work out a transformation plan for a selected area in the district. It was organized for the city of Warsaw together with the Society of Polish Town Planners in 2014. The main focus was to foster cooperation among the jury expert members and teams and to provide comprehensive information on proceedings and solutions to all the interested parties, especially the district dwellers.

The workshop was based on the interdisciplinary principle, which was reflected in the selection of participants. The workshop jury was chaired by Prof. Marek Bryx, Ph.D. (economist, Warsaw School of Economics) and consisted of architects, urban planners, social science researchers, professionals experienced in non-governmental organizations and public administration, as well as entrepreneurs (Prof. Marek Budzyński - architect, urban planner, the Faculty of Architecture at Warsaw University of Technology; Aleksandra Gołdys - sociologist at Warsaw University; Julitta Grocholska, Ph.D. - urban planner, geographer, the Society of Polish Town Planners; Wojciech Nowakowski - business premises specialist, private sector; Marcin Ochmański - entrepreneur; Michał Owadowicz - architect; Katarzyna Sadowy, Ph.D. Eng. - architect, economist, Collegium Mazovia, Association of Polish Architects; Marek Sawicki - architect, urban planner).

In the first stage of the workshop session, the registration was open for teams consisting of minimum one architect or urban planner and at least one representative of the social sciences. The jury evaluated the achievements of the team, but most of all the submitted summary information on the transformation concept for the selected area. The aim was to outline the essential principles and goals of the program, to be elaborated on and clarified in the second stage. The teams had to identify specific tools for reaching operational goals:

• social and economic recovery by improving the quality of public space in line with the rules of spatial order and esthetics,

- development of tourism and culture in the context of cultural heritage resources,
- increased safety of inhabitants and readjusted transport networks inside the residential complex,
- integration of inhabitants, prevention of social exclusion.

Five teams proceeded to the second stage. It was a reasonable assumption that in stage 2 there would be no winners but a free-form exchange of opinions among the teams and the jury as well as debates at public meetings. As a result, five extensive concepts for transformation programs were prepared, on the basis of which the jury

formulated recommendations to the Integrated Regeneration Program 2014-2022⁹⁰ (IRP). The Program will act as a follow-up to the Local Regeneration Plan for the City of Warsaw 2005-2013. The IRP obligatorily includes the districts of Praga Północ, Praga Południe and Targówek. For the remaining districts the participation in the IRP will be optional. During the workshops, the principles of the Integrated Regeneration Program 2014-2022 together with annex 6 to the Program – Urban Regeneration Microprogram for the District of Praga Północ in Warsaw⁹¹, had been known.

In recommendations, which were annexed to the Program⁹², the jury stressed the importance of the following activities:

- conscious and active real estate policies in line with a broader program on social policies,
- using such tools as tenants' profiles and social clauses to boost economic and professional activation of the district in connection with real estate policies,
- reinforced social engagement through local community centers, launching an institution of a local leader and information strategies,
- readjusting traffic schemes and prioritizing pedestrians, cyclists and public transport at the cost of individual vehicle owners,
- introduction of new solutions: social, economic, architectural and spatial with the testing phase including the participation of inhabitants⁹³.

Praga Północ workshops - conclusions and lessons learned

Regeneration of space located inside an urban functional area, especially in city centers, plays an important role in sustainable development for a number of reasons. First of all, regeneration is an activity which aims to employ the existing resources of buildings, technical infrastructure and public space. Improving their technical and functional condition is a key element in maintaining a compact form of the city and the density of its development, in opposition to developing new, non-urbanized areas and urban sprawl.

It is exceptionally significant to view regeneration as a multidimensional process which can be successful and sustained only if spatial, social and economic factors are taken into account. In the workshop case, both the teams and the jury stressed a distinct connection between social activity, entrepreneurship and the development strategy together with the functional aspect of the area.

⁹⁰ Zintegrowany Program Rewitalizacji m.st. Warszawy do 2022 roku, Załącznik do Uchwały Rady m.st. Warszawy z dnia 17.09.2015 w sprawie przyjęcia Zintegrowanego Programu Rewitalizacji m.st. Warszawy do 2022 roku (*The Integrated Regeneration Program for the city of Warsaw by 2022*, Annex to the City Council Resolution of 17.09.2015 on adopting The Integrated Regeneration Program for the city of Warsaw by 2022).

⁹¹ Mikroprogram Rewitalizacji Dzielnicy Praga-Północ m.st. Warszawy, Urząd M. St. Warszawy, Dzielnica Praga-Północ, zał. 6 do programu Mikroprogram rewitalizacji dzielnicy Praga-Północ m.st. Warszawy (Urban Regeneration Microprogram for the District of Praga Północ in Warsaw, Annex 6 hereto), http://rewitalizacja.um.warszawa.pl, access date 09.03.2015.

⁹² The Integrated Regeneration Program for the city of Warsaw by 2022, op. cit.

⁹³ Happach M., Sadowy K. (ed.) Praga-Północ. Program przemian w sferze gospodarczej i przestrzennej, (Praga-Północ. Economic and spatial transformation program) OW SARP, Warszawa, 2014, p. 96.

A great advantage of Praga Północ district, especially in the area of the workshop activity, is a dense tissue of the urban character – street frontage and proportion of tenement houses that provide recognizable urban spirit; inner courtyards that form semi-private space; a considerable number of business premises and municipal buildings. In the context of urban development, the district is fortunate to have fine-grained structure – small-scale business premises apt for start-ups, offices for non-governmental organizations or for the use of local communities as a meeting place, community centers or utility premises such as a storage for bicycles and baby carriages.

Spatial structure of the district encourages natural coexistence of various social groups irrespective of their financial status. Municipal ownership structure of business premises allows to profile tenants and create favorable links between commercial activity on the local and supra-local level, and sociocultural activity. The recommendations included cooperation with premises tenants as an essential tool for reinforcing independence and entrepreneurship among the residents who could find employment, apprenticeship or internship opportunities in their immediate neighborhood.

The diversified composition of the jury and the engagement of its expert members and teams added a great value to the workshop method. A lack of the must-win attitude (selection of one winning work) facilitated an exchange of thoughts and experiences and reinforced the substantial value of the proposals submitted. During the session, many other techniques of understandable and attractive presentation were used, which can serve as a good practice for other participatory processes with inhabitants taking part. The practical dimension of the workshops was highly appreciated. It was driven by the intention of city authorities to include the recommendations in the Integrated Regeneration Program and thus all participants of the process were aware of the fact that their work would not be locked in the junk drawer.

Summary

A workshop method of work that engages specialists of different domains is a highly promising line of action in the field of participatory planning. The activities presented can serve as an example that can be freely modified and developed, depending on the goal of participation in a given area. Unquestionably, the forms of engaging inhabitants are the key issue. Workshops should provide the residents with an opportunity not only to express their opinions but also to confront them with viewpoints of other specialists or users of public space. In the next workshop session on the chain of local central areas, organized by the Warsaw branch of the Association of Polish Architects, this element was upgraded. The inhabitants submitted their proposals, commented on other ideas, and discussed the strengths and weaknesses of all presented projects. The inhabitants' awareness of the unique nature of the place, its character and function cannot be stressed enough. The effects of urban regeneration or improvement in the quality of life can be, however, appreciated only in the long run.

PARTICIPATORY GOVERNANCE Dominika P. Brodowicz

In Poland, participatory governance of the authorities and the society is possible in the form of top-down and bottom-up initiatives. The former is initiated and managed by local administration officials and includes e.g. public consultations and participatory budgeting⁹⁴. The latter concerns activities triggered by the community or nongovernmental organizations, primarily in response to specific legal regulations or official plans of the municipality. This category covers local initiatives, self-organized structures of inhabitants in a particular cause⁹⁵, e.g. the movement of 1st quarter mothers⁹⁶. In the context of ecology and dialogue concerning green urban space, there are numerous formal and informal organizations and social movements, including the urban Guerilla Gardening⁹⁷ or Urban Movements⁹⁸ which deal with bottom-up initiatives.

Speaking in general terms, participatory governance could be called the *Social Copernican Revolution*, which aims to build relations between citizens and local authorities and to put the society in the center of the system⁹⁹. However, considering the issue of greater engagement of urban dwellers, the aspect of participation should be brought up, or rather the declared will to participate in the decision-making processes. According to the Institute of Public Affairs¹⁰⁰, statistically every fourth Pole admits their willingness to take part in decision making through public consultations, expressing opinions,



Figure 19 - Groups of stakeholders that operate in urban space. Source: own study

⁹⁴ Maszkowska A., Sztop-Rutkowska K. (ed.), Partycypacja obywatelska – decyzje bliższe ludziom (Citizen Participation – decisions closer to people), Foundation Laboratory of Research and Social Action SocLab, Białystok, 2013, p. 93-148.

⁹⁵ Ibid.

⁹⁶ A social initiative for legal changes providing 12 months of parental leave, https://www.facebook.com/MatkilKwartalu2013/info

^{/?}tab=page_info.

⁹⁷ https://pl-pl.facebook.com/MiejskaPartyzantkaOgrodnicza, access date: 26.02.2015.

⁹⁸ http://ruchymiejskie.pl, access date: 4.03.2015.

 ⁹⁹ Boyte H., Stronger Citizens, Stronger Cities: Changing Governance Through a Focus on Place By Project for Public Spaces, 2013, http://www.pps.org/blog/stronger-citizens-stronger-cities-changing-governance-through-a-focus-on-place/, access date 1.03.2015.
 ¹⁰⁰ Survey on social participation carried out by the Institute of Public Affairs under the project Decydujmy razem (Let's decide together)

^{2011/2012,} all-Poland representative sample n = 1000, http://isp.org.pl/decydujmyrazem/o-projekcie,2.html, access date: 14.12.2014.

cooperating with the authorities, or accepting delegated tasks. Another significant issue related to participatory governance is defining the relevant stakeholders. The diagram below shows four basic groups.

Public consultations

Public consultations should be a process, i.e. a set of activities and tasks handled on the grounds of two-way communication and cooperation of all stakeholders. They can be applied to¹⁰¹:

- communicating and sharing knowledge;
- preparing plans and strategies based on needs and standpoints of the citizens;
- preventing potential protests of local communities.

Consultations on ecological issues should include the exchange of opinions of the local community and scientific reports offered by nongovernmental organizations while formulating land development plans or new investments that have an impact on the environment. The approach is reflected in legal acts, mainly in:

- Spatial Planning and Development Act of March 27, 2003;
- Act of October 3, 2008 on access to environmental data and environmental protection, involvement of the society in environmental protection and environmental impact assessment.

The local level is based on the following Acts:

- Municipality (Gmina) Self-government Act of March 8, 1990,
- County (Powiat) Self-government Act of June 5, 1998,
- Region (Województwo) Self-government Act of June 5, 1998.

Studies on the scope of consultation lay great stress upon the aspect of information flow. It is pictured as a *ladder of citizen participation*. The first and foremost level is information, the second is consultation and the third one participation. A concise characteristics is shown in Table 1.

Informing	Flow of information goes from a public entity to the society. Municipal authorities decide independently but inform of their actions.
Consulting	Two-way flow of information – a public entity informs of their plans before the decision is taken and takes note of community opinions.
Participating	Two-way flow of information – a public entity cooperates with social representative partners and work out a common decision.

Table 1. Ladder of participation

Source: own study on the basis of ABC PARTYCYPACJI - Co to jest partycypacja obywatelska? Laboratorium Partycypacji Obywatelskiej (The ABC of PARTICIPATION - a definition of citizen participation. Citizen Participation Laboratory¹⁰²

For all three levels of participation, especially in the case of consultations, a considerably broad spectrum of cooperation methods and techniques should be applied. In evaluation reports¹⁰³ on consultation processes in Poland the following methods are declared to be used: questionnaires, meetings, interviews, brochures, conferences, hotlines, workshops, expert reports, futures techniques as well as more and more popular tools of e-participation, internet forums, online surveys, chats, and e-mails.

An example of ecology-related consultations based on e-participation is a project of the Sendzimir Foundation called *Count on green. Participatory nature management in the city.* The project was run in 2013–2014 with an aim to implement interactive tools for managing urban nature. In the initial phase, project partners included the cities of Poznań, Łódź and Cracow, joined by Warsaw in late 2014. Under the project activities, an interactive platform was created – a city map (geo-survey with the use of geographical information system, GIS) with questions concerning urban greenery. Respondents could share their views on areas in need of intervention and on the existing good examples by marking certain points on the map together with their comments. According to the Foundation, over 4,500 users took part in the survey. The Internet users sent information about their favorite places but also about neglected areas¹⁰⁴, e.g. favorite parks, recreation areas as well as degraded land in terms of green infrastructure and visible antisocial activity such as alcohol consumption in public places, squares or even playgrounds for children.

Participatory budgeting

Historically speaking, the first ever participatory budget was adopted in 1989 in the City of Porto Alegre¹⁰⁵, Brazil. In Poland, participatory budgeting (PB) was introduced by the city of Sopot¹⁰⁶. The legal basis that laid foundations for PB is Article 5a of the Act on local self-government (gmina). The process is prepared and supervised by committees on participatory budgeting composed of officials, councilors and non-governmental organizations. Despite its relatively short history, in late 2013 over 70 Polish cities made a decision to launch PB¹⁰⁷. The popularity of PB among inhabitants is caused by the open character of the process (anyone is free to submit a proposal and vote) and extensive awareness-raising campaigns.

As far as Warsaw is concerned, the amount of PLN 50 million was allocated to PB projects in the 2016 municipal budget. 2,333 projects were filed by the last day of submitting projects in February 2015, followed by voting in June¹⁰⁸; the results were

¹⁰¹ Public Consultation in the EA Process: A Strategic Approach, World Bank, Washington D.C., 1999, p. 2-3.

¹⁰² http://partycypacjaobywatelska.pl/abc-partycypacji/co-to-jest-partycypacja-obywatelska/, access date: 26.02.2015.

¹⁰³ Maszkowska A., Sztop-Rutkowska K. (ed.), Partycypacja obywatelska – decyzje bliższe ludziom (Citizen Participation – decisions closer to people), Foundation Laboratory of Research and Social Action SocLab, Białystok, 2013; Ministry of Administration and Digital Affairs, Konsultacje społeczne – jak sprawić by były lepsze? Propozycja Kodeksu Konsultacji i ścieżka wdrożenia (Social consultations – how to improve the process? Proposed consultation code and the implementation guidance), 2012, https://mac.gov.pl/files/konsultacje-społeczne.pdf,

access date 24.02.2015. ¹⁰⁴ The report on current results can be accessed on www.licznazielen,pl/raport

¹⁰⁵ http://www.participatorybudgeting.org/about-participatory-budgeting/what-is-pb/, access date 24.02.2015.

¹⁰⁶ Kębłowski W., Budżet partycypacyjny – krótka instrukcja obsługi (Participatory budgeting – a manual), Instytut Obywatelski, Warszawa, 2013, p.6.

¹⁰⁷ Kraszewski D., Mojkowski K., Budżet obywatelski w Polsce (Participatory budgeting in Poland), The Stefan Batory Foundation, Warsaw, 2014, p. 8.

¹⁰⁸ https://app.twojbudzet.um.warszawa.pl/taskPropose/index , access date 9.03.2015.

announced in July that year. The range of proposed projects included initiatives related to urban ecology in a broad sense, e.g. extending the network of designated cycling routes, decorating streets with flowers, defining spots for picnic or recreation purposes or creating nature and educational trails¹⁰⁹. Also peculiar ideas were brought up, such as Bike Mordor (a cycle parking located in the office area in Domaniewska Street, commonly referred to as Mordor), butterfly meadows in Wola district (a concept for increasing the population of butterflies) or a hedgerow along the walls of the Warsaw Insurgents Cemetery¹¹⁰.

As a result of the 2016 voting in Warsaw, in which over 172,000 people voted, 622 initiatives will be implemented. The projects were categorized according to administrative boundaries and divided into concepts covering whole districts or their selected parts. The division adjusted to district boundaries helps to respond to the local demand, situation and direct needs of the inhabitants. Due to the quantity and diversity of the proposed projects, it is not possible to synthesize trends or derive general demands of the dwellers. For example, in Bemowo district the majority of people voted for the projects of *Bike lane and a sidewalk – Powstańców Śląskich Street and Mosquito-free Bemowo – nesting tower for swifts within the General Józef Bem Fort. In Mokotów district the most popular project was Recreation and leisure area of Górki Służewskie, in the district of Praga-Południe-Gocław A wildflower meadow for Gocław – EcoCity, while in Rembertów A flow park – multifunctional outdoor sport facility¹¹¹.*

The analysis of the 2016 Warsaw participatory budgeting leads to a conclusion that this democratic decision-making process has an added value. It would be probably impossible for the best team of experts, councilors, politicians and local officials to come up with such original and creative ideas as those proposed by the inhabitants themselves. Some examples deserve citing:

- Poop-free forts;
- Białołęka Cat Haven shelters for free-living cats;
- Green ABC an educational vegetable garden;
- Support for Mums rebuilding project for staircase with the baby-carriage access ramp;
- Mokotów breakfast in the open air.

It is worth mentioning that the third edition of participatory budgeting call for proposals has been recently closed. The allocated amount for 2017 is PLN 58 million. This time about 2,600 projects were submitted that will be put to the vote in June 2016¹¹². Both the number of new concepts and the amount earmarked for the PB increased

¹⁰⁹ https://app.twojbudzet.um.warszawa.pl/taskPropose/index?TaskProposeSearch_page od 1-20, access date 3.03.2015.
¹⁰ Ibid.

^{III} B2016 Warsaw Participatory Budgeting http://warszawa.naszemiasto.pl/artykul/budzet-partycypacyjny-ursus-2016-wyniki-glosowania,3451721,art,t,id,tm.html, access date 10.01.2016.

¹¹² http://twojbudzet.um.warszawa.pl, access date 16.01.2016.

as compared to the preceding edition. The biggest budget of PLN 7.5 million shall be distributed to the district of Bielany, while the smallest share of PLN 653 thousand to Wesoła district¹¹⁴. This edition is also full of original and bold ideas¹¹⁴, e.g. *Botellon* – open air get-together place for street-drinking.

Despite the enthusiasm for pro-social urban initiatives, in the opinion of experts, local governments face a number of challenges to maintain the participatory nature of the budgeting. The Civil Society Institute¹¹⁵ claims that many local governments across the country decided to allocate the financial means for the participatory budget to ingratiate the potential voters. However, there were cases when the voting results were not binding and thus the selected projects were not implemented, which translated into discontent and discouragement of all the engaged stakeholders. Yet, it must be stressed that in spite of bungles and evident examples of disregarding bottom-up concepts, the introduction of participatory budgeting had its share in activating the society and consequently in taking actions for the betterment of urban life quality, in line with actual and expressed needs of its users, i.e. of the city inhabitants.

¹¹³ http://tvnwarszawa.tvn24.pl/informacje,news,budzet-partycypacyjny-2016-z-rekordem-ponad-2600-projektow,191002.html, access date: 16.01.2016.

¹¹⁴ https://app.twojbudzet.um.warszawa.pl/2017/projekty p. 1-30, access date 16.01.2016.

¹¹⁵ http://www.instytutobywatelski.pl/21606/komentarze/budzety-jeszczenieobywatelskie, access date: 26.02.2015.

THE FUTURE OF CITIES

ECOLOGY CONSTRUCTIVELY 77

ECOPOLIS IN THE EUROPEAN DEVELOPMENT STRATEGY Mariusz Szabłowski

Progress in urban development

The process of urbanization is very dynamic. The proportion of city dwellers increased from 2% in the early 19th century to 13% in 1900, and up to 49% in 2005. In 2008 urban and rural population levelled off¹¹⁶. Analyses indicate that the urban concentration rate¹¹⁷ will exceed 60% in 2030¹¹⁸.

In many countries nearly all their population lives in cities. This happens for a number of reasons. The basic one is a limited size of a country (Singapore, Monaco – 100%), limited livable areas (Qatar and Kuwait – 98%) or vice versa, i.e. a vast area and a large distance between cities (Argentina – 89%). It can be concluded that low population density results in an increasing tendency of population to concentrate in cities (this tendency can be restricted by administrative, political or economic factors).

Iceland is a case in point, with the urban concentration rate of 94% and population density of 3 per square kilometer. Beside these general geographical aspects, the degree of urban concentration is strictly connected with social and economic development. The higher socioeconomic development, the greater the urbanization progress in the country. Even though specific geographical conditions of each country must be taken into account together with the growth of the settlement network, statistical data justify such a general assessment. The most urbanized countries are: Belgium (98%), Japan (92%), the Netherlands (89%), and Luxembourg (90%), while the least developed in terms of urban concentration are Uganda (15%), Nepal (18%) and Ethiopia (19%).

Urbanization in Europe varies from country to country. Residents of urban and suburban areas make up 72.4% of the EU-28 population¹¹⁹. Belgium has the highest rate (98%) and Bosnia and Herzegovina the lowest (40%). Poland's urbanization rate is 61%, which puts the country close to Croatia and Portugal¹²⁰. Generally speaking, urbanization of Poland is similar to the global average. Although this conclusion has no practical meaning, it helps to picture a simplified scale of urban development of our globe.

¹¹⁷ Percentage of the urban population.

¹¹⁶ http://www.un.org/esa/population/publications/WUP2005/2005WUP_FS1.pdf, access date: 22.01.2016.

¹¹⁸ World Urbanization Prospects: The 2005 Revision, Pop. Division, Department of Economic and Social Affairs, UN,

http://www.un.org/esa/population/publications/WUP2005/2005wup.htm, access date 22.01.2016.

¹¹⁹ http://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_on_European_cities#Main_statistical_findings, access date 22.01.2016.

¹²⁰ 2014 data based on http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS/countries?order=wbapi_data_value_2014%20wbapi _data_value%20wbapi_data_value-last&sort=asc&display=default, access date 22.01.2016.

It cannot be forgotten that today's level of socio-economic development is interconnected with limited employment in the agricultural sector. At present, even in less developed countries the employment level in agriculture is about 30-40% relative to overall employment. However, in the developed EU-28 countries it is very low, e.g. 3% in the Czech Republic, 2% in Sweden and 1% in Germany¹²¹. In Poland, employment in the sector of agriculture, fishery and forestry is 19.1%, which is the highest from all EU states. In Romania it is 16.2%, while in Italy 9.6%. An average EU-28 employment is 5.2%¹²².

Less developed European countries will gradually recover economically and the structure of employment will resemble the structure of socio-economic leaders. As a consequence, fewer and fewer Europeans will have economic reasons to live in rural areas. It should be noted that rural depopulation can become a very dynamic process because together with each individual who leaves a rural workplace, not only does the whole family migrate to a city but also people involved with settlement and economic structures. It is visible in the proportions of rural population (27.6%) and rural employment (5.2%). Statistically, each person employed in the agricultural sector corresponds to 5.3 rural residents. Accordingly, halving the rural employment (today Slovakia or France have this level of employment) may trigger migration to cities to a level of 13.5% of the global population, i.e. approximately 68 million new city dwellers¹²³. The process shall not be evenly distributed geographically. We can only assume that first, it will happen faster in the countries whose agricultural sector is less economically developed and second, that mainly attractive cities in terms of quality of life will benefit from these tendencies.

Challenges for the cities of Europe

The European Union, and practically the whole of Europe, is not a closed area. It is due to the values of cultural and legal EU foundations, but also to the pragmatic requirements of today's world. A high economic development requires an open society, a free exchange of thoughts and goods, especially of the intellectual capital. It poses a number of challenges for the European Union and its Member States. Looking far and wide, we cannot disregard inequalities visible in outer socio-economic systems, inequalities in their broad sense, as access to basic material goods, social care, security, freedom, drinkable water, clean air, and even space. It should come as no surprise that Europe, an attractive place to live: tolerant, well-off, safe, and with great development opportunities or at least social security, attracts people from places where those values are missing.

While the influx of people to Europe triggers risks, it also opens up new opportunities, e.g. increased competitiveness relative to other economic systems or lowered population ages.

¹²¹ 2014 data based on http://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?order=wbapi_data_value_2014+wbapi_data_ value+wbapi_data_value-last&sort=desc, access date 22.01.2016.

¹²² Agriculture, forestry and fishery statistics, Edition 2013, Eurostat, European Commission, 2013, p. 39.

¹²³ Own calculations, (27,6/5,2), EU-28 population in 2015 r. according to http://ec.europa.eu/eurostat/statistics-explained/index.php/ File:Demographic_balance,_1_January_2015_%E2%80%93_1_January_2080_(thousands)_PF15.png, access date 22.01.2015.

Waves of war refugees are a temporary phenomenon, however on a larger scale, a growing number of global population is the real challenge. The trend can affect especially Europe with its aging society. Since 1970 the global population has doubled. Today, it is estimated 7.39 billion¹²⁴. Such a dynamic growth results mainly from social and economic transformations in Asia. Asian cities are unable to provide the rapidly expanding population with adequate living conditions. Cities beyond imagining include e.g. Mumbai (India), not only because of its population but also inhumane living conditions, with 60% of people dwelling in slums¹²⁵.

In Europe, dynamic urbanization is over. However, it does not mean that European cities have no strategic challenges ahead, e.g. the two above tendencies, i.e. migration from rural areas and unattractive cities, as well as immigration from outside the European Union together with other problems such as energy security, decreased level of competitiveness, aging society, climate change and many others. It is worth stressing that decreasing urban population is also problematic as the existing resources must be maintained despite their ever smaller use. The situation of Polish cities is not different from the European average, although gradual de-urbanization is untypical and thought-provoking (from 62% in 2000 to 60.5% in 2012¹²⁶). For sure, this trend is contrary to the development of the modern world and thus it is going to be a short-term course. The falling urban population can be compared to a corporation that is losing its market share and facing bankruptcy. Both corporations and cities must implement strategies forestalling the worst-case scenario provided they want to keep their head above the water. By way of example, if they cannot count on quantity, they should go for quality.

Urban strategies

Despite its decreasing economic importance, especially in relation to Asia, Europe remains at the global forefront in terms of life quality. Maintaining this competitive edge may in the future attract intellectual capital and therefore economic resources. There are 15 European states among the 20 countries with the highest social development (Poland ranks 29th!¹²⁷). Even though the quality of life index relates directly to economy and health, it results indirectly from the conditions of the natural and anthropogenic environment.

The quality of urban and social environment strengthens the quality of life. The term quality includes aspects such as spatial order, cultural and historical values, social relations, participatory governance, and public security. High quality urban environment can be reached when due care is exercised to leisure and recreation opportunities, disease prevention, health care, and employment, especially in the sector of green technologies and management efficiency (communication, transport and spatial distribution). High quality urban environment bears fruit with premium social relations.

¹²⁴ Based on http://www.worldometers.info/world-population/ where current changes in global and national population figures are presented, access date 22.01.2016.

¹²⁵ https://www.wsws.org/en/articles/2009/06/mumb-j13.html, access date 22.01.2016.

¹²⁶ Key facts about demographic trends in Poland by 2013, press kit of 30.01.2014, Central Statistical Office of Poland.

¹²⁷ WIn 2016 http://www.numbeo.com/quality-of-life/rankings_by_country.jsp, access date 22.01.2016.

For a number of reasons the development strategies for European cities are far-reaching in terms of time. Firstly, urban substance is long-lasting. Secondly, any urban transformations are time-consuming and planned for decades. Thirdly, it takes generations to make social changeover in terms of active citizenship, participation and engagement. In cities, people and their attitudes are crucial as there are no cities without people.

Therefore, harmony and long-term, sustained balance is the key condition for urban development. Future generations are not going to be grateful for all the changes. That is why today's decisions must take into account current needs, but should not limit the development potential of future generations and future aspirations. It applies to natural resources, but also to space greedily usurped out of overconsumption, irresponsibility and disrespect for the generations to come.

Especially local authorities should revise their approach to urban governance: *better instead of more*. Expansion of urbanized areas can be replaced with a better use of already developed areas, in line with principles of new urban planning (described in Chapter Two) and sustainable development.

Local authorities must appreciate the social potential of city dwellers and entrepreneurs. They must understand that a contemporary city, no matter how small, is a complex sociotechnical organism. Urban management increasingly employs IT networks, which save enormous amounts of energy and resources, raise the level of security in the city, enhance the quality of life, and pave the way for new services.

MONITORING CITY LIFE Dominika P. Brodowicz

The problem of monitoring the life and development of urban space is strictly related to the idea of smart cities which, according to the Massachusetts Institute of Technology (MIT)¹²⁸, a leading research center, connects various municipal structures (transport, security services, buildings, etc.) through digital ICT systems (the "nervous system" of the city), sensors (comparable to the senses) and software (akin to knowledge and cognitive competences). As such, it involves the use of modern technologies to boost the interaction and responsiveness of exchanges between the city and its residents (including civic participation) and to increase the efficiency of municipal infrastructure such as the water supply system, public transport, energy supply, and urban engineering¹²⁹. Smart connections among the systems and monitoring based on updated information help manage the city effectively ensuring that participants in city life share information. Today, the city authorities can choose from a wide range of IT and ICT solutions designed to facilitate management. These include the following¹³⁰:

- measuring devices such as smart water and electricity meters giving accurate readings of consumption in real time and sending the information to distributors on an on-going basis to improve transparency and contribute to reliable consumption forecasts (as in Środa Wielkopolska, where Orange, a company associated so far with mobile telephony in Poland, introduced smart water meters which made it possible to detect illegal water use);
- smart city monitoring which enables users not only to observe traffic, but also to
 automatically detect threats and communicate them to security services (as in
 the case of the systems by Huwaeii including video cameras with face recognition
 software used in Asian and Western European cities);
- municipal information systems which may be used to communicate threats and delays to users of public transport in tramways, buses, stops or wherever it is possible to mount displays or send the information directly to inhabitants through applications on mobile devices (Intelligent Transport System – ITS in Poznan).

¹²⁸ Mitchell W., Intelligent cities [in:] e-Journal on the Knowledge Society, 2007

¹²⁹ http://smartcity2020.pl, access date 18.01.2016.

¹³⁰ Ibid.

In general, the idea of a smart city involves the use of ICT technologies to develop the social and environmental capital as well as to ensure economic growth, the goals which are linked to the premises of sustainable development¹³¹.

Given the environmental challenges facing today's cities, special care should be taken to monitor air pollution, the amount of waste, road traffic congestion, security, and early warning systems. This dovetails with issues related to climate change, resiliency and the ability to respond quickly to crises (the importance of that is illustrated by the example of the UK which battled floods caused by Storm Desmond at the end of 2015, with inhabitants suffering the consequences of having been poorly informed about the danger¹³²).

Monitoring may cover different aspects of city life such as the number of cars driving into city centers, the amount of municipal waste and its processing, waste size and river levels, and even patterns of behavior and mobility displayed by residents. This is part of a bigger trend which, in the most general terms, may be called urban analytics based on urban data related to a range of economic, social and environmental factors. Its aim is to optimize the way a city is managed. This is achieved more and more often by drawing upon solutions taken from IT including¹³³:

- sensors data gathering;
- data bases storage;
- analytical software studying trends, simulations;
- data visualization tools reports, Geographical Information System (GIS); and
- communication infrastructure mobile devices (WI-FI, broadband internet, fiber optic cables).

In addition to quantitative data, it is also important to analyze qualitative data reflecting the sense of satisfaction and safety of living in the city or, more broadly, the quality of life. This is particularly important in the light of forecasts suggesting that the population of people living in urban areas may exceed 70% by 2050, whereas in the 1950s urban dwellers accounted for 30% of the global population¹³⁴.

Modern cities face an important challenge of striking a balance between population density and life quality, especially when it comes to giving the inhabitants an opportunity to use public space, greenery areas, cycle lanes, and boulevards¹³⁵. In the context of environment protection, gathering and analyzing data related to city life may prove a tall order for monitoring bodies. This is not only due to incomplete data, but also a lack of understanding of the problems they relate to. According to the findings of a study called Urban Climate Change Governance Survey carried out

¹³¹ Pospieszny P. Chapter 5 Green Urban Technologies in Brodowicz, D, Pospieszny P., Grzymała Z. Eco-cities, e-book, CeDeWu, Warszawa 2015, http://administracja.sgh.waw.pl/en/dop/projects/eic/Documents/E-book_2_Eco-cities_do_zatwierdzenia_do_druku.pdf.

¹³² http://www.bbc.com/news/live/uk-35015243, access date 8.12.15.

¹³³ Pospieszny P. *op.cit*.

¹³⁴ UN World Health Organization Global Health Observatory (UN WHOGHO) http://www.who.int/gho/urban_health/situation_trends/ urban_population_growth_text/en/ access date 8.12.15.

¹³⁵ Steffen A.(ed.), World Changing, a user's guide for the 21st century, 2011.

in 2014 by MIT and ICLEI¹³⁶ on a group of 350 cities and local governments from all over the world, almost half of the respondents admitted they either do not have access to or cannot correctly analyze urban data provided by reporting bodies. The same goes for information about natural threats. On the other hand, studies carried out this year by Domaradzka, Sadowy and Brodowicz for the Warsaw Centre of Public Communication¹³⁷ identified the following challenges and problems related to obtaining data and monitoring changes in the capital:

- measuring and studying public space in real time including urban audits (periodical measurements of the number of people in a given space, analysis of CCTV recordings, use of sensors);
- using advanced communicators and social media while communicating to the general public the issues related to public space and local centers;
- providing data and consulting results with the largest possible group of citizens and NGO representatives;
- incompatible data recorded in different formats.

In general, anyone who lives, works or stays in a city, be it a municipal public servant, entrepreneur and the so-called ordinary citizen, is a stakeholder who generates urban data and is interested in their monitoring. We should also take account of external institutions and bodies such as the European Commission with the Eurostat (for example the Urban Audit program¹³⁸), whose activities include gathering and analyzing municipal data on economic, social and environmental topics.



Figure 20 - Bodies generating and using urban data. Source: Own study.

¹³⁶ http://www.urbanclimatesurvey.com, access date 8.12.2015.

¹³⁷ Domaradzka, Sadowy, Brodowicz, Locality, Public Space, Social Capital, aims, achievements and challenges related to the engineering of public space in Warsaw in the context of the Warsaw Social Strategy together with suggested methodology of monitoring its implementation – report prepared for the Warsaw Centre of Public Communication Warsaw, 2015.

¹³⁸ http://stat.gov.pl/statystyka-regionalna/badania-regionalne/urban-audit-250/ access date 8.12.15.

City manager and reporting bodies

There is probably no metropolitan city in Western Europe which would not systematically monitor and study indicators related to the life of inhabitants and the functioning of the city, including safety and public transport. Also, technological solutions based on monitoring are more and more often part of the urban ecology, as broadly understood, i.e. green buildings, optimizing the use of energy and water as well as low-emission public transport. Some of the cities using such solutions are Amsterdam, Barcelona, Vienna, London and Aarhus in Denmark studied by the Ecology Constructively project¹³⁹.

Thanks to Smart Aarhus, a project launched in 2012, Aarhus stands a chance of becoming a leader in modern communication technologies used as part of a partnership model of municipal management supported by active and real involvement of stakeholders in the decision making process. The project is developed not only by the Aarhus City Hall, but also by research bodies including the VIA University, Aarhus University and the Danish Technological Institute. The initiatives launched under the Smart Aarhus scheme include not only those which analyze open municipal data (Open Data Aarhus), but also the ones contributing to open dialogue and exchange of ideas with citizens about controversial issues (Aarhus Challenges)¹⁴⁰. Thanks to one such initiative, Open Data Aarhus, inhabitants can use a dedicated website to access municipal data on, for example, road traffic and air quality. The data may be used by authors of mobile applications to develop tools for mobile device users in the fields of safety and health¹⁴¹ (an equivalent solution in Poland is called Apps4Warsaw). Another example of a Smart Aarhus initiative is Aarhus Challenges and the related event called Social Days, during which a broad group of stakeholders, including organizations, entrepreneurs, higher education institutions and inhabitants, discuss problems the city is facing and jointly look for solutions. Relatively cheap to implement, their ideas focus on starting gardens, painting buildings or developing a cultural offer for the elderly. Most importantly, the ideas are posted online and volunteers who want to develop them are registered, all of which is supposed to ensure that they will in fact be put into action¹⁴².

Polish examples of goods practices of how to monitor the city by municipal authorities and reporting bodies include the "Warsaw Barometer" and the "Quality of Life in Poznań". The Warsaw Barometer is a periodical study carried out since 2003 on a random sample of 1,100 Varsovians aged 15 and more through direct interviews¹⁴³. The questions in the interviews include those about public transport, security and welfare, as broadly understood. Similar topics were raised in the study carried out in Poznań called "Indicators of the Quality of Life of Residents of Poznań". The study

¹³⁹ http://www.ekologiakonstruktywnie.pl/smart-aarhus/, access date 18.01.2016.

¹⁴⁰ Ibid.

¹⁴¹ http://www.smartaarhus.eu/projects/open-data-aarhus, access date: 18.01.2016.

¹⁴² http://www.smartaarhus.eu/projects/aarhus-challenges, access date 18.01.2016.

¹⁴³ http://www.um.warszawa.pl/o-warszawie/warszawa-w-liczbach/2015, access date 8.12.15.

resulted in the publication of brochures entitled "Quality of Life in Poznań" in 2006, 2008, 2010, and 2013. In addition to analyzing existing data, a number of research methods involved city residents directly, including through interviews. For example, air quality was described by presenting data about average annual CO concentrations in the Poznań agglomeration and comparing those to opinions about the topic expressed by Poznań residents¹⁴⁴.

Companies

Municipal data are also a source of information about the needs of potential customers. It is therefore hardly surprising that this area is of interest for entrepreneurs, particularly those companies which are somehow related to the idea of a smart city, and whose customers (and often product co-creators) are residents and city authorities.

In 2014, Warsaw ranked second in the Mayors Challenge contest, winning €1 million for the implementation of a project developed by Ifinity¹⁴⁵. Participants in the contest compete for funds to implement solutions considered creative and innovative by global standards in the "problem areas" of the city in order to improve the quality of life. The areas focus on health care, aging of societies, unemployment, social involvement, safety, and public transport organization¹⁴⁶. The contest is held by the Bloomberg Philanthropies foundation managed by Michael Bloomberg (former Mayor of New York City). Originally only addressed to American cities, since 2014, it has been open for European cities with a population of over 100,000 people¹⁴⁷. Coming back to the awarded project developed by the city of Warsaw and Ifinity – its aim is to use sensors (beacons) to create a navigating system for Warsaw residents, including the visually impaired, in public institutions, means of public transport as well as in tourist and cultural areas¹⁴⁸.

Another example of how the city can cooperate with entrepreneurs is the Municipal Contact Point 19115¹⁴⁹. Inspired by the solution 311 implemented in New York, Poland's capital city and Orange Polska created a responsive, round-the-clock system of reporting malfunctions, requesting interventions and lodging requests which also serves as a virtual and open knowledge repository. According to the data made available by the city, 569,939 requests were registered in the two years between 4 November 2013 and 4 December 2015. They concerned such topics as greenery, public transport, municipal waste management, water supply, and sewage systems¹⁵⁰.

¹⁴⁴ Miasto Poznań, Jakość życia w Poznaniu, 2013 (The City of Poznań, the quality of life in Poznań, 2013), http://www.poznan.pl/mim/s8a/ raporty-i-analizy,doc,111/raporty-i-analizy,50849.html, access date 8.12.15.

¹⁴⁵ http://tvnwarszawa.tvn24.pl/informacje,news,stolica-zdobyla-milion-euro-nagroda-za-virtualna-warszawe,142839.,

access date 9.12.15.

¹⁴⁶ http://www.mikebloomberg.com/news/bloomberg-philanthropies-announces-mayors-challenge-winners/, access date 18.01.2016.

 ¹⁴⁷ http://philanthropynewsdigest.org/news/bloomberg-philanthropies-announces-winners-of-2014-mayors-challenge, access date 18.01.2016.
 ¹⁴⁸ http://getifinity.com/milion-euro-na-beacony-w-warszawie/, access date 9.12.15.

¹⁴⁹ https://warszawa19115.pl, access date 9.12.15.

¹⁵⁰ https://warszawa19115.pl/web/portal/zgloszenie-awarii-lub-interwencji, access date 9.12.2015.

Society

Not only do city residents receive data, but also generate them. Equipped with their internet-connected mobile phones, tablets or laptops, they may share information, make comments and use data for their own purposes. One of the practical consequences of that is the rapidly growing sector of city applications developed by private individuals with their own money or created with the support from companies or municipal budgets.

Competitions such as "Startup Poznań_Hakathon"¹⁵¹ or "Apps4Warsaw. Competition for city apps"¹⁵² offer an opportunity to register ideas for applications, including those related to ecology and environment protection. Another example is "Kraków Smog", an application showing current levels of air pollution in and around the city. Application data come from automatic measurement stations of the Regional Inspectorate of Environmental Protection in Kraków¹⁵³.

City indicators and information about the life of Warsaw residents are also monitored by the "City Observatory"¹⁵⁴. The website presents data on air quality, weather conditions, city bikes, and flight radar information. One of its vital functions is that it aggregates local news from the most popular sources used by Varsovians and from the social media. It also evaluates mobile applications dedicated to urban space and cultural events in real time.

Summary

There is a wide range of tools designed to communicate, gather and monitor municipal data concerning both the current and historical functioning of a city. Importantly, however, city managers (City Hall, offices) and users (residents, entrepreneurs) should actively exchange information. The boundary between data creators and recipients is becoming blurred. Participants in the life of the city may communicate and respond in real time to events taking place in the urban space, including those related to flooding, formation of heat islands and concentration of chemical compounds in the atmosphere.

¹⁵¹ http://startup.poznan.pl/hackathon/, access date 8.12.15

¹⁵² https://konkurs.danepowarszawsku.pl/pl/news/zwyciezcy-konkursu, access date 9.12.15.

¹⁵³ https://play.google.com/store/apps/details?id=pl.leftbrain.smogkrk&hl=pl, access date 9.12.15.

¹⁵⁴ http://miejskieobserwatorium.pl, access date 9.12.15.



The development of eco-innovation has a substantial commercial potential in all sectors of the economy. In the 2007–2014 Competitiveness and Innovation Framework Program, the European Commission set up the Eco-Innovation Observatory (EIO), tasked with the compilation of integrated sources of information and analyses of the eco-innovation trends and markets in the period 2010–2013. The data about eco-innovation are to be used for the development of the green market as a source of Europe's competitive edge.

Although the project has been finalized, the methodology of research on eco-innovation, the data bases and the series of analyses and studies performed are a precious contribution to further work on the innovation issue¹⁵⁵. The EIO-adopted definition of eco-innovation integrates environmental aspects with a systemic approach to the life-cycle:

Eco-innovation is the introduction of any new or significantly improved product (good or service), process, organizational change or marketing solution that reduces the use of natural resources (including materials, energy, water and land) and decreases the release of harmful substances across the whole life-cycle¹⁵⁶.

The life-cycle refers to a system – any entity in existence thanks to the cooperation of its component elements. Systems may be natural or artificial; they vary as to the level of complexity, manner of coming into being, objectives and functions. However, all share one feature – they are not eternal. According to Czesław Cempel, one of the prime observations and generalizations of the overall system theory is the periodic aspect of all the natural and artificial as well as animate and inanimate systems. Systems come into being in a natural or artificial manner, are alive or in operation for an assigned period of time, following which their activity dies down and they dissolve into their environment¹⁵⁷.

¹⁵⁵ The Eco-Innovation Observatory, http://www.eco-innovation.eu/index.php?option=com_content&view=article&id=22<emid=23, access date 22.01.2016.

¹⁵⁶ Eco-Innovation Observatory Methodological Report, August 2012, s. 8, http://www.eco-innovation.eu/images/stories/Reports/ eio_methodological_report_2012.pdf, access date 22.01.2016.

¹⁵⁷ Cempel C., Teoria i Inżynieria Systemów, materiały wykładowe, http://neur.am.put.poznan.pl/is_2005/R4_2005.pdf, access date 22.01.2016.

Natural cycles are environment-enclosed, while artificial ones have their beginning and end in the users, as they are born out of their needs and die down when the need or the capacity for the satisfaction of this need disappears. A decision to set up an artificial system should take into consideration all the costs of the cycle, or the costs of life (functioning of the system) and, a matter often overlooked, related external social and environmental costs. An ecological approach assumes the construction of systems related in such a succession that the life-cycle of the last one might result in a shift from an artificial to a natural system via a return to the environment.

The EIO model established out of the need for research on the status of eco-innovation in the European Union Member States differs from the model of economic innovation measurement defined in the *Oslo Manual*, or an international methodological textbook for statistical research on innovation recommended in the countries of the OECD and EU¹⁵⁸, since it concerns innovation in the enterprise sector¹⁵⁹ (production, raw materials and services). The manual authors underline the fact that *innovation is also important for the public sector. However, less is known about innovation processes in non-market oriented sectors*¹⁶⁰. The definition sounds as follows: An *innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations*¹⁶¹.

The eco-innovation model enters new areas of consideration, covering a context far wider than the economic one, incorporating the public sector with a fundamental significance for implementing ecological innovation and the social innovation area. It is precisely the social and cultural factors that define the market of green products, such as: lifestyle and eco-friendly approach, group behavior and capacity for cooperation and for working out a common position, tolerance and openness to change, engagement of the creative social potential for solutions benefitting the common good. Importantly, the society makes up this market not only as consumers but also as prosumers and social creators of innovation.

EIO has come up with an aggregated factor for the presentation of eco-innovation results in the EU Member States. It sums up the accomplishments in the many and varied aspects of eco-innovation, grouped into five areas: eco-innovation expenditure, eco-innovation activities, eco-innovation scope, impact on the efficiency of resource management, and socio-economic effects.

Interestingly, a given solution may be seen as positive, as economic innovation, and at the same time as negative, as eco-innovation. An example of the above is the improvement of the city car parking system which helps park more cars faster and

¹⁵⁸ Oslo Manual, Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition, OECD, Eurostat, 2005.
¹⁵⁹ Ibid. p. 16

¹⁶⁰ ZPrinciples of collecting and interpreting data about innovation, OECD/European Communities 2005, Ministry of Science and Higher Education, Department of Science Strategy and Development – after the Polish edition, Warszawa, 2008, p. 18.

¹⁶¹ *I*bid., p. 48.

cheaper. This solution may be profitable and satisfactory for car users, may reduce congestion, commuting time and fuel consumption. Improved parking conditions may increase the percentage of city dwellers using their own cars and decrease the number of public transit passengers. This will push up the costs of public transport per person, which as a rule results in a lowering of the service quality (e.g. the frequency of public transit decreases) and a further drop in the use of the rolling-stock. All in all, a parking innovation may generate a loss for the urban community: a deterioration of urban air quality, a lesser quality of public transport services, an increase in the maintenance costs, and a higher congestion.

Instances of solutions with mutually exclusive benefits on a micro and macro level may be solved in a variety of ways: through external regulation, stimulation of a particular behavior of entities and creation of conditions conducive to a social *consensus* via participation. Hence the importance of social capital for the development of eco-innovation. According to EIO, the social capital is composed of the following:

- human capital and knowledge seen as a capacity for learning, knowledge and skills management,
- organization capital seen as a capacity for organization and organization management,
- networking capital seen as a capacity for cooperation and involvement in collective activities.

The other capitals which determine the activity of individuals, apart from the economic, technological and natural ones (the last one meaning the satisfaction of the needs for natural resources), of prime significance is the cultural capital as it impacts consumer behavior and attitudes towards change, innovation and risk.

Naturally, apart from capitals, pro-innovation activities are influenced by the legal and political framework (legal system, standards and norms, intellectual property rights, fiscal policy, public procurement, and donations). These areas have the potential for impacting the directions of change and they create policy tools.

Despite the aforementioned differences in the definition and measurement of economic and ecological innovation indicators, the accomplishments of individual countries in both areas are surprisingly similar. A comparison of the Eco-Innovation Scoreboard (Eco-IS) and the Summary Innovation Index (SII) in the European Union Member States for 2013 (Figure 21) demonstrates that the value of both indicators for a given country is similar. It results from the fact that a part of innovations-related data is a common measurement base and additionally some indicators not covered by the measurement are correlated with the indicators covered by another measurement model¹⁶².

¹⁶² Por. Speirs J. Pearson P., Foxon T., Adapting innovation systems indicators to assess eco-innovation, DIME working paper, Brussels, 2008, www.dime-eu.org/files/ active/0/Foxon_Speirs_Pearson_final.pdf, access date 22.01.2016.



Figure 21 – a graph of Eco-IS and SII indicators for the 28 EU Member States in 2013. ISS indicator re-scaled for the purpose of the graph^{163.}

Although out of the 28 countries two, i.e. Cyprus and Spain, have significantly different indicator levels, the explanations of these cases can be found in the unique conditions of a given country. The authors of *Eco-innovation in Cyprus, EIO Country Profile. 2013* indicate the difficult economic situation of the country, its economy founded on the SME sector, incapable of creating a desirable concentration of powers for efficient research and development¹⁶⁴, hence the relatively low Eco-IS indicator as compared to the country's capitals. Furthermore, due to the economic crisis, in Cyprus the indicator dropped year-on-year from 74 to 43, i.e. as much as 42 percent. If the year 2012 had been used as a baseline, both innovation indicators would have been similar.

In turn, in Spain the eco-innovation indicator is significantly higher than the indicator of economic innovation. The principal reason is the exceptionally high pro-ecological activities in the country which delivers above-average results relative to own traditional capitals, i.e. economic, technological and natural. Spain is a European leader: the Eco-Innovation Scoreboard was 199 (100 is the average for EU-28) and was the highest among the European Union Member States. For the sake of comparison, the indicator of Cyprus was 41 and earned it the penultimate position in the ranking (only Greece has a lower indicator of 28)¹⁶⁵.

¹⁶³ The scale adopted assumed equal indicators for EU-28 (for 2013, Eco-IS = 100%, SII=0,554; then Eco-IS=180,5*ISS=100),

own calculation after Hollanders H., Es-Sadki N., Innovation Union Scoreboard 2014, EU, 2014.

¹⁶⁴ Papanagnou G., Eco-innovation in Cyprus, EIO Country Profile. 2013, p. 5.

¹⁶⁵ The indicator of eco-innovation activity for Poland in 2013 was at the level of 42, a third result from the bottom; data source: http:// database.eco-innovation.eu/indicators/view/271/1, access date 22.01.2016.

At this point we should make a reference to Poland, whose economy is one of the least effective in the management of resources and one of the least energy efficient EU economies. In 2010 Poland ranked fourth from the bottom, in 2011 last, and in 2012 third from the bottom. Far more worrying than the distant position in the ranking is that over the past four years in the six least innovative countries of Europe, only Poland showed a drop of the ECO-IS. Poland has a low efficiency in all the components of eco-innovation, in particular in research and development and investment in innovation¹⁶⁶.

A benchmarking of the indicators of ecological and economic innovation shows that both indexes are dependent on the same capitals. If the indicators differ, this may stem from special circumstances (Spain, Cyprus). Since the economic, technological and natural capitals are common for both kinds of innovation, the social and cultural capitals have a similar significance for the innovativeness of a country, although in the case of ISS the impact of these factors is not directly factored in the measurements ¹⁶⁷. For this reason, all the activities which increase the level of the social and cultural capitals should increase economic and ecological innovation.

Cities Innovative By Nature

Cities make up the framework of social and cultural activities. In the government document *National Urban Policy 2023*¹⁶⁸ we read as follows:

Cities are places of concentration of science, public service and business and the creation of economic growth. They form nodes of networks of companies, employees, knowledge and skills, which contributes to a higher productivity and growth dynamics of these areas. The city, even the smallest one, is moreover a cultural phenomenon and a vehicle of civilization. Widely-construed resources of cultural heritage, their preservation and protection, are of key importance for the cultural identification and the sense of identity of residents as well as for the economy and education.

If eco-innovation is contingent on the social and cultural capitals, and the city is the area of growth of these capitals, then the development of cities will contribute to innovation growth. Therefore cities benefit from eco-innovation, thanks to which life is better, but they are also first of all their source in that they make up a set of creative capital and inspiring environment, facilitate the exchange of goods, services and thoughts. The better they do it, the higher the will and capacity for innovation, and furthermore the more innovation, the higher the will and capacity for creating even new innovation. This is a feedback situation: life quality – innovation quality – life quality. It is therefore hardly a coincidence that cities with a high life quality are located in innovative countries. For example: Vienna ranks first in the global 2015 Mercer

¹⁶⁶ Miedziński M., Eco-Innovation Observatory, Eco-innovation in Poland. EIO Country Profile, 2013.

¹⁶⁷ Cf. Hollanders H., Es-Sadki N., Innovation Union Scoreboard 2014, EU 2014, p. 8.

¹⁶⁸ National Urban Policy 2023, a document adopted by a resolution of the Council of Ministers on 20 October 2015, Warszawa, 2015.

City Rankings¹⁶⁹ and Austria ranks eighteenth on the Global Innovation Index list¹⁷⁰. Zurich in Switzerland, the second and first position, respectively; Munich in Germany fourth, and twelfth. Copenhagen in Denmark – ninth and tenth. Amsterdam in the Netherlands – eleventh and fourth. These are the top cities; for the sake of comparison, the highest-ranking Polish city, Warsaw, ranks 79th and Poland as a country ranks 46th.

A question arises which can hardly be answered today: what methods of supporting innovation, especially ecological innovation, strongly linked to social capital (demanding clients of green solutions) will be more efficient. Should we support innovation through creating opportunities or through creating needs and dreams? Should we support research and development processes, green technologies markets or the creative environments where innovation is born? The city is one such creative environment; it is a cultural phenomenon which binds all the capitals into one efficient and coherent socio-economic system. The better the system, the more economically effective and living-friendly, the higher its capacity for sustainable development.

The Smart City

Wojciech Pęski indicated in 1999 that the potential of a city is a sum total of the elements of its structure: science and technology parks, clusters of small and medium-sized companies and infrastructure¹⁷¹. At the same time, William J. Mitchell developed the concept of a city as a living organism which is a kind of robot on a large scale, with a nervous system capable of sensing and responding to the needs of the residents and the changes in the external conditions¹⁷².

A number of research and development activities connected with Mitchell's concept of a smart city implemented in the early 21st century have demonstrated the economic potential of this approach, or in principle of the practical implementation of this approach. The leading projects include: Mitchell's research project run at MIT called SmartCities¹⁷³, the European IntelCities project¹⁷⁴ for research and development of digital management, planning and social participation, a continuation of SmartCities, MIT Citi Science project¹⁷⁵, and the SmartAarhus project described constructively in the good practices of Ecology¹⁷⁶.

The Smart City concepts assumes that a new approach to integrating design and technology in the city will allow their better adjustment to the needs of the residents and a more efficient use of the resources. The implementation of this concept in Aarhus showed that a smart city creates new markets and moreover opens up the potential for

¹⁶⁹ source: https://info.mercer.com/Quality-of-Living-Ranking-2015.html, access date 22.01.2016.

¹⁷⁰ source: https://www.globalinnovationindex.org/content/page/gii-full-report-2015/#pdfopener, access date 22.01.2016.

¹⁷¹ por. Pęski W., Zarządzanie zrównoważonym rozwojem miast, Arkady, 1999.

¹⁷² https://www.media.mit.edu/news/obituary-mitchell, access date 22.02.2016.

¹⁷³ p2007, http://smartcities.media.mit.edu/, access date 22.02.2016.

¹⁷⁴ A project within the 6th EU Framework Program Technologies of the Information Society of 2004, http://intelcities.iti.gr/intelcities, access date 22.02.2016.

¹⁷⁵ http://cities.media.mit.edu, access date 22.02.2016.

¹⁷⁶ http://www.smartaarhus.eu, access date 22.02.2016.

completely new, still unrecognized markets and products¹⁷⁷. The SmartAarhus project launched in 2013 clearly demonstrates the capacity of the urban environment as an economic entity, independent of the potential of its components (the systems within it). Two elements are or major importance: free access to data about the status of the city and social inclusion. The project is a component of activities triggered by social needs and consensus. At the time of the publication, SmartAarhus is composed of 34 activities, carried out by teams of city authorities, science institutions, enterprises, organizations, and residents. The strength of the project consists in its automatic adjustment to ever new challenges and needs. This is no super-robot, though, but a biostructure composed of active citizens, committed to the social agenda, acting on the information provided by the urban system.

Recognizing this fact may possibly inspire further pursuits of a sustainable city of the future. We lack adequate tools for the prediction of future events. Sometimes business does it better than science. Possibly because in selected cases practice precedes science, or perhaps because the risk and the action taken becomes a self-fulfilling prophecy? Asking questions about the future, it is in order to make note of initiatives supported by enterprise leaders, who have proved the ability to predict (create) the future.

Google Inc. launched in June 2015 a global project Sidewalk Labs: "Our mission is to improve life in cities for everyone through the application of technology to solve urban problems"¹⁷⁸. In October 2015, during the COP 21 Climate Change Summit Paris, a Breakthrough Energy Coalition was set up, a group created in the University of California by 30 eminent entrepreneurs from the entire world, including Bill Gates, Mark Zuckerberg and Georg Soros. Its manifesto points out: "The existing system of basic research, clean energy investment, regulatory frameworks, and subsidies fails to sufficiently mobilize investment in truly transformative energy solutions for the future. We can't wait for the system to change through normal cycles"¹⁷⁹.

There is every reason to believe that thanks to technology cities can be better places for living along with the attendant decrease of external environmental costs. Paradoxically, the implementation of the idea of robot-cities strengthens the social and human aspect of the city.

¹⁷⁸ http://www.smartaarhus.eu/projects/open-data-aarhus, access date 22.02.2016.

¹⁷⁹ http://www.breakthroughenergycoalition.com/en/index.html, access date 22.02.2016.

FILMS ABOUT ECOLOGY CONSTRUCTIVELY

FILMS ABOUT ECOLOGY CONSTRUCTIVELY Krzysztof Baczyński

The series of documentary and educational films comprises 24 episodes produced in 2014–2015. Local experts, planners and inhabitants as well as the representatives of local, regional and national authorities took part in the films. The projects show the best practices in sustainable development or urban areas in eleven European countries: Germany, Belgium, the Netherlands, the United Kingdom, Ireland, Sweden, Croatia, Malta, Denmark, Italy, and Kosovo.

We expect that the films will benefit all stakeholders interested in sustainable development, especially public authorities, urban planners, architects and investors in their daily work of building better cities. Hopefully, the wide spectrum of subjects and challenges raised in the films will be attractive and useful in educational work.

Germany

Germany is the country in which the film production started. Two opposing approaches to urban regeneration and sustainable development were shown. The film *Germany, Bad Belzig – ZEGG Ecovillage* is about a residential project located 80 kilometers off Berlin where one hundred inhabitants live in full harmony with nature. This experimental complex promotes an alternative way of life in an urbanized area, implements cutting edge eco-technologies and disseminates knowledge about sustainable development. A distinct example is presented in the film *Germany, Hamburg – Hafencity, an exemplary model of urban development.* It is currently the most extensive ongoing urban regeneration initiative in Europe. Hamburg sets new standards in terms of urban development by maintaining a metropolitan character and ecological balance. The project concept is based on incorporating specific industrial topography, access to water and a typical harbor atmosphere and at the same time on providing protection against undesirable hydrological phenomena.

Belgium

Belgium is proud of its impressive achievements in eco-innovations concerning architecture and land management. The film *Belgium, Brussels – regeneration of riverside Brussels Greenfields* presents a pilot project of postindustrial regeneration in an area located along the Brussels Canal. The project objective is to treat contaminated soil, improve environmental conditions and restore the land to the city.

The film Belgium, *Brussels - Passive office buildings "Aeropolis-Elia-GreenBiz"* touches on the state-of-the-art solutions in technology and ecology applied in three office buildings. The passive office building Aeoropolis II is distinguished by effective thermal

insulation of the building envelope, a natural ventilation system and protection against overheating from sun exposure. ELIA is also a passive building and a headquarters of the national energy research center as well as the main office of the central electricity network company in Belgium. GreenBiz is a complex of passive buildings which act as an incubator for environmental protection and sustainable development.

The Netherlands

The film called *The Netherlands, Leeuwarden, Friesland Province – safe city in the concept of shared space* promotes a widespread idea of sharing urban public space. The Province of Friesland was the first one to implement the shared space solution. The concept minimizes demarcations between vehicles and pedestrians: curbs, barriers, road surface markings, traffic signs, and excessive regulations, which paradoxically make traffic users more careful and prudent. The experience of the Province proves a positive impact on safety, traffic flow and efficiency, environmental protection and the quality of the society, architecture and public space.

The United Kingdom

One of the first successful development projects on self-sustainable housing neighborhoods under One Planet Living Program is presented in the film *The United Kingdom, London – BedZED sustainable housing estate.* BedZED (Beddington Zero Energy Development) is the first ecology-friendly housing initiative in the UK. The aim of this experimental investment was to verify the idea of a zero fossil energy project. Yet, it was necessary to create an enjoyable place to live. BedZED is a multifunctional residential complex with public areas of various types. All facilities are equipped with advanced bioclimatic and technical solutions. Many years of experience help draw and share conclusions and thus contribute to sustainable development.

Ireland

The film *Ireland, Dublin – Ecological building Daintree* is about a small architectural team Solearth from Dublin that is guided by the principles of sustainable development. Daintree is a mixed-use house and office building with space for handcraft, shopping and catering services. It is labelled the most sustainable complex in Ireland. *Time Out* magazine included it on the list of top five must-see places in Dublin.

Sweden

The subject of waste management is presented in the film *Sweden, Linköping – Energy production in the closed waste management process.* Growing concerns about protecting the air quality with biogas solutions gave rise to waste processing in Linköping. A multiannual program for organic waste processing envisaged the construction of a closed waste management process on the regional and international scale. Waste has become a vital resource of heat energy and biofuel for the public transport vehicles. Social effects of the system are worth highlighting as well.

The other Swedish film presents a futurist vision which is now a fact. Sweden, Stockholm - vertical plant growing in cities shows a technology of vegetable cultivation in multifunctional skyscrapers in city centers. The idea of food production in cities has to do with various aspects of sustainable urban planning: it reduces transportation needs and facilitates the management of waste, water and energy.

Croatia

The best-practice film *Croatia, Dubrovnik - Material and immaterial regeneration of the historic building Lazareti* refers to the regeneration of the first in the world quarantine station built in the early 16th century, located just outside the old city walls. It was originally built to isolate the ill and prevent plagues from entering the city via people on the ships entering its port. In the 19th century the Lazareti complex declined in importance and was used for various purposes until 1970s. The unstable political situation in Croatia caused a further deterioration of the buildings. The urban regeneration initiative helped to restore its former glory, this time as a vibrant cultural center.

Malta

Malta is a special place on the map of Europe. It successfully draws on the EU financial resources and allocates a considerable part of them to the regeneration of architectural and urban tissue as well as to historic preservation. The film *Malta, Cottonera – renewal of former docks area* is a great example of this policy. Cottonera, or the three cities of Vittoriosa, Cospicui and Senglei, was intended as a city surrounded by fortifications. There were two worlds separated by walls: the industrial world inside the walls and the outside reality up to the harbor line, where ships entered the port. The aim of the Cottonera Waterfront project was to improve accessibility and mobility within the harbor, to launch new forms of transport and to create an environment that would foster building sustainable communities.

The second film, *Malta, La Valetta – regeneration of urban areas by the passenger ferry harbor* concerns a complex regeneration of two harbors and changing their function into recreational boulevards. The Waterfront project included newly delineated road to the harbor, architectural renewal of valuable but unused buildings, and redevelopment of the lagoon and ferry berths. Given the fact that the city is located high above the sea level, 100-meter-high outdoor elevators were designed to link the harbor with downtown La Valletta.

Denmark

The selected Danish projects are ecological technical initiatives that incorporate modern telecommunication and IT solutions.

The film *Denmark, Aarhus – SmartAarhus intelligent city model* is a digital reality created to solve social, environmental and economic problems and to use in full the potential of Aarhus. The project is open for cooperation and involvement of many stakeholders. It is composed of numerous tasks, including: City Pulse – the Internet of things, Open Data Aarhus – a portal which offers data access, Aarhus Challenges – a platform dedicated to social challenges, WI-FI – the largest and coherent wireless networking technology in Denmark.

Denmark, Aarhus – water and sewage management is a film about the drinking water shortage in Denmark, which made the authorities implement a groundwater protection program. It resulted in Denmark's reaching the leading position in terms of water management and supply systems. It needs zero energy for water treatment, filtration and processing, and the energy required for its transportation comes from renewable resources.

Denmark has introduced an obligatory urban policy on adapting to climate change, mainly with regard to prevention from flood and river bank overtopping. The pilot program in Lystrup consists of many projects for adapting the infrastructure to excess water caused by heavy rains. This best practice example is presented in the film *Denmark*, *Lystrup – adaptation to climate change*.

Italy

Films in Italy were made in three cities: Syracuse in Sicily, Benevento near Naples and Venice.

Syracuse in a beautiful ancient city, a UNESCO World Heritage Site, which in turn imposes restrictions for urban regeneration initiatives and investments. After the war, the city was affected by a strong economic decline and considerable decrease in the population rate. Three films show excellent examples of multi-faceted urban development.

In terms of architectural and planning redevelopment, the film *Italy, Syracuse – Ortigia – architectural and urban regeneration in historic city center* presents the transformation of deprived areas into attractive places for the inhabitants and tourists; a project focused not only on facades and the superficial urban tissue but also on rejuvenating the solitary parts of the city background – courtyards and shady corners. It is about the revitalization of Bottari Square together with the adjoining streets and courtyards. The project aim was to delineate a contemporary road on the ancient *stenopòs*. A partly reconstructed original layout of roads helped uncover and make available the most precious architectural remnants of the ancient times. The deserted inner urban space became a vibrant venue where new initiatives multiply rapidly.

The film *Italy, Syracuse – Ortigia, the revival of culture, tradition and education demonstrates* how to restore the significance of culture, history, tradition, and national treasures through a competent integration of relevant elements and an application of advanced green solutions (reactivation of the historic city theater with the use of environment-friendly lighting, humidity absorbers to protect historic paintings, etc., or starting up educational center for environmental protection, etc.). One of the most evident examples resulting from this strategy is the City Theater Restaurant in Syracuse or the reconstructed *II giardino di Artemide in a formerly neglected urban space*.

Social and economic revitalization is documented in the film Italy, Syracuse – Ortigia, socioeconomic regeneration. The successful urban recovery program assumed bringing

back and running small businesses by the inhabitants e.g. *Il Teatro dei Pupi* (puppetry), the papyrus museum (cultural and educational center) or gastronomy that promotes local products.

A systemic approach to waste management with particular emphasis on selective waste collection, together with culture and tourism are the essence of the film *Italy, Benevento – waste management*. The film presents an example of a social bridge building process through a long term urban strategy and an engagement of various social groups in ecological activities.

The film *Italy, Venice – Regeneration of the Arsenal and including former military building complex into the tourist structure of the city* is about reviving the historical part of Venice, the famous Arsenal, a witness of the former naval power and glory. Even though it lost its military force, it has never ceased to be a special and symbolic venue for the Venetians. The regeneration project was an attempt to interweave sustainable development with history and architectural value of this exceptional place.

The other film from Venice is about social inclusion of wheelchair users in terms of public water transportation system. The film *Italy, Venice – Social inclusion of the wheelchair users in the green water transportation system* shows how to link the aspects of green transportation, tourism and culture. The gondola in Venice is a world-renowned brand, so far available only for non-disabled people. The project *Gondolas4all* ensures that people with disabilities gain access to green transport and moreover draws attention to the necessity of building cities truly for all. *Freedom is when you are free to go wherever you want*, says small Nicolo, the main character. His words are the essence of the problem under scrutiny and of the film itself.

Kosovo

Interesting yet very different from filming in highly-developed countries was the production of three films in Kosovo, a country that is undergoing bot a physical and institutional renewal.

After the civil war in 1999 the urban, the economic and social situation was quite unstable. The country was in a chaos, land development was coincidental and uncoordinated. The United Nations Interim Administration Mission in Kosovo is mandated to help rebuild the infrastructure through spatial planning regulations as a key tool for implementing sustainable development principles. The films present the results of a decade-long program *Making Better Cities Together* by UN-Habitat under a participatory planning concept. The methods and tools used in the program can act as a model approach to urban planning.

The film Kosovo – participatory planning under the auspices of UN-Habitat – urban public space refers to integration and social activation issues. All the actions presented were taken with full participation of the inhabitants and UN-Habitat support. The example projects include: the City Hall square in the town of Elez Han (Hani i Elezit) constructed

in the former cement factory destroyed during the war (currently reopened), municipal spatial planning redevelopments in the city center of Peja/Pec that created an urban space with a pedestrian priority zone and a plan for a road and a green boulevard in Zatra informal housing settlement.

Regeneration connected with environmental protection is the main theme of the film *Kosovo – participatory planning under the auspices of UN-Habitat* – natural environment. It highlights the remarkable role of environmental protection in spatial planning. Examples presented in the film include an investment project which regulated the river and now protects the city of Ferizaj from flooding. As a result of this project, devised under the social participation scheme, the river became a *green corridor*, an attractive public space for entertainment, walking and biking.

The subject of the film Kosovo – participatory planning under the auspices of UN-Habitat – renewal of school facilities is social education of children through their engagement in planning processes. Under the program Making Better Cities Together a spectrum of actions were taken to upgrade social education through the involvement of young people, teachers and parents in planning processes of school facilities. As a result, new sports fields and playgrounds were built in Elez Han (Hani i Elezit) school, an amphitheater in Junik school area, but also sports and recreation facilities with an arena theater for public cultural events, constructed in a former wasteland near the school in Xerxe.

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The shape of urban space is determined chiefly by: public administration, investors, designers, and planners. Their common goal is the good of all, but neither their visions, nor the paths leading to reach it are alike. The groups share one feature only: reluctance to recognize other viewpoints. The basis of urban sustainable development is the ability to see the city in its entire context that includes the perspectives of all stakeholders. Pragmatic administration, mercantile investors, demanding and yet public-spirited inhabitants as well as designers pursuing a perfect city can be all brought together only through a dialogue. In this book we are trying to show how to reconcile the necessary with the impossible in order to build sustainable cities.

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