Implementing urban greening aid projects – The case of St. Petersburg, Russia

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Abstract

Recent years have seen the introduction of the concept of urban greening, defined as embracing the planning and management of all urban vegetation to create or add values to the local community. Green-space development has become recognised by international agencies and donors as important tool in improving the quality of urban livelihoods and urban environment. This paper evaluates an example of an urban greening aid project, carried out by Danish and Russian partners in the city of St. Petersburg, Russia. The project aimed to contribute to conservation and development of the cultural–historical, social and ecological values of St. Petersburg's urban green areas by implementing a structured, socially inclusive, well-informed planning and management approach. The project had three main components: (1) the development of a GIS-based information system to assist green-space planning and management; (2) on-site improvements in selected green areas and (3) awareness raising and public involvement activities. *Ex post* evaluation of the project showed that in spite of the limits of time and resources, important results were achieved. A more strategic approach to urban green-space planning and management, as promoted by urban greening, was adapted by some of the Russian project partners. Achievements also included notable physical improvements to one park. But the main project impacts were improved communication and collaboration between the local park department and local academia, as well as expertise developed in running a complex urban greening project. The project failed, however, in its public involvement ambitions.

Moreover, the project should have facilitated discussion on some of the current premises of urban green-space planning and management in St. Petersburg, which insufficiently consider changing values and public preferences related to green spaces.

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Introduction

In the quest for healthy, liveable and sustainable cities, urban green spaces have an important role to play. They can help improve livelihoods, moderate harsh urban climates, conserve biodiversity and contribute to better human health, among others (e.g., Jensen et al., 2000; Lundgren Alm, 2001; FAO, 2002; Van Veenhuizen et al., 2004; Tyrväinen et al., 2005). During recent years, integrative and strategic concepts and fields of activity have been developed and implemented across the globe to promote and develop tree-based resources catering for multiple urban demands. Among these is the *urban greening* approach, which has been defined as embracing the planning and management of all urban vegetation to create or add values to the local community in an urban area (Kuchelmeister, 1998; Konijnendijk and Randrup, 2002). Urban greening is about making and keeping cities 'greener' by designing, establishing and managing multifunctional green areas. Green spaces are no longer seen as 'luxury goods' for making cities more pleasant, but rather as part of basic urban infrastructure, providing essential goods and services to cities and towns (Nilsson, 2004; Van Veenhuizen et al., 2004).

As the level of urbanisation is increasing rapidly, the world's problems of livelihood, health, environment and life quality move into the cities. Several international conventions and agreements are related to sustainable urban development, especially the outcomes of the Rio Conference in Rio de Janeiro in 1992 involving Agenda 21. The urban environment has received considerable attention from, for example, the United Nations Environmental Programme (UNEP) (Konijnendijk et al., 2004a). In parallel, the urban situation concerning livelihood, poverty alleviation and community building is the main focus for UN Habitat (Åkerlund et al., 2005). Green-space development has been recognised by international agencies and donors as an important tool in improving the quality of urban livelihoods and urban environment (e.g., Inter-American Development Bank, 1997; Kuchelmeister, 1998; DANIDA, 2004; Konijnendijk et al., 2004a, b). Urban greening in an environmental aid context often refers to tree planting of shelterbelts for waste water treatment, prevention of dust storms or landslides, and watershed management. Other projects aim at poverty alleviation and comprise planting of fruit trees or trees for fuel wood in or near urban areas. Only a few aid projects have embraced a comprehensive approach towards urban greening (Åkerlund et al., 2005).

This paper introduces an example of a recently completed environmental aid project that applied an urban greening approach in St. Petersburg, Russia. An *ex post* evaluation of this bilateral Russian–Danish is provided and used to draw some lessons for urban greening aid projects at large.

Study areas

With its five million inhabitants, St. Petersburg is the second largest city of the Russian Federation. After having been the capital from 1712 to 1918, it was renamed Leningrad during the communist era and lost its leading position to Moscow. Following the political changes in Eastern Europe at the end of the 1980s, it regained its former name. St. Petersburg was founded by Tsar Peter the Great in 1703 with the objective of becoming Russia's window towards Europe. European urban planning and construction traditions were here introduced for the first time in Russia when developing the city on the marshlands in the delta of the river Neva and on the shores of the Finnish Gulf. Peter wanted a green, prestigious capital, and boulevards, canals, palaces and gardens became important elements of the new town. Now famous parks, such as the Summer Garden in the city centre and the summer residences of Peterhof, Tsarskoe Selo and Pavlovsk west and south of the city were laid out. (Nilsson et al., 2002; Åkerlund, 2003; Kitaev, 2006; Semenov, 2006).

The city has long benefited from its green heritage and is still a green city today (Fig. 1). Apart from the parks, gardens and boulevards of the Tsar era, many of which have become recognised as UNESCO World Heritage sites, the current urban green structure includes extensive green spaces established under Soviet rule, accounting for about 80% of all green areas (Nilsson et al., 2002; Åkerlund, 2003). St. Petersburg proper harbours approximately 18,500 ha of public green space, i.e. about 32% of its land area. Moreover, a vast forest greenbelt surrounds the city, with a protected 'forest park zone' of 142,000 ha closest to the urban centre (Selikhovkin, 2002; Kitaev, 2006). Green spaces cover about 30% of the area of St. Petersburg proper, as can be derived from Table 1. But only about 1/3 of all green spaces have full public access. Moreover, green spaces are not always evenly distributed spatially; especially central city districts such as Admiralteysky and Centralny have a low green-space cover (Table 2). The overall per capita green-space rate of the city proper is 14.3 m², while this figure rises to 121.1 m² in the suburbs (Mezenko, 2002).

St. Petersburg's parks, gardens, boulevards and other green areas fulfil many functions. They are particularly popular for outdoor recreation, both during the summer and winter season. While parks and gardens cater for daily recreation, the surrounding greenbelt forests harbour the population's large amount of summer houses or dachas. Green spaces host important biodiversity values and the city has several nature reserves within its boundaries. Environmental services offered by green spaces include, e.g., protecting drinking water resources and reducing atmospheric pollution, of which the increasing car traffic is the main contributor. Green
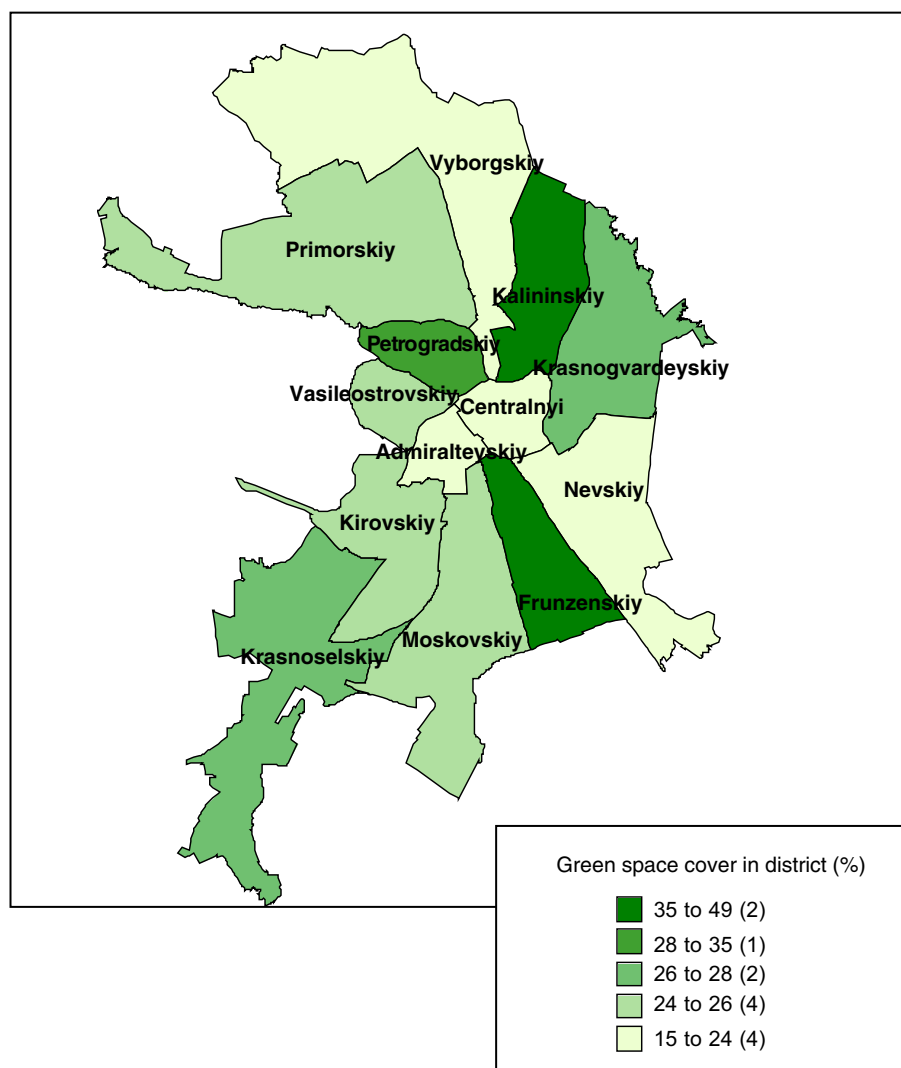
Vyborgskiy

Primorskiy

Kalininskiy

Petrogradskiy

Krasnogvardeyskiy

Vasileostrovskiy

Centralnyi

Admiraltevskiy

Nevskiy

Kirovskiy

Frunzenskiy

Moskovskiy

Krasnoselskiy

Green space cover in district (%)

- 35 to 49 (2)
- 28 to 35 (1)
- 26 to 28 (2)
- 24 to 26 (4)
- 15 to 24 (4)

Fig. 1. GIS map of St. Petersburg, name of districts and proportion of green area.

Table 1. Quantitative information about St. Petersburg green areas (Alekseev, 2002)

	Greater St. Petersburg	St. Petersburg (city proper)		Suburbs
		Central districts	Other districts	
Total area (ha/%)	143,900/100	60,600/42.1		83,300/57.9
Green areas (ha/%), including:	31,162/100	18,553/59.5		12,608.3/40.5
		1166/6.3	17,387/93.7	
Green areas with free public access, including:	12,664/100	5976/45,8		6688.1/54.2
		693/11.6	5284/88.4	
Green areas with limited public access including:	18,497/100	12,577/68.0		5920.2/32.0
		474/3.8	121,034/96.2	

areas also have important cultural–historical values, as they were established during different periods of time and the most popular and famous ones date back to the Tsar era.

At present, the city's strong park tradition and extensive green structure are under threat. Dramatic societal changes have led to different social, economic and political conditions. Lack of funding is a primary concern for the public sector, including the green-space sector. The municipal budget for green-space establishment and management is only 10–20% of what it was under Soviet rule (Vikharev, personal communication).

Table 2. Information on St. Petersburg green areas and relation to area and population of the city's administrative districts

District name	Total area (ha)	Green area (ha)	Population (thousands)	Population density (persons/ha)	Proportion of green area (%)
Admiralteysky	1400	212.3	195.1	139.4	15.2
Vasilyostrovsky	1682	410.7	199.6	118.7	24.5
Vyborgsky	11,672	2526.3	423.1	36.2	21.6
Kalininsky	4019	1951.6	466.1	116.0	48.6
Kirovsky	4580	1179.1	349.4	76.3	25.9
Krasnogvardeysky	5635	1574.4	321.8	57.1	27.9
Krasnoselsky	8960	2364.8	306	34.2	26.4
Moskovsky	7107	1754.6	300.6	42.3	24.7
Nevsky	6252	1492.3	457	73.1	23.9
Petrogradsky	1951	650.7	143.1	73.3	34.9
Primorsky	11,024	2741.9	361.9	32.8	24.9
Frunzensky	3580	1385.7	397.5	111.0	38.7
Centralny	1770	299.5	382.7	216.2	16.9

Many parks are degenerating due to lack of money and the number of green areas is decreasing rapidly in favour of exploitation and urban development. As the second largest city in Russia, St. Petersburg is very dynamic and rapidly developing. The building and construction business started again in 1998 after having stood still since 1991, and the city is now going through a process of densification, where most new construction of housing, commercial and infrastructure is taking place on urban green areas. Challenges are also connected with the new political and complex administrative structure, as responsibilities for green-space planning and management are not always clear.

In the year 2000 a bilateral environmental aid project, Planning and Rehabilitation of Green Areas in St. Petersburg, was started with funding from the Danish Ministry of the Environment. The project's development objective was to conserve and develop the many cultural–historical, social and ecological values of St. Petersburg's urban green areas by elaborating a structured, socially inclusive, well-informed planning and management approach. The main beneficiary and partner on the Russian side was the St. Petersburg's Department of Gardens and Parks (DGP), while the other main Russian counterpart was the St. Petersburg State Forest Technical Academy (FTA). The Danish Forest and Landscape Research Institute (DFLRI, now the Danish Centre for Forest, Landscape and Planning) acted as project coordinator. On the Danish side they were supported by an NGO, the Danish Outdoor Council (DOC). The project lasted about 2.5 years and totalled about 600,000 EUR in funding. It included three main components within planning, management and public participation, respectively, (1) the development of a GIS-based information system to assist green-space planning and management; (2) on-site improvements in selected green areas and (3) awareness raising and public involvement activities (Nilsson et al., 2002; Åkerlund, 2003). The choice of components was a result of a compromise between the Russians' primary interests in getting on-site improvements financed and the Danish partners' interest in developing public participation and strategic tools like the GIS system.

Method

The evaluation of the St. Petersburg urban greening project presented here concerns an *ex post* evaluation of the project and its impacts carried out during 2002 and 2003 (for the original report, see Åkerlund, 2003). The evaluation was carried out by an advanced Master-student of landscape architecture at the Swedish University of Agricultural Sciences, supervised by academic staff at her institute and by the Danish project coordinator. The person carrying out the review spoke Russian.

The *ex post* evaluation aimed to investigate how far an environmental aid project of this kind could reach in time and space, where and why the project had any impact and spin-off effects, and where it failed and why. During the evaluation, two visits to St. Petersburg totalling 6 weeks were made. The first visit coincided with the very final stages of the project and was used by the researcher to get a personal feeling of the project and meet all key stakeholders. During the second visit, the interviewing continued and in total 23 in-depth interviews were held with key actors that had been involved in the project in one way or another. Interviews, which lasted about 1 h each, were held with nine representatives of the DGP; park managers, park directors, six of the FTA (vice rector, professors, researchers, Ph.D. students), two of DFLRI, one of DOC, as well as

representatives of local organisations and the Danish donor agency. Interviews were supplied with site visits and study of literature, project reports and other information about the planning and management of St. Petersburg green spaces.

The interviews were semi-focused and the interviewees were given freedom to have an influence on the content and development of the interviews. Generally this method increases the opportunities for getting new and interesting information and perspectives, but, according to Jacobsen (1997), it also increases the difficulties in interpreting the results of the interviews. The interviews were interpreted using a method of phenomenological analysis (Sages and Birgerstam, 1995), where expressions and key words are identified, compared and related both to a general urban greening context and to the specific Russian context.

Results and discussion

Planning component

The project aimed to 'sow the seeds' for a more strategic approach to planning and management of green spaces in St. Petersburg. This was done, primarily, by developing a GIS-based information system on the inner city green spaces. The DGP is the oldest park department in Russia and hence has a long tradition of planning and managing the urban green areas. Their information base for its green spaces is rather extensive but primarily in analogue form, which makes it difficult to get a comprehensive picture of the urban green structure.

As a first step within the project, 427 of about 2000 green spaces in St. Petersburg were included during the project term. FTA researchers, with assistance of Danish experts, developed the GIS by collecting new data and compiling existing data. This exercise resulted, among others, in a series of thematic maps on the green spaces of the city (see Fig. 2 for an example). Information included in the information system concerned five categories of data. Firstly, general information comprised data on aspects such as green-space name, location, size and ownership. Secondly, cultural–historical values of parks were incorporated through data on, for example, time of establishment of the green area and presence of cultural–historical elements. Similarly, the third group of information concerned social values, looking at visitor numbers per year, the number of potential users living within 500 m of green-space boundaries, and path density (Fig. 2). The fourth category dealt with ecological values, through data on, for example, old trees, nature protection status and presence of natural habitats. The fifth and final category of information provided concrete data for management,
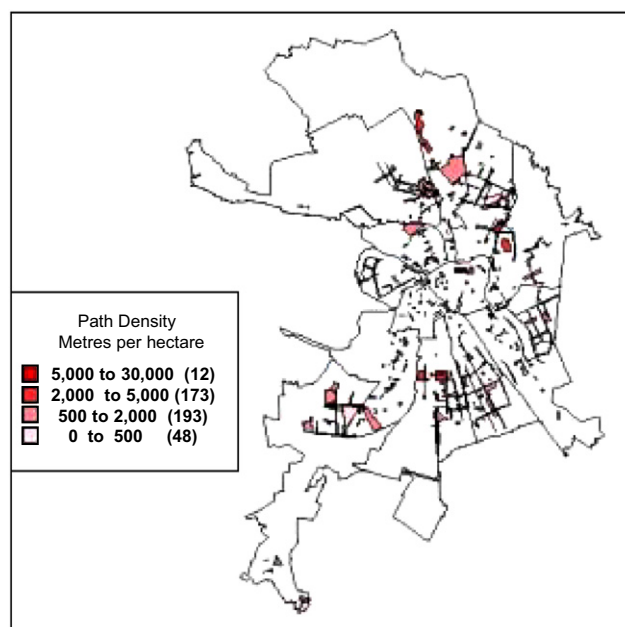

Fig. 2. Density of paths in selected green areas of St. Petersburg (GIS application by Alexander Alekseev).

such as age class distribution of trees, different types of recreational facilities and available budget per green space.

Ex post evaluation found that the information system was developed and put into use, as planned. Moreover, project sustainability seemed ensured by a formal agreement of DGP and FTA to continue developing the system. One of the DGP staff even started a Ph.D. project at the Academy focusing on introduction of GIS in the department's planning and management. An important side effect was the increased use of GIS among academic staff and students. It is, however, difficult to say whether or not the project also resulted in a more strategic approach to green-space planning and management. Within the DGP, only very few people showed themselves aware of strategic aspects after project completion. On the other hand, scientists and students at the FTA had really taken the more strategic approach at heart and showed themselves surprised about the many values of St. Petersburg green spaces, especially the social and cultural.

Restoration component

Restoration and implementation activities were regarded as important in making the project 'visible' by producing some physical results. Local green-space managers provided an overview of restoration and implementation needs at project outset and, within the budgetary frame, activities in three parks were selected by project staff. Three parks from different periods of

city park history, and different in their character and design, were selected for restoration and implementation work. Two of these were Soviet-era parks: Moskowsky Park Pobedy, 67 ha, a designed victory park from after the Second World War, and Park Sosnovka, 302 ha, a park developed from natural woodland area. In these parks very little was done, apart from limited tree cutting and thinning, and planting of some new trees. Most funding and focus went to the third park, the historical Tavrichesky Garden, 23.7 ha, established during the 18th century (Ignatieva et al., 1996), where about 40% of the entire project budget was used here for partly restoring the obsolete drainage system. The park has a highly sensitive hydrological system and was in great need of restoration, as various areas stood under water during large parts of the year.

The DGP did not hide the fact that within the whole project, they were primarily interested in this part. Most planned activities were carried out, although the very limited restoration impacts in Moskowsky Park Pobedy and Park Sosnovka did not really make any significant impact. In Tavrichesky Garden, the drainage in part of the park was restored, followed by planting and reorganising of space. The DGP was very satisfied with part-restoration as it acted as a catalyst for restoration of the entire park. Restoration had been ongoing for years, but lacked the necessary, more significant funding. The project start also led to more funding being made available by city, so that restoration of the whole park was completed in May 2003. A critical reflection can be that during the activities, the city's restoration policy was not questioned. In Russia, design of park restoration and new parks are not selected in competition. Instead the state architecture bureau, LENProekt, plans most restoration works in St. Petersburg. These works mostly focus on bringing back the old appearance of the parks, putting less consideration to the preferences and needs of present society. But now, after 1991, the society has changed as well as the mentality of the people, therefore the parks also have to change (Smertin, personal communication).

Awareness raising and public involvement component

The third component of the project strived to improve the communication between park managers and the public, and to raise public awareness about the importance of green spaces. This work was coordinated on the Danish side by the DOC. Park days involving the public and schoolchildren in activities like planting, raking leaves and cleaning up were arranged, building on the *subbotnik* tradition from the Soviet era when workers had an extra day off for volunteering work, e.g. with park maintenance (Fig. 3). Nature education bases and playgrounds were set up according to Danish

Fig. 3. Park day in Tavricheskey Garden. Schoolchildren and researchers engaged in park maintenance (photo: Department of Gardens and Parks, St. Petersburg).

experiences, and media conferences were held. The nature education base comprised a room with equipment for learning about nature for schoolchildren in Moskowsky Park Pobedy. The project also set up three focus groups in the three case-study parks. These groups, consisting of representatives of local park staff, schools and organisations, discussed project activities.

This component was found to be the least successful part of project, in spite of the important role of stakeholder involvement in urban greening approaches. Awareness raising had some effect, for example through rather extensive media coverage and park days. Playgrounds were also intensively used, although visitors seemed mostly unaware of their special 'nature theme'. The nature base was not much used and later even stowed away. The focus groups were only successful to a limited extent. The distrust between park managers and the general public persisted and made meaningful public involvement like stakeholder commitment and participation in volunteering work difficult. The DGP itself lacked expertise on how to involve the public, and apart from some work by a local children's environmental education NGO, the DOC lacked a counterpart on the Russian side.

Overall project impact

In spite of the short time frame and limited amount of resources, the project in St. Petersburg did have an important impact. Noticeable results included the development of the GIS by FTA and DGP, and from a pure maintenance oriented to a more strategic perspective of multifunctional green spaces among FTA staff and students. Much was also learnt from the process of running a complex greening project and the Russian counterparts appreciated getting familiar with how to follow a process through from idea to

realisation, and being flexible, and also precise in managing complex problems. Röhling and Woodhill (1998) stress that one of the most important ways towards sustainable development is strong exchange between research and practice. Developing good methods for working in a more sustainable way is crucial if the methods should be taken into practice. In the project, the relationship and collaboration between DGP and FTA was improved considerably. This improvement resulted not only in a good working relation, but also in various spin-offs, such as a follow-up environmental aid project that focused on the forest park zone during from 2003 to 2005. Finally, the successful, partial restoration of Tavrichesky Garden and its role in renovation of the entire park should be mentioned as important achievement.

The project also failed in some aspects. Although it applied an urban greening approach that stresses multifunctionality and user involvement, some basic questions about green space were hardly discussed. What do people in St. Petersburg want from green spaces, for example, and are their wishes met by the present resource base? Is it sufficient to restore parks and gardens according to historical plans, without adapting to the preferences of modern society? The project also failed in its public involvement ambitions. Cultural differences between Danish and Russian ambitions with experiences of public involvement, deeply rooted distrust between park managers and the public, and inappropriate project set up were to blame for this failure. Finally, more could have been achieved in terms of introducing more strategic thinking within municipal green-space planning and management. The lack of urban planners and landscape architects within the municipal organisation could be one reason for this lack of strategic planning.

Conclusion

Based on experiences from several environmental aid projects in the former Soviet Union and Eastern Europe, Bell and Konijnendijk (2001) list several key ingredients for successful urban greening aid projects in this region. First of all, donors, beneficiaries and project partners at large should agree on a set of clear objectives and outputs at the start of the project. These objectives should be concrete, realistic and also represent a fair amount of ambition. The St. Petersburg project confirms the importance of these objectives, and all partners appreciated the clear framework of objectives, milestones, responsibilities and resources. The evaluation shows that the working process and the exchange of experience with the Danish colleagues in itself had an as important impact on the stakeholders as the actual outputs from the project. Many of the interviewees mentioned that they personally gained from the intense learning process of running an interdisciplinary project by learning how to plan the work in detail and exchange experience and knowledge.

Secondly, urban greening projects should apply an integrative approach, focusing on different benefits of green space, and including strategic as well as more operations activities to ensure project 'visibility'. Multiple values of green spaces were in focus in the St. Petersburg project, and both strategic and operation dimensions were in focus. However, the strategic approach did not really trickle down through the municipal parks administration.

Thirdly, projects should be based on local needs and adhere to local conditions, as well as build on local expertise and capacities. Therefore projects require a thorough problem definition and situation analysis prior to project implementation. This work was done in the case of the St. Petersburg project, but perhaps local expertise and culture was sometimes respected 'too much', as some important questions about restoration policies and lack of stakeholder involvement were insufficiently raised.

Fourthly, all key stakeholders need to be involved throughout the projects, however difficult this may be. In St. Petersburg, efforts were made to involve all stakeholders, and relations between at least some of them were enhanced. Public involvement ambitions, however, were not met, and not much attention was given to the preferences of the local population as concerns green space. Though, the conflict between a top–down approach in conserving and restoring the old park structure and a bottom–up policy aimed at adapting the green areas to the new needs of the local population is a problematic issue that involves the relation between democracy and protection of public goods.

Fifthly, sufficient resources should be committed to provide a sound basis for achieving project objectives. The latter is also linked to the need to ensure project sustainability by looking beyond the often limited project period. Resources in the St. Petersburg project were limited, and apart from activities in Tavrichesky Garden, spread out over too many activities. Success was achieved in terms of sustainability, as local partners committed to continuing with developing the GIS and a follow-up environmental aid project was secured.

Within the framework of Agenda 21 and sustainable urban development it is necessary to look at the city as a whole, of which urban green areas are a part. If urban green areas should be put on the agenda of politicians and urban planners, who are in charge of the urban development, it is of high relevance to discuss different timeframes and think in more strategic terms as well as in operational terms.

Urban greening is an interdisciplinary activity, where the challenges are numerous in capacity building among different stakeholders of different backgrounds and parts of society, as well as in terms of achieving actual outputs. If real improvement is to be expected, involvement of key stakeholders of various backgrounds and positions, from the higher political level down to the grassroots' level, is necessary. Working in a global urban context, it is clear that the concept of urban greening is seldom used as a separate tool, but rather related to several, interrelated issues such as urban poverty alleviation, community building, urban development and environmental improvement. Sustainable urban development is not a local problem but a global one where the constraints, possibilities and challenges are quite similar in urban areas all over the world. International networking and exchange of experience and capacity building is very important in order to find new solutions. The presented project has been a part of network building, but it would be timely to collect experiences of other urban greening projects in order to get an overview of the global situation. The environmental aid aspects of urban greening projects vary from country to country and the specific contexts set the frames for each project. In the St. Petersburg case, there was a need for restoration and development of planning and management methods. In other cases, needs might be related to tree planting or designing of new parks. Overview of experiences with urban greening as part of environmental aid projects would assist by providing insights in the successful and less successful application of specific greening activities in various urban contexts.

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