

Improving the quality of life with CPTED methodology: high-rise housing in Widzew, Łódź

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Abstract

Purpose – The social context in Polish high-rise neighbourhoods varies from one in Western Europe. This typology is not associated with social housing and the ownership of the dwellings mixed. Moreover, nearly half of the population of Poland lives in this type of real estates. Sociological research shows that the subjective quality of life is decent. Nevertheless, the dwellings are still considered a rather poor place to live and there are various aspects that need to be improved. Widzew is a typical example of the 1970s and 80s concrete high-rise housing area. Many similar developments have been built during the communist era in Eastern Europe. There are many degenerated buildings, while new developments intrude the existing environment, obstructing social and urban structure. The purpose of this paper is to analyse this environment and investigate the social problems and the urban context.

Design/methodology/approach – The authors have conducted sociological surveys and field observations to measure the subjective quality of life. After analysing the data, several problems appeared, such as lack of maintenance, poor quality of public space, the sense of insecurity and lack of social cohesion. The main scientific question is if and how the crime prevention through environmental design (CPTED) method can address those issues. This paper wants to address major problems found in the social research by using a combination of CPTED solutions.

Findings – The necessity to apply the CPTED analysis in the quasi-public space is clearly noticeable. It is this space that is often perceived by the inhabitants as dangerous. It appears that it can be easily assessed via four criteria – visibility, accessibility, territoriality and attractiveness.

Originality/value – The novel idea was to compare the findings of a sociological survey on quality of life with the results of space analysis based on the CPTED method. This study might bring general recommendations for high-rise neighbourhoods in Eastern Europe.

Keywords Quality of life, Housing estates, CPTED methodology

Paper type Case study



Introduction

The urban concept of large housing estates derives from an intellectual trend created by the designers associated with CIAM (*Congrès International d'Architecture Moderne*). The designers proposed a new urban model in opposition

to the nineteenth-century city plan. To put it simply, the model amends the structure of the building development on two levels: on both the level of the city and the district. In the city, it separates functions (housing, commerce, industrial, etc.) and ascribes them to separate zones (zoning). On the scale of the district (neighbourhood), it loosens the urban structure and connects the vast public space with the surrounding greenery. Moreover, traffic is highly separated from pedestrians. The districts that are created constitute a composition of numerous repetitive elements within a large area.

Unfortunately, the Polish urban structure of the districts diverges from CIAM's initial principles; it is distorted by the ideology of real socialism and the centrally planned economy (Basista, 2001). During this period, the inefficiency of the Polish economy resulted in sub-standard workmanship. At present, the high percentage of large housing estate areas are governed by post-socialist housing associations. The city authorities perceive these areas as private property and leave the urban renewal initiative to the given housing association. In practice, the redevelopment is minimized to technical modernization of buildings.

The social context in Polish high-rise housing varies from those in other Western countries. The majority of dwellings are not typical of social housing districts. Moreover, the ownership is mixed – private, cooperative, council-owned. Nearly half of the population of Poland lives in these types of buildings, as they constitute 46 per cent of housing; nevertheless, these are still considered a poor place to live. While the sociological research shows that the quality of life is decent, various aspects still need improvement.

Widzew is a typical example of the concrete high-rise housing area from the 1970s and 1980s. Numerous similar developments were built during the communist era in the Eastern European countries. Many social and urban problems converge in Widzew. There are several deteriorated buildings, while new developments intrude into the existing environment, changing the social and urban structures.

The authors have conducted social surveys and field observations to measure the subjective quality of life. After data analysis, several problems became apparent, such as the lack of maintenance, the poor quality of public space, the sense of insecurity in certain places and the lack of social cohesion.

The following thinking pattern can be constructed: quality of life, sense of safety and creation of a safe space. These constitute the research issues raised in this article. The subject of the authors' interest and the aim of the article is to compare the sense of safety of high-rise housing estate inhabitants, conceptualized as the sense of safety or feeling of security, in selected areas, with an objective space analysis using the crime prevention through environmental design (CPTED) method. The sense of safety is treated as one of the components of quality of life. The second purpose of the text is associated with it: it involves showing the relation between quality of life and the sense of safety as categories which are subjectively created by people. Frequently, these subjective feelings have nothing in common with facts – police statistics and the specialists' conclusions regarding space. It is confirmed by the research conducted in Łódź by S. Mordwa (2003, 2010, 2011a, 2011b, 2013).

It is worth mentioning that similar studies have also been conducted in other cities. The researchers of the Jagiellonian University took part in an international project – the Crime Prevention Carousel. The Polish section of the studies were concerned with

Type of project	Description of project/measurements
Quality of life indicators	The analysis of the level of living using both the so-called “hard” statistical data based on official information, and the “soft” indicators, that is data based on public opinion questionnaires
Sustainable indicators	Monitoring the changes in the level of living and predicting the directions of these changes including the balance that should exist between the natural environment, the technology used to control the nature, the economic conditions and the social environment Crucial in these projects are both the statistical measures and the results of surveys
Benchmark	The projects take into account the aspects of life of local communities, which are directly linked to the assumed purposes of the development; the crucial research task is to determine whether the changes go in the predicted direction. The measures based on the official statistical data are of greater importance in the analyses
Neighbourhood projects	The projects represent a research issue narrowed down to the description of the level of living within a few of its key aspects, such as social exclusion, safety or the level of crime risk These projects use almost solely statistical measures, without conducting surveys

Table I.
The methods of
measuring the
quality of life

Source: Jabkowski and Kilarska, 2013

another housing estate – Prądnik Czerwony in Cracow (Crime Prevention Carusel, 2007). These studies dealt solely with the sense of safety in the public spaces of large housing estates. The research presented below focuses mainly on the quality of life in all spaces used by the inhabitants of the high-rise housing estates.

Quality of life and safety

Conducting research on the subject of quality of life is a result of, among others, the necessity to determine its initial state to improve life conditions. Therefore, the analysis of the citizens’ quality of life is essential, as it constitutes a criterion for the rationality of economic processes and the country’s economic policy. The scientific interest in these issues is also connected to the advantages and risks of the progress of civilization. Not only is the financial status analysed, but also the emotional, mental, spiritual and moral state of humans who both make use of the benefits of civilization and suffer from the unfavourable consequences of the social and economic development (e.g. environmental pollution, new social pathologies).

The interest in the issue of quality of life dates back to the 1950s, when the standard of living in local urban communities began to be monitored in the USA. It was then that the material components of prosperity were first measured, while the level of life was gauged via the index of the gross domestic product per citizen. Although the index created a compound image of the standard of life, it only viewed quality of life from the somewhat narrow perspective of economic development. The pioneering research on the subjective aspect of the quality of life among Americans was conducted in the 1960s by Campbell, who attempted to measure psychological welfare and its determinants on the basis of the subjective assessment of the subjects and their life experiences.

The scientific interest in the notion of quality of life grew astoundingly fast. The practical studies conducted differed from each other because of diverse theoretical concepts, research issues and purposes. These projects can be divided into four groups, based on the methods used to measure quality of life (Table I).

As mentioned, it is difficult to present a single, complete definition of the quality of life. Romney (2002) stated that there is a countless number of definitions thereof, while Faden and Leplege (2002) noticed that the notion of quality of life observed from the perspective of multiple schools has many things in common. Chinball and Tait (1999) described the concept as elusive. More importantly, the social sciences focus on the quality of life in its universal meaning (Baumann, 2006).

In this article, within the short review of the definitions of the quality of life, attention has been paid to those most general in nature as well as the group with the list of disciplines and the aspects of life taken into consideration when measuring the quality of life. The general definitions are identifiable with the global ones, as they regard the notion of well-being and concern human subjective satisfaction with life as a whole (e.g. life satisfaction, auspiciousness). The definition of the quality of life by Liu (1970) has been recognized as remarkably general and open – it constitutes a collection of needs, the fulfilment of which makes people happy. In this definition, the set of values including the quality of life is practically endless. The definitions which specifically designate a list of notions determining a good or bad life, both on the material (prosperity, poverty) and the non-material level (welfare, discontent), are constructed slightly different.

The term used by the World Health Organization (WHO) can be considered an example of the second group definition, according to which the quality of life is an individual perception of one's own position in life while taking into account the cultural conditions, personal values connected with one's own goals, expectations, norms and problems. It is influenced, in a complex way, by physical health, mental state, the level of independence, personal relationships and environmental features important to a given person. Therefore, this notion concerns the subjective assessment of one's own life rooted in the cultural and social context, and cannot be identified with "health status", "life satisfaction" or "well-being" (Rapley 2003, p. 50; all the quotations in this article are rendered by an interpreter Ms. D. Kielan). The quality of life is also presented as a subjective category in the definition by M. Wallden:

[...] the quality of life for an individual is both subjective and normative, and it is determined by the range within which an individual can fulfil his/her needs and plans. [...] a significant aspect of the quality of life constitutes the conditions of living. In case of an individual, these conditions comprise the physical and cultural surroundings (environment), the means at one's disposal and the social odds of fulfilling the needs and plans (Wallden after Wallis, 1976, p. 137).

A similar way of thinking appears to be present in numerous other definitions. For example, Björn Enquist states that: "The quality of life is a degree to which an individual can achieve a sense of safety and self-worth and maximize his/her own intellectual, mental and physical possibilities to achieve his purposes" (Wozniak, 2005, p. 114).

In the definitions of quality of life, the emphasis on the fulfilment of needs is rather obvious, as a human being has the right to live well, honestly and affluently, he/she has to have all he needs, be healthy and respected, love and be loved. Safety doubtlessly plays an important role among those needs. To refer to A. Maslow's theory of needs – the need for safety is one of the basic categories of needs identified as comfort, peace and the

lack of fear. The lack of its fulfilment destabilizes human and social group behaviour. The need for safety can be treated as a value; therefore, it can be understood as an axiological category, comprising all that is precious and desirable and what constitutes a purpose of human aspirations (*Encyklopedia* [...], 2007). According to Tischner (1982), values are an important element of human social life – they allow us to distinguish between the important and the indifferent, the good and the bad, the safe and the dangerous. Therefore, they enable the avoidance of many threats, while the safety itself, as a state valued by man, constitutes something invaluable, a purpose of his actions.

The safety of an individual comprises two main components, the objective state (when there are no threats) and the subjective state (when an individual is convinced there are no threats). The sense of safety (with both components) is achieved when the individual's life situation (objective and subjective) is not at risk of deteriorating in the aspects considered important by the individual. In that respect, the sense of safety concerns not only the aspects associated with crime, but also others, such as financial, health and social security, etc. The sense of safety is also determined by the level of fulfilment of current needs (no risk of becoming a victim of a crime) and the existing bases of their fulfilment in the future. The state of safety is considered a state free of threats, which both originate in the actions of individuals (these threats are easier to prevent) and appear regardless of them (Jabkowski and Kilarska 2013).

Therefore, the sense of safety is defined as being able to feel non-threatened. If this crucial human need is unfulfilled, it may prevent the proper functioning of an individual in the society. This understanding makes it possible to treat the sense of safety as the feeling of assurance that the institutions meant to secure safety will work efficiently. However, in a modern understanding of prevention, the concept of demanding attitudes is more often abandoned, emphasizing that the country and its institutions can guarantee only the bare minimum of safety. Anything beyond this minimum depends on the level of activeness, the reserves and the ability to self-organize (non-institutionalized, e.g. within a neighbourhood, or institutionalized, e.g. an non-governmental organization) to improve safety via the citizens' activities for their neighbourhood community or the community of their city. The term "sense of safety" is multidimensional: it includes social safety (the feeling of closeness and love, social ties, family connections, etc.), financial/social security (work, income level, living conditions, the possibility of financial support, etc.), health security (health level, mental state, etc.), safety on the level of the environment (environmental pollution, environmental threats, etc.) and international safety (terrorism, globalization risks). In the article, attention was paid not only to the so-called traditional sense of safety, that is the one connected with criminal activities (Jabkowski and Kilarska 2013). Some aspects of other dimensions of the sense of safety were also taken into account.

The sense of safety in Widzew

Empirical research, i.e. self-administered questionnaires, regarding the quality of life in housing estates were conducted [1] in 2008 [2]. Their scope encompassed all housing estates in Łódź. However, for the purposes of this article, a selection has been made, focusing on the data from Widzew. The number of surveys conducted in 2008 amounts to 1,032, including 220 in the researched area. It needs to be emphasized that the purpose of the research was to assess the quality of life among the inhabitants of the housing

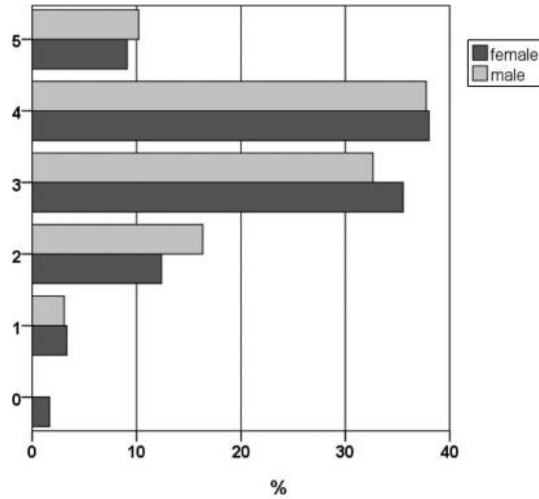
estates. The study was not dedicated solely to safety, and the issues associated with it were included in the questionnaire as variables regarding the quality of life.

It has been assumed that life in a housing estate goes on in three types of spaces neighbouring with each other – private space, quasi-public space and public space. All types of space can be associated with specific places. Private space encompasses the apartment. It has certain fixed characteristics. It is ours and separated from the rest of the world – with walls, windows and doors, unable to be crossed without the knowledge of the dweller. Otherwise, a crime occurs. A quasi-public space can be accessed not only by the inhabitants of the housing estate, but also other, specific, people – neighbours whose apartments are located within the same housing estate, administrators, postmen, etc. Others who appear in this space are treated as strangers who can be considered a threat and disturb the sense of safety. This zone definitely includes the corridor outside the apartment, the staircase, the attic, the elevator and the cellar. The latter can be considered a borderline space, private and quasi-public at the same time. The cellars in housing estates are divided into boxes that belong to the apartment owners. It has been assumed, for the research purposes, that the outside space comprises areas such as lands in front of the building, nearby playgrounds and car parks.

A quota sampling has been performed on the basis of data such as age and gender. An actual demographic structure was generally preserved. The participants of the study in Widzew included 55.3 per cent of women and 44.7 per cent of men, with the average age of 42.71 years. The overrepresentation of women is ostensible, as Łódź is a city with the highest female sex ratio among the largest Polish cities. The age average corresponds with the age average in the city (with only those aged above 18 years taken into account). More than half of the respondents were married (58 per cent), almost 29 per cent were single, nearly 10 per cent were widowed and only 3.2 per cent were divorced. Two-thirds of the respondents had an education no higher than a secondary one. At the same time, the percentage of respondents with an MA degree was quite high – 18.3 per cent. A statistical relationship between age and education status was observed – the older the person, the lower the education. However, a positive correlation exists between the respondent age and the duration of living in Widzew. The average length of living in the district amounts to almost 19 years.

It has already been mentioned that the research tool has been constructed to assess the quality of life of the residents of housing estates and the questions on the sense of safety were indicators of this quality. However, questions about the safety were also indirect. The direct question asked to assess the level of safety in the housing estate district (public space). On the scale of 0 (no sense of safety) to 5 (maximum sense of safety), the arithmetic mean of the respondents' answers amounted to 3.35, and the mode to 4. A slight relationship between the sense of safety and age can also be observed (the older people are, the lower the sense of safety), similarly with gender (on the basis of Cramér's V) – Figure 1.

The sense of safety in one's own apartment – unsurprisingly – was assessed very high – as 4.46 on the scale of 0 to 5. In the control question, the average was even higher – 4.62. There were also queries about other spaces. The highest average outside of the apartment was obtained by the corridor, by the apartment (the quasi-public space) and, surprisingly, a playground (Table II), which is a public space and, therefore, at a considerable distance from the safety of one's apartment. The attic and cellar were considered least safe, as, it seems, they are the most rarely visited.



Source: Personal elaboration on the basis of questionnaire surveys

Figure 1. The sense of safety in the place of residence (scale of 0 to 5) and the respondents' gender

The type of space	Place	The average assessment of safety	"Our"
Private	Apartment	4.62	X
	Quasi-public	2.55	61.1
Public	Cellar	3.16	74.1
	The corridor by the apartment	4.19	94.9
	Staircase	4.05	87.3
	Elevator	3.62	73.0
	In front of the building	3.66	63.6
	Playground	4.14	65.6
	Car park	3.61	56.3

Table II. The average assessments of safety (scale of 0 to 5) and the percentage of respondents describing the given space as "our"

Source: Personal elaboration on the basis of questionnaire surveys

The query associated with the public space asked about places to be avoided. The respondents most frequently enumerated shops and their surroundings (22.4 per cent); communication routes (passageways, streets – 17.9 per cent); as well as parks, greeneries and recreation areas (16.8 per cent).

The indirect questions about the feelings of safety were supplementary to the direct questions. Those included, for example, the question about the feeling of belonging to a given community of inhabitants – the question asked whether a given place is, "our" or "no one's". "Our" can be considered "familiar", and therefore safe. It transpired that the answers did not exactly tally with the average assessments of safety. For example, the cellar, with an average sense of safety of 3.16, was "our" for more than 74 per cent of the respondents.

Women appeared more likely to fear attics and cellars. The inhabitants of old housing estates have fewer fears regarding attics, while the inhabitants of lower buildings fear cellars less. Other variables do not influence the sense of safety. An elevator is an interesting place to interpret in that context. On the one hand, it constitutes a kind of a route, therefore – a space which connects the place outside the apartment with the area in front of the building, both considered safer than the elevator itself. On the other hand, this closed and cramped space has no windows and, consequently, no possibility of an individual seeing the route or the destination. The negative feelings therefore may stem from several reasons. It has already been mentioned that these are extremely small spaces, with users being forced to encounter each other. On the basis of E.T. Hall's terminology (1966), it can be observed that not only an individual's close personal space is invaded, but on numerous occasions also the intimate space. Furthermore, there is no real possibility of choosing the "travel companion". An individual is therefore locked in, not unlike his or her own apartment – separated from the outside with walls and doors, but not in control of what happens inside and who is allowed in. Additionally, in an elevator, similarly to the cellar, there is no escape route. One cannot see the surroundings clearly, with the light source being always artificial – as if existing outside of the biological time.

The space analysis using the CPTED method

The ideas of Jane Jacobs from her book *Death and Life of Great American Cities* were adopted from across the Atlantic Ocean. Particularly in the UK and The Netherlands since the late 1980s, planners have been working on instruments improving the quality of life for both the existing neighbourhoods as well as the new ones. A programme "Secured by Design" was established in Britain in the early 1990s by the police and the Home Office. The Dutch police developed a strategy based on a pattern of various spatial environments where the safety and security aspects could be implemented. By using Christopher Alexander's *Pattern Language* (1977), the book "Police Label Secure Housing" (Politiekeurmerk Veilig Wonen®, Korthals *et al.*, 1994) improved the cooperation and the communication of crime prevention experts and urban planners. The experiment started in the police district of Hollands-Midden and was implemented nationwide in 1998 (Van Zwam *et al.*, 1998).

The Dutch approach incorporated the broad theoretical basis. Using *Pattern Language* can be seen as a design protocol for planning practitioners. It consists of approximately 250 patterns, corresponding with both physical and social aspects.

The eight criteria used in "The Police Label" were defined by Van der Voordt and Van Wegen (1990) in their *Socially Secured Design Checklist* (TU Delft, 1990). In 2008, the criteria were reduced to four and adopted in the CPTED manual *Sociaal Veilig Ontwerpen en Beheer* (Luten, *et al.*, 2008).

The criteria of improving natural surveillance, natural access control, territorial reinforcement and maintenance and management will be used in this case to show that improving public space can decrease crime (mainly burglaries, car-related crimes, thefts, vandalisms, nuisances) and fear of crime in the high-rise area of Widzew.

A great intervention in the buildings' structure is currently not an option. We will look at the landscape to use the four criteria developed by CPTED and show opportunities to improve the inhabitants' environment.

A CPTED approach research, based on a three-day fieldwork in various neighbourhoods in Widzew, might be valid for other places in Poland as well as across Central and Eastern Europe.

The authors have conducted social surveys and field observations to measure the subjective quality of life. After analysing the data, several problems appeared, such as lack of maintenance, poor quality of public space, sense of insecurity in certain places and lack of social cohesion.

To assess the problems, the following sections enumerate four aspects that were examined.

Natural surveillance (visibility)

- In Widzew, we found that several parks were lit during night-time. Such routes are not ones where you wish to encourage people to walk during evening hours, because pedestrians and cyclists are out of sight of houses at the fringes of the park. Lighting parks fakes safety. Making separate day and night routes is the best solution for a friendly use of the environment. The night route should be located within sight of dwellings and should include lampposts with light bulbs at the level of 4 m, and the use of white (led) light; this represents the distance that you can distinctly identify faces and good or bad intentions of fellow-users of the public realm.
- The gable walls have no windows, so there are no “eyes in the streets” in critical public spaces, logical from the point of view of insolation, but not from the CPTED-point of view.
- Lack of visibility: some trees in the green areas obscure the streetlamp light. The position of light sources should be taken into consideration in an early design phase (Plate 1).

Natural access control (accessibility)

- In Zarzew, paths forbidden for cars are designed as if they were meant for cars. The following points support this statement.



Source: T. Woldendorp

Plate 1.
It is better not to light a night route where social control is absent. An alternative solution is needed

- The lampposts are around 8-m-high, the height more appropriate for traffic than for pedestrians/cyclists.
- There are anti-parking objects everywhere – strange, as the given street is already not meant for cars.
- Black asphalt is used, which is a car-friendly material.
- The litter containers are at the entrance of the pedestrian lane; this stimulates the use of cars instead of showing that an individual is entering a pedestrian area.
- Accessibility in the changing use of road infrastructure: too small passages for cyclists and pedestrians may cause aggression (Plate 2).

Territorial reinforcement

- Fences around new blocks form some kind of a gated community. The public/private space is defined, but low hedges could form a second enclosure and contribute to the improvement of the quality of life by increasing biodiversity as well.
- Creating ownership: three generations of high-rise next to each other do not constitute social cohesion per definition. Periphery green fields could be used for creating new meeting spaces for neighbours. By starting up place-making projects, inhabitants could get involved with their environment.
- Transformer boxes are set up as solids in public space: from four sides, someone with bad intentions can show up. A possible measure in the future: transformer boxes will be adopted in new building blocks.
- Illegal gardening (Guerilla gardening): still present and functioning as a sign of alternative ownership. Housing corporations: stimulating Welcome In My Backyard (WIMBY)! (Plate 3)



Source: T. Woldendorp

Plate 2.
A car free road
should not stimulate
cars to enter the area

Plate 3.

Hedges as natural territorial reinforcement: good for biodiversity as well!



Source: T. Woldendorp

Maintenance and management (attractiveness)

- Landscape architecture does not seem to exist in public space: there is no order to the layout of plants, shrubs, bushes and trees.
- Badly maintained greenery (bushes) on the main pedestrian route to the station of Widzew may invoke the feelings of discomfort and anxiety (“The area is not a place for women at night”).
- Legalizing the colonized green yard can generate a positive spin-off for ownership and people’s involvement in planning their environment (Plate 4).

Conclusions

It appears that even at this point, certain conclusions can be made. Above all, the necessity to apply the CPTED analysis in the quasi-public space is clearly noticeable. It is this space that is often perceived by the inhabitants as dangerous. It appears that it can be easily accessed via four criteria – visibility, accessibility, territoriality and

Plate 4.

Legalize the colonized green yard when people feel responsible for their environment!



Source: T. Woldendorp

attractiveness. A time factor also needs to be taken into consideration in the studies – be it a day or a season.

What is surprising is the similarity of conclusions from the field observations and the attitudes of the inhabitants of high-rise housing estates. On the other hand, a clear difference between what is subjectively perceived and really existing is observable, confirming the necessity of conducting social research and inhabitants' participation in shaping their own space. The human-focused place planning during the socialist era was not perceived as an important factor of space creation, which makes such actions even more crucial now. It can be considered a significant aspect of building a social capital in high-rise housing estates which, as a consequence, raises the quality of life of local communities.

It has already been mentioned that radical modifications in places such as high-rise housing estates are not easy. However, a part of the proposed solutions is easy to implement, for example turning off the lights in the park. Others require educating both the inhabitants of the area and the area managers. Some proposals, although requiring financial input, can be implemented alongside the necessary renovations, for example. But the real profit has to be found when landscape architects and urban planners amongst CPTED-experts in cooperation with inhabitants of the high-rise area redefine the public realm.

Notes

1. The research in 2008 was conducted by a team consisting of: Anna Janiszewska, Ewa Klima, Agnieszka Rochmińska and the students of geography at the University of Łódź. In the 2014 research, they were joined by Lidia Groeger and the students of various subjects of the Faculty of Geographical Sciences of the University of Łódź.
2. Currently, the preparations for the next round of research are in progress; they are scheduled for the autumn of 2015.

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