

Partnerships for Urban Forestry and Green Infrastructure Delivering Services to People and the Environment: A Review on What They Are and Aim to Achieve

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Citation: HANSMANN R, WHITEHEAD I, KRAJTER OSTOIĆ S, ŽIVOJINOVIĆ I, STOJANOVSKA M, JONES N, BERNASCONI A, BENAMAR S, LELIEVELD C, BARSTAD J 2016 Partnerships for Urban Forestry and Green Infrastructure Delivering Services to People and the Environment: A Review on What They Are and Aim to Achieve. *South-east Eur for* 7 (1): 9-19. DOI: <http://dx.doi.org/10.15177/seefor.16-09>

Received: 9 Dec 2015; **Revised:** 1 Apr 2016; **Accepted:** 18 Apr 2016; **Published online:** 4 May 2016

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ABSTRACT

Background and Purpose: Partnerships are a key mechanism in the planning, delivery and management of urban forestry (UF) and green infrastructure (GI). They can facilitate locally rooted co-management and polycentric governance. They can also achieve synergies by combining the resources, commitment and expertise of diverse stakeholder groups in order to generate valuable outcomes and build social capital. Unfortunately, the term “partnerships” is not used consistently in literature and requires clarification. The characteristics which distinguish a partnership approach from other modes of co-operation are identified and described. The diversity of existing UF and GI oriented partnerships is outlined, with reference to their stakeholders, drivers, activities and goals, together with potential advantages of the partnership approach. Considerations to be made in their evaluation are derived from this background analysis and possible success factors are discussed.

Materials and Methods: The diversity, aims and defining characteristics of a partnership approach are based on an extensive literature review.

Results: Partnerships focus on diverse aspects and delivery phases of UF, ranging from the planning, design and creation of urban forests and GI to their management and use. Benefits delivered by such partnerships include environmental and economic services as well as social and cultural services such as environmental education, health, leisure and tourism. Generating valuable services whilst at the same time nurturing relationships between stakeholders helps to develop social capital and build capacity. In addition to environmental, economic and social benefits, the evaluation of partnerships may also address internal process variables such as social learning, the relationship between partners, and motivational outcomes that can influence future co-operation.

Conclusions: Co-operative partnerships offer a promising approach for delivery in UF. The development of relationships between partners maximises the potential for developing effective long term co-operation and for building social capital as an aid to the promotion of sustainable development.

Keywords: urban green space, partnership approach, urban forestry partnerships, definition, coalitions, co-operation, sustainability, governance, social capital

INTRODUCTION

Urban forests, parks and trees enhance the quality of life of people living in cities as they provide valuable environmental, social and economic services. Environmental services include the removal of pollutants and improvement of air quality, noise reduction and provision of shade and temperature regulation [1, 2]. Social services include health benefits, increases in wellbeing, provision of attractive and openly accessible places for social interaction, informal recreation, reduction of stress and support for such physical activities as walking and outdoor sports [3-9]. Economic benefits include increased inward investment into greener cities, higher property values in well treed neighbourhoods and the improved productivity of labour forces which have green surroundings. The environmental, societal and political significance of urban forestry (UF) and green infrastructure (GI) for a broad range of urban stakeholders is widely recognised and corresponds to the many services which it provides [10-15].

GI and UF for People

GI has been defined as “the art, science and technology of managing trees and forest resources in and around urban community ecosystems for the physiological, sociological, economic, and aesthetic benefits trees provide society” [16]. The urban forest has been described as “the sum of all woody and associated vegetation in and around dense human settlements, ranging from small communities in rural settings to metropolitan areas” [17]. Urban forests accordingly comprise different elements, such as urban woodlands, parks, civic squares, green corridors and single trees. They form part of the urban and peri-urban GI that is usually shaped and managed, by professionals from different disciplines and public authorities [11, 18].

In recent years the term GI has become increasingly adopted in European countries. The European Commission defines GI as “a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services” [19]. Importantly GI is expected to deliver social and economic benefits as well as environmental ones. Natural England [20] for example, considers that GI should be “designed and managed as a multifunctional resource capable of delivering those ecological services and quality of life benefits valued by the communities it serves and needed to underpin sustainability”. The related term “green network” has been used to define “a set of connected areas of green space and habitats such as parks, paths and woodlands within an urban or suburban region which provide a range of social, ecological and economic benefits such as improving the quality of life within an area, and creating more sustainable communities” [21].

The European Commission stresses the social benefits that GI delivers, noting that, “implementing GI features in urban areas creates a greater sense of community, strengthens the link with voluntary actions undertaken by civil society, and helps combat social exclusion and isolation. They benefit the individual and the community physically, psychologically, emotionally and socio-economically” [19]. With the development of GI concepts, landscape scale planning interventions are now increasingly recognised as providing multi-functional solutions, which can provide habitat connectivity, social and ecosystem service benefits [19]. The development of GI is being further promoted through national and European policies that encourage local authorities

to think beyond their own boundaries and to develop polycentric approaches to land-use planning and management in partnership with diverse stakeholder groups [22]. Management practices which cut across traditional ownership and administrative boundaries and which satisfy a broad range of interests including nature conservation, landscape character, ecological connectivity, and recreation demands are becoming increasingly relevant. The cross-cutting nature of the challenges which GI planning, design, implementation and management face requires close co-operation between diverse professionals, scientific disciplines and stakeholder groups [23]. Partnerships represent a distinct and common format in which such co-operation can be initiated, developed, and implemented [24].

From Consultation and Public Involvement to Integrated Co-operation in Partnerships

Providing sufficient and adequately designed urban forests and GI is a challenging task. Opinions on how much urban forest is needed and how it should be designed, managed and maintained may differ between local residents and the various other stakeholders who have an interest in urban planning [25]. To find sustainable and well-accepted solutions therefore requires inclusive participatory processes and collaborative planning [26-28]. The degree of involvement and empowerment of the local population or other stakeholders in such processes varies. It can range from involving the public by informing people and encouraging them to formulate and express their opinion in consultations or public hearings to more active forms of participation and empowerment [29]. For example, some UF partnerships achieve active co-operation, co-management and empowerment of local partners through devolution of decision making powers, responsibilities and/or funding from government institutions and programmes to local bodies [10, 30, 31]. Empowerment and involvement of the general public in the planning and management of urban green space triggers social interaction between residents [15]. This can enhance social cohesion and may promote a sense of ownership and a sense of place. Such participation can be organised as a democratic, open process, which can facilitate co-operation between different stakeholder groups and involve residents and local organisations [32-37]. In Europe there are many examples where community-led initiatives (which ultimately obtained active support from public agencies) have led to the establishment of urban or peri-urban forests and parks [38]. Many of these examples have involved the formation of partnerships with close relationships and collaboration between different stakeholders [20, 21, 24].

Aim of This Paper

The use of the term “partnership” in scientific literature on UF and GI is rather inconsistent. Some articles covering participatory approaches do not mention partnerships at all, though cases of partnership-working have implicitly been included [15, 29], some do not distinguish between partnerships and other forms of co-operation [10, 31] or use the term only for specific partnership models such as economic partnerships [39]. Though the term “partnerships” has been used to name and describe many diverse examples of co-operation in the field of UF, some clarification of the concept therefore seems necessary.

The aim of this paper is to outline characteristics which distinguish “partnerships” from other terms used to describe co-operation in UF, such as “coalitions” and “alliances”, “networks”

or “umbrella groups”. The diversity of existing partnerships will be illustrated through a description of the various stakeholders, and their motives, goals and activities. The broad variety of UF or GI partnerships will be addressed comprehensively. Considerations for the evaluation of partnerships will be derived and success factors discussed in literature will be briefly reviewed.

A lack of studies on partnerships has recently been identified in a review on forestry related discourses [12]. The current paper will help to fill this gap, to better understand, develop and manage partnerships in UF and GI.

MATERIALS AND METHODS

A review of literature on partnerships and other approaches of co-operation in UF and GI has been conducted. Predominantly peer-reviewed scientific articles have been considered, as well as some scientific books and so-called grey literature from various countries (see References). Known literature was used as a starting point leading to further references and an informal internet search for additional studies was made. In addition a search in the SCOPUS database was conducted with the keywords “partnership AND forestry” and further keyword combinations including the terms “urban forestry”, “participation”, and “green infrastructure”. Since approaches towards co-operation, participation and partnerships are not confined to UF and GI, it also seemed helpful to consider some literature from other domains where these concepts play a role (e.g. social psychology, environmental and sustainability sciences).

Also the Merriam Webster Dictionary, as a well-known general English Dictionary, was consulted for the broader use(s) of the term “partnership” and to relate it to the scientific realm. Inter- and transdisciplinary documents were accordingly integrated with the UF literature to constitute a broader basis for this review.

Furthermore, informal discussions among the authors and other experts from various countries during COST Action FP1204 [see Acknowledgement] working-group meetings allowed for a scientific discourse which supplemented the study of literature and contributed to a shared understanding of central concepts. Concepts such as “partnership” and “co-operation” represent social constructs and their definitions are thus contentious and rather vague. The viewpoints presented here thus contribute to an ongoing discourse from which a revised understanding may grow and develop in the future [12, 40].

PARTNERSHIPS FOR GI AND UF

What are Partnerships?

There are many different forms of partnerships related to UF and GI. These may be involved in diverse activities such as planning, implementation, management, protection, promotion and facilitation of the use of urban forests, trees and green spaces [24, 41]. Partnerships can centre around projects, programmes, activities at different spatial scales (e.g. neighbourhood, city, region, national, European) and can focus at different types of environmental and social services which urban green spaces and GI provide to society [42, 43].

Partnerships provide a mechanism for organising co-operation between different stakeholders, which can span different sectors

and geographical scales, but have similar or partially shared interests and goals and experience common challenges [11]. Co-operation is often needed in UF as various stakeholders and different fields of expertise are involved and often the challenges which have to be faced cannot be solved effectively by one party alone [15, 26, 29]. In some cases partnership is formalised through an agreement which requires participants to contribute to tasks and problem solving. The degree of formalisation of such partnership agreements may vary greatly [31]. Agreements can take the form of legally binding contracts or well-documented Memoranda of Understanding in which the areas of responsibility of the partners and the rules and obligations of engagement are explicitly agreed and documented. However, partnerships may also develop over time with informal rules which have not been codified or explicitly discussed [31].

The variation in formalisation and the degree of shared legal liability is also reflected in the general definition of the term “partnership” in the standard Merriam Webster Dictionary [44] which distinguishes four related meanings:

1. the state of being a partner: (participation);
2. a) a legal relation existing between two or more persons contractually associated as joint principals in a business, b) the persons joined together in a partnership;
3. a relationship resembling a legal partnership and usually involving close co-operation between parties having specified and joint rights and responsibilities.

Partnerships accordingly represent dynamic systems as they are comprised of elements (partners: e.g. persons, organisations) and relationships between them. They involve co-operation and collaboration between distinct persons or social entities (groups, organisations, institutions) and their members or representatives. Stakeholders are individuals and organisations that have an interest in the urban forest either as potential beneficiaries, or because they are affected in some other way by its creation or management [24]. By forming a partnership, two or more stakeholders agree to co-operate and bring together diverse resources to generate significant outcomes. The commitments within a partnership are usually ongoing and do not merely represent just one isolated incidence of co-operation between two stakeholders. If partnerships are longer term, this can be advantageous in an UF and GI context. It can help to ensure implementation and monitoring of measures and long term achievements [42, 45-47]. However, short term partnerships may also exist, and the degree of continuity, level of interaction, power-sharing, and distribution of responsibilities required to turn interacting stakeholders or members of networks or umbrella groups into partners cannot be determined precisely. Therefore, it will not always be easy to decide whether some people or organisations are partners within an UF and GI governance context or whether they are “simply” stakeholders with shared interests, members of a network, participants or volunteers in a forestry activity.

As a basis for co-operation, the parties should agree on common strategies and actions, while their own interests are respected and represented in corresponding decisions. Equity and fairness, commitment, mutual trust, respect and consideration of mutual goals and values between the partners are crucial [24, 31, 48]. Thus partnerships are usually more than marriages of convenience. This distinguishes partnerships to some extent from similar terms such as “coalition” or “alliances.” “Coalition”

is an appropriate term to use when actors with partially shared interests collaborate to achieve certain goals through increasing resources, power and influence [22], whereas the term “partnership” emphasises the (positive) social relationship and interaction between the partners. There is often considerable competition and conflict between the members of a coalition, in particular when it comes to benefits which are derived and are to be distributed among coalition members [49, 50]. However, relationships may also turn negative in phases of a partnership and in some cases coalitions and alliances can be regarded as partnerships and vice versa [38, 51]. Likewise, co-management as a governance approach seems closely related to a partnership-like relation between the co-managing parties, and networks or umbrella groups may also involve partnerships between members. However, networks may also be constituted on the basis of loose affiliations without closer co-operation.

A working partnership involves direct interaction and co-operation between those involved. However, specific partnerships are often embedded in complex partnership structures and stakeholder networks of an UF governance domain [31, 52]. In such a network polycentric governance can be achieved and organisations on different levels (national, regional, local) are involved [51]. Some stakeholders co-operate directly with each other, whereas others are only remotely linked in a complex web of relationships within a governance structure. Figure 1 gives a schematic example depicting the inter-regional Green Network Partnership Governance model in Scotland [53]. It shows how a partnership structure may achieve an efficient polycentric devolvement of government responsibility to the local level.

Why Partnerships?

Partnerships can bring together diverse stakeholders. This can create valuable synergies if the resources and ideas of the partners are pooled and combined effectively. Partnerships are therefore a key requirement for successful urban management and planning in the context of UF and GI. For example, building partnerships can be important for securing the social and political support required for achieving urban green space programmes, projects or initiatives [54]. Partnerships between various stakeholder groups such as public administration, cities, local communities, landowners, resident initiatives and NGOs represent an effective approach towards inclusive, participatory planning and management of GI and urban forests that is well accepted and takes account of the diversity of interests. Through partnerships, polycentric governance may be achieved as agencies and individuals at regional and local level can become directly involved in the creation and management of urban forests and green infrastructure [22, 35, 36]. They are of strategic importance for promoting continuity of co-operation and long-term sustainability [55]. Partnerships also allow for cost effective provision and maintenance of urban forests and GI [14]. For example, resident groups involved in urban forest initiatives such as the “NeighbourWood” scheme in Ireland, Heiðmörk Forest near Reykjavik or at Bosco della Citta in Milan have planted urban forests at low cost to the public purse through contributions of free time and voluntary labour on the project [24, 38, 41]. However, partnerships have not only proved economically efficient by reducing the costs of providing UF and GI services. They have also been successful when it comes to the acquisition of funding and the physical resources required for providing UF and

Green Network Partnership Governance – Interregional Model

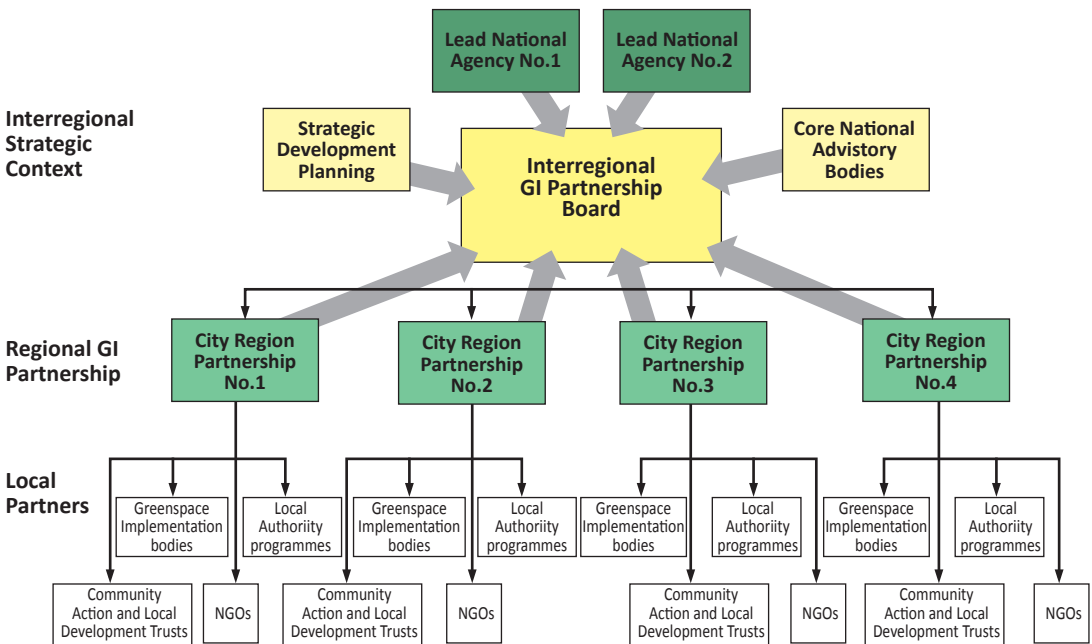


FIGURE 1. Green Network Partnership Governance – Interregional Model

GI, e.g. by involving landowners, acquiring donations or mobilising private investments or public resources [43, 51, 53, 56, 57]. Cross-sectoral networks and partnerships between cities, communities, forest owners and commercial enterprises which provide UF services to the public can also be regarded as a viable way to generate income for the forest sector based on the environmental and social services of forestry [58].

According to Teitelbaum, “empirical research reveals that community forestry generally involves, at best, a form of partnership between government and communities, but that there is also clear resistance amongst central governments to relinquish authority to communities” ([30] p 259). Partnerships represent a socially connected and cohesive form of co-operation that may have potential for developing social capital: an outcome that purely delivery-oriented forms of collaboration often lack. Developing social relationships while retaining autonomy are central aspects of successful partnerships. According to self-determination theory by Ryan and Deci [59] both aspects are crucial for promoting processes of social learning. There is broad consensus that social learning is a foundation for sustainable development [60]. Partnerships offer great potential for positioning social learning as a key element of sustainability-oriented learning and sustainable development [47, 61-63]. Social learning may for example, involve the collective development of rules and collective action to promote sustainable management of natural and social resources within polycentric governance [35, 64].

A VIEW ON THE VARIETY OF PARTNERSHIPS

Main Activities and Goals

In line with the multifunctionality of urban forests, there are also different drivers for partnerships. They focus on various activities which relate to the planning, creation, management, improvement and maintenance of urban or peri-urban forests, woodlands, parks, green corridors and other urban greenspaces of different spatial scales [21, 24, 29, 31, 39, 42, 56]. Specific objectives of existing partnerships include:

- the development of methodology and scientific support for urban green space strategies (e.g. Multi-Criteria Analysis concerning Ghent’s Urban Forest, Belgium [24], GreenKeys approach [56]);
- afforestation, creation of new urban forests, planting of trees, woodland expansion (e.g. Heiðmörk, Iceland [24], Glasgow and Clyde Valley Green Network Partnership, UK [21, 39, 41, 53]);
- redevelopment of areas with UF and GI, greening vacant or derelict sites [42, 53];
- community forestry (e.g. Community Forests programme, sponsored by the UK Government, delivered through local partnerships [24, 39]);
- creation, improvement and maintenance of community gardens, community orchards, allotment gardens, pocket parks, urban gardening [14, 42, 41];
- landscape laboratories, cultural aspects, arts, land art, increasing personal involvement with trees (e.g. Trees of Time and Place campaign, UK [24]);
- forest kindergardens and schools, outdoor environmental education (e.g. forest schools in the Nature experience Park Zurich Sihlwald, Switzerland [65], woods for learning

- [57]);
- development of recreation areas, nature parks, tourism [21, 31, 66];
- promoting health, providing healthy living conditions in urban areas [21, 24, 39, 56, 57, 67];
- sports, training and physical activity programmes (e.g. The Green Gym project, UK [24], Commonwealth Woods project, UK [53]);
- nature protection and conservation, promotion of biodiversity, green networks, habitat connectivity (e.g. Central Scotland Green Network, Garnock Valley Futurescape project, UK [14, 21, 53, 57]);
- Securing clean groundwater resources (public-private partnership in Aabo Forest, Aarhus, Denmark [42]);
- building stronger, more resilient communities [14, 21, 39, 57];
- increasing the use of urban forests and green spaces in neighbourhoods [24, 39, 14];
- scientific research and enhancement of civil science [28, 29, 56, 66];
- lobbying and campaigning [51];
- cleaning up urban forests and greenspaces, keeping them free from litter [68];
- the political support for woodland, parks and urban green space to protect them from being destroyed and transformed to built environments [51, 69].

Partnerships are dynamic and their main activities and the composition of the stakeholders may change over time. To some extent these developments can be related to the phases of a lifecycle of urban forest and greenspace projects (Figure 2), which typically involve a) planning (conceptual), b) implementation (generation and design), c) sustaining (keeping, tending, protecting) and d) utilisation (providing, enhancing specific services) of the green space. This allows partnerships to be distinguished by the following categories:

- a) Concept-oriented partnerships focusing on planning and generating ideas for the design and implementation of new urban forests and greenspaces. This may also involve plans or ideas for the redesign of existing urban space or green space.
- b) Implementation-oriented partnerships for the generation and realisation of new urban forests, green space, GI or implementation of plans or ideas for the redesign of UF and GI.
- c) Maintenance-oriented partnerships for sustaining the urban forest and greenspace. Here, forest management for retaining aesthetic, ecological and socio-economic value can be distinguished from political protection of the urban forest from urban densification and development.
- d) Partnerships aiming at the provision of additional services for increasing the social and economic value and use of existing urban forest and green space. This category may involve the extension of existing partnerships focused on a), b) or c) through additional partners who can provide specific services e.g. for education, health or leisure activities and tourism.

Some partnerships can undertake some or all of the elements (a to d) described above. The scope and time-frame of partnerships can vary considerably. Some partnerships may only form and exist for specific short term activities (such as tree planting at

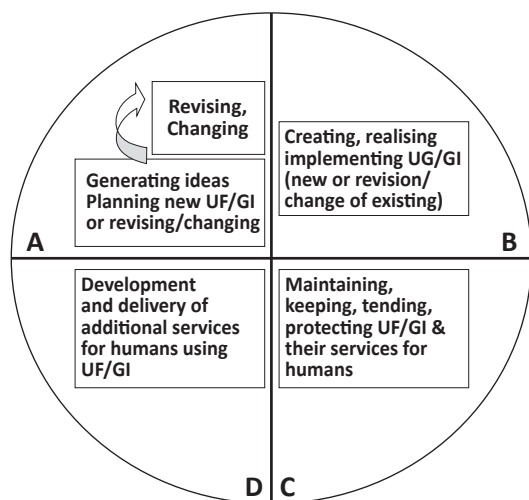


FIGURE 2. Circle of activities including planning, creation, maintenance, revision and change of urban forestry and green-infrastructure as well as for additional services focused directly on serving humans

a specific location) whereas others may be established around a particular tree planting project and then might continue to maintain the new urban forest and manage the services which it provides. Informal partnerships focused on implementation and maintenance may turn into formal economic partnerships, if income can be generated through the provision of services [39]. There are also strategic, long term partnerships which mobilise resources to address diverse UF and GI challenges, rather than merely focusing on one GI project or entity. For example, a strategic research-practice partnership between a university and a local authority environmental department (located in the same administrative area) may exist for many decades and can be effective in implementing diverse urban and peri-urban projects (e.g. between City of Skopje and Forestry Department of University of Skopje).

The formation of coalitions or alliances to protect urban forests and parks from destruction through building projects can constitute a special form of “maintenance-oriented” partnership. Such partnerships or coalitions have apparently not been granted much attention in previous research, though they are of importance, since population growth in towns and cities increases demand for construction land and development pressure on urban park and forest areas is high [11]. Examples are coalitions of citizens and environmental NGOs, such as the Citizens’ Movement for Environmental Justice, which emerged in South Korea and which conducted campaigns in several cities to protect urban forests which were threatened by governmental or corporate urban development projects [51]. Another example is the coalition and partnership which has been formed between an association of citizens, the State Institute for Nature Protection of the Republic of Serbia, and the Secretariat for Environmental Protection of the City of Belgrade to protect Zvezdara Forest of Belgrade and oppose the urban building plan developed by the Secretariat for Urban Planning. By campaigning against the urban plan, raising awareness of its consequences, organising public events, involving

the media and alerting the general public, this coalition effectively managed to gain the support of city organisations and the mayor and achieve its goal to protect the forest area [69].

Number and Type of Partner Organisations

Obviously, the complexity of partnerships tends to increase with the number of partners. However, the power and potential availability of resources also increases proportionately. This also creates the potential for greater synergy. Potential partners include professionals from many different disciplines. These may include “arboriculturalists, foresters, horticulturalists and landscape designers, planners, engineers, legislators, transport and utility managers, health practitioners and commercial developers” [24]. Further examples such as professionals from the culture, tourism and education sector can also be added to this list.

The organisations or collectives that form partnerships may include citizen groups, special interest groups (that were formed specifically for a particular UF or GI endeavour) or existing well-established non-governmental organisations (NGOs), commercial enterprises, public institutions, governmental bodies, local authorities and scientific organisations (such as universities, private research institutes). Depending on the participating organisations partnerships can thus represent public-public partnerships (e.g. between a forestry department and a school department of a community), private-private, or public-private partnerships [42, 43].

Partnerships are often cross-sectoral and may be classified on the basis of the societal or professional sectors involved. Examples might include a forestry-nature protection partnership, a health-oriented partnership [8, 23], a nature-based education partnership [65] or research and practitioner partnerships [29].

EVALUATION AND SUCCESS FACTORS

Considerations for an Evaluative Framework

The identification of the factors which facilitate effective partnership work seems crucial for the promotion of UF and GI. In order to identify success factors for effective partnership working, the criteria defining success need to be identified and this may profit from a general evaluative framework.

For the evaluation of participatory natural resource management in community forestry, direct outputs (products, services or benefits delivered as a direct result of interventions and activities), indirect outcomes (effects brought about by the delivery of outputs or from the people taking part in delivery), and process variables (contextual and behaviour-based factors that might affect both output and outcome) have been distinguished [39]. The diversity of goals and activities amongst UF and GI partnerships makes it difficult to specify particular criteria for outputs and outcomes within a general evaluative framework. However, it seems reasonable to take the interests of internal partners into account as well as those of external stakeholders. Data on environmental, social and economic benefits for both groups would need to be integrated with reference to multi-dimensional sustainability. Furthermore, when evaluating partnership work process variables and social learning should be thoroughly considered (Figure 3).

The focus on social learning implies that these learning processes and their cognitive, affective, motivational, personal development and social learning outcomes need to be considered [60, 61]:

- Cognitive learning outcomes (examples): Acquisition of knowledge, skills (e.g. about tree species, how to plant);
- Affective: Satisfaction with and enjoyment of co-operation;
- Motivational: Desire for continuation of co-operation or even closer co-operation; desire for more urban green and trees;
- Personal development, personality: Increase of self-confidence, satisfaction with life;

- Social outcomes: Social interaction, social network, friendships, mutual trust, mutual esteem, reputations, social capital.

Relationships need to be taken into account when analysing partnerships. Mutual respect and acceptance of the interests and values of individual partners is a precondition of effective social learning [59]. However, aspects of relationship quality such as positive mutual attitudes, perceived fairness of the social exchange and development of mutual trust are also acquired through social interaction and thus represent social learning outcomes.

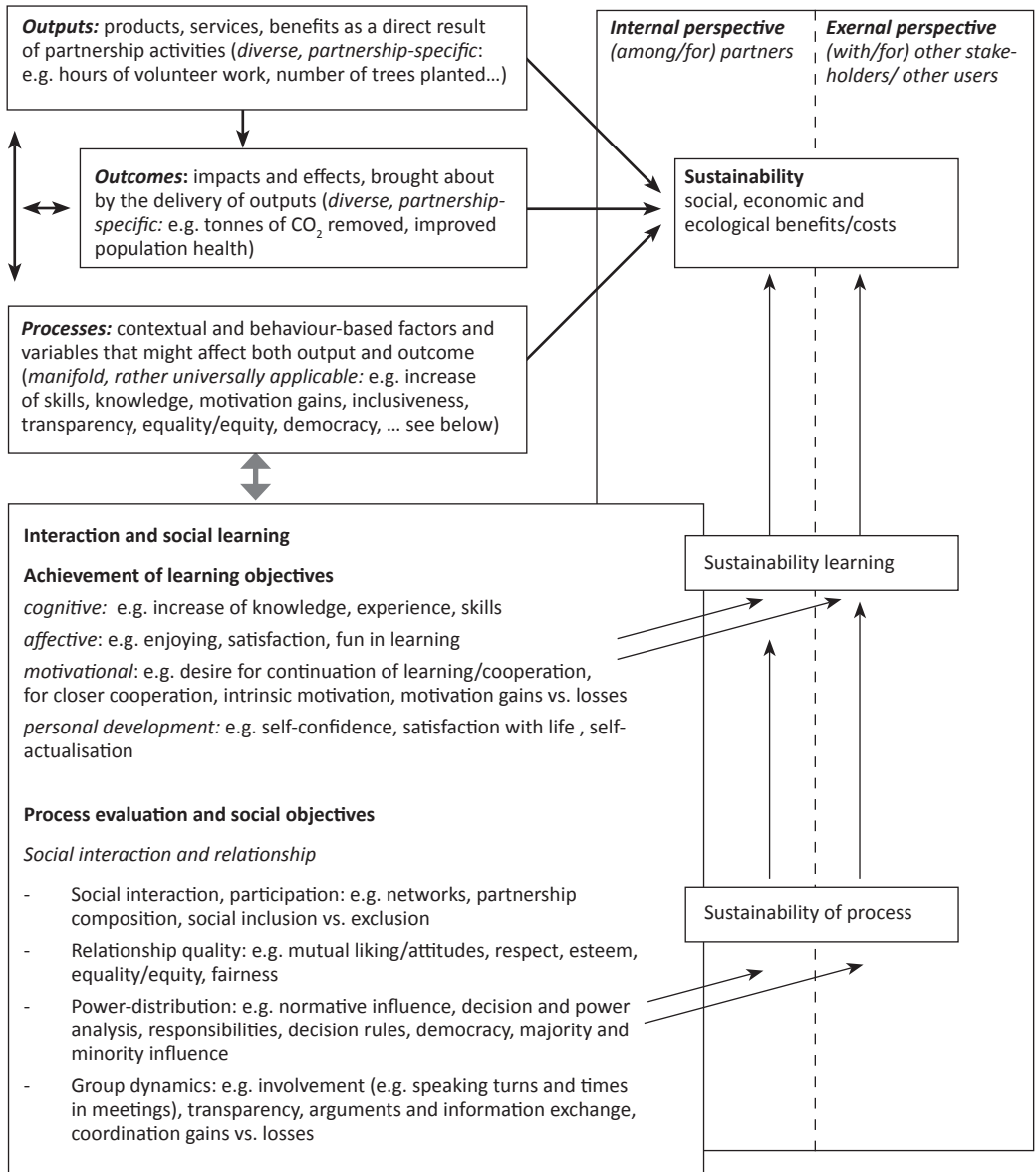


FIGURE 3. Considerations for an evaluative framework for the investigation of outputs, outcomes, and processes (social learning, relationships, interactions) of UF/GI partnerships with reference to dimensions of sustainability

The relationship between partners and relationships between members of the partnership and external stakeholders (external users or organisations) may be considered in an evaluation. Internal relationships are a central aspect of the partnership itself, but relationships with other stakeholders show how it is embedded in the wider context.

The power balance is a specific aspect of these relationships and indicators of involvement, empowerment and power-sharing in decision-making need to be considered. Possible criteria are subjective measures and perceptions elicited via questionnaires or data based on the direct observation of decision processes such as the distribution of speaking times in meetings.

A lack of evaluation studies using such indicators of participation and group dynamics has been identified in the field of community forestry partnerships and there is also an absence of longitudinal evaluation studies [39]. Longitudinal studies seem particularly helpful for the evaluation of partnerships as a means of assessing their sustainability, development (and eventually decline) and other dynamic aspects (e.g. the role of earlier relationships, the outcome of social learning and the motivation for volunteer work).

Success Factors Discussed in Literature

According to Jones *et al.* [24] complementarities of skills and other resources of the involved parties, a clear definition of aims, mutual benefits for the partners, efficiency, adaptability, formation of a distinct partnership identity, and good leadership are all important criteria for success. The latter may be provided by an effective chair with good communication skills who can guide the direction of the partnership and motivate the various players to build and maintain momentum, and to mediate differences between partners [31].

Mutual trust has been identified as crucial for effective partnership work in urban forestry [48]. A history of reciprocal co-operation can promote positive reputations and encourage mutual trust. This reduces the effort required for monitoring and shared supervision of partners [35, 36, 64]. Important personal factors include enthusiasm and creativity, competence and engagement. With respect to the degree of formalisation of partnerships, legally binding contracts have been recommended for larger scale partnership projects which have considerable funding [31]. However, bureaucracy has been mentioned as a factor which can inhibit the effectiveness of co-operation, in particular with public organisations [31].

The further investigation, elaboration and empirical validation of these and further potential success factors may profit substantially from a meta-analytic approach which combines the systematic description of partnership case studies with their objective evaluation. There is great need for a consolidation of knowledge that would lead to recommendations for good practice in the field of UF and GI. A useful descriptive framework for UF

governance which considers existing partnerships as an important element has recently been developed by Lawrence *et al.* [38].

CONCLUSION

Urban and peri-urban forests constitute a conjunction between built environments and nature, as “city forests are cultural forest landscapes that are social and cultural constructs, created on/at the meeting point of culture and nature, of the human and non-human” [70]. The cross-sectoral, interdisciplinary nature of UF and GI partnerships fits well with this and offers possibilities for integrating skills, expertise and resources to achieve complementary benefits. Participating organisations may be located in different fields such as research, politics, environmental protection, health, tourism, urban gardening and forest management. Partnerships have potential for developing synergy and can achieve participation, inclusion and engagement of various stakeholders, including local people and green space users [24, 39]. Enhanced public involvement brings more legitimacy, public support and awareness and can lead to decisions which are acceptable to all those involved parties [26]. Therefore a trend towards more partnerships for UF and GI seems promising for promoting sustainable urban development.

Insufficient funding and lack of political support represent major difficulties for successful UF initiatives and projects. Both may be a consequence of an incomplete understanding by politicians and the public of the benefits of urban forests and trees for human health and well-being in urban areas [13]. Involving people through partnership can help to secure funding, increase cost-effectiveness through the involvement of volunteers and can help to overcome these barriers. Cross-sectoral partnerships with a focus on education, campaigning and lobbying in support of UF and GI may be helpful in gaining political support for greener urban development in the future. This is important at a time when UF and GI are increasingly under threat from urbanisation [11].

Partnerships are key to capacity building in a world of globalisation and constant change. They bring actors together from different fields of experience in order to share in something new.

Acknowledgements

The article was developed in the context of COST Action FP1204 “Green infrastructure approach: linking environmental with social aspects in studying and managing urban forests”. We are grateful for the support of our cooperation and frame for fruitful discussions which the COST Action provided. In particular we thank Dr. Carlo Calfapietra for his support as Chair of the COST Action and Renate Späth for valuable discussions on the manuscript.

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