

Final report of the Short Term Scientific Mission

COST ACTION FP1204

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Title:

Development of survey tools to investigate the knowledge transfer and interaction between research community and stakeholders in Green Infrastructure and Urban Forestry

♣ Purpose of the STSM

The aim of the mission was to develop survey tools to investigate the knowledge transfer and the strong and weak points of collaboration between different groups of stakeholders in urban forestry and green infrastructure.

Indeed, there is a common belief that the scientific community is disconnected from civil society and the labour market, even though a wind of change is moving up at the international level, with EU policies bridging that gap. Focusing on Green Infrastructure (GI) and Urban Forestry (UF), we should also expect more collaboration between different stakeholders (such as policy makers, GI planners, and researchers), but it is also important to understand their actual background and needs. This is why I proposed to develop tools for investigation of this concern, and this idea was supported by experts in this sector.

♣ Description of the work carried out during the STSM

Questionnaires targeting stakeholders in GI and UF were developed with the support of colleagues of COST-ACTION institutions (Giovanni Sanesi, UNIBA and David Pearlmutter, BGU) and Giorgio Maresi from Fondazione Edmund Mach-CTT.

Three different questionnaires were formulated according to the following target groups:

- Public administrators (government ministry representatives; national, regional and local councillors, mayors, managers and technicians in public administration, etc.)
- Practitioners (planners, technicians, plant producers etc.)
- Researchers, academics etc.

The questionnaires were written in English and also translated into Italian. The online version was created using the free software Google-modules which allows the use of several types of multiple-choice questions. Although the platform is user friendly, several challenges were encountered because of technical problems. It took about one month to solve all the technical issues. After several tests and revisions following feedback from the first respondents, all of the versions were improved to work properly.

The English version was uploaded on the webpage of the COST Action:
<http://www.greeninurbs.com/investigation-of-scientific-knowledge-transfer-and-collaboration->

[between-stakeholders-in-green-infrastructure-and-urban-forestry/](#), with direct links for each of the versions: [Research](#); [Public administration](#); [Private sector](#)

The dissemination of the survey was done thanks to the help provided by:

- the COST Action coordinator, who invited the members of the COST Action to fill in the questionnaire
- COST Action members who forwarded the links to other colleagues
- Euracademy Association (GR)
- Forestry Communication Network (UK)
- ISA (USA and UK)
- Direct contact to municipalities and private companies in Europe (through web searches using Google)

The Italian version (direct links: [Ricercatori](#), [Amministrazioni pubbliche](#), [Settore privato](#)) has been disseminated by e-mail to individual contacts and to several associations dealing with urban greening and forestry, for instance:

- AIAPP
- Associazione Italiana Direttori e Tecnici dei Giardini Pubblici
- Ersaf
- Filiera EXPO
- Fondazione Minoprio
- Parco Nord Milano
- etc.

It is difficult to estimate the number of contacted persons due to the fact that many of these associations have hundreds of members, but I expect that more than 500 among the three categories have been reached in two months. The survey was opened at the beginning of October and it is still ongoing. There is no intent to recruit a representative sample of the three targeted groups because in this case we should reach a very wide sample in each country; rather, the intention is to achieve a sample which is varied enough to reflect the opinion of the three groups on this concern.

The three questionnaires include 26 questions divided into four parts:

1st Part - Personal details

- Country
- Gender
- Education
- Organisation (typology and size)
- Work position
- Work sector in GI and UF

2nd Part: Scientific knowledge transfer

- Aspects of knowledge transfer to improve
- Use of scientific knowledge transfer means

- Effectiveness of knowledge transfer means
- Strategic sectors which are worthy to fund

3rd Part: Collaboration between stakeholders:

**research and public administration/ research and private professionals
public administration and research/ public administration and private professionals
private professionals and research/ private professionals and public administration**

- Past experiences
- Strong and weak points of collaboration
- Needs which are useful to start a collaboration
- Expectation of further collaboration

4th Part: Training in Green Infrastructure and Urban Forestry

- Participation in training courses
- Typology of the provider
- Typology of learning delivery
- Characteristics of the course

Most of the questions have a response modality on a 5 point Likert scale (from 1 = Totally agree, to 5 = Totally disagree).

The recorded responses are gathered in Google-modules and can be downloaded as an Excel file. Again technical problems have been found here: some item columns have been automatically shifted in other positions, so that some time will be needed to find the proper position and allow for the proper data analysis.

♣ Description of the main results obtained

The acquisition of responses has been ongoing since October 2013, and it was decided together with the other colleagues to extend the deadline until the end of December 2013. At the moment the number of respondents at the international level is:

- 110 Private Professionals
- 130 Researchers
- 108 Public Administrators

We expect to reach a higher number of respondents, due to the fact that the distribution by country is unbalanced. At the moment we have collected preliminary results. I report briefly below descriptive results about private professionals with basic analysis of frequencies, leaving the final results and exhaustive explanations to the final reports.

Preliminary results on private professionals.

The personal details of respondents (Part 1) show that private professionals are mostly Italians and Americans. The prevalence is male (76%) and average age is 45.

67% of them work in micro enterprises (less than 10 employees) and 19% in small enterprises (between 10 and 25 employees) while the rest in medium (5%) and in big companies (10%).

The main subjects of work concern urban planning, garden management and tree assessment although there is a prevalence of respondents who work in other sectors as well.

About the knowledge transfer (Part 3A and 3B), the respondents were asked to evaluate which aspects of scientific knowledge should be enhanced for a wider exploitation (Q10). There is broad agreement that the items “Connection to real problems” and “Up-to-date training of stakeholder” should be enhanced, and there is also agreement about “Language” and “Standardization of results” and “Access to results”.

This means that private professionals are looking for a tighter connection to research institutions. Researchers and academics should enhance the language of knowledge transfer, and simplify the access to results.

The question (Q11a) about what means of knowledge is the most used, the Internet resulted in the most used, followed by manuals/textbooks and seminars/conferences. There is very low use of new technologies like e-learning.

The most effective means of knowledge are seminars, manuals/textbook and technical meetings. On the other hand, scientific publications are considered marginally effective.

Private professionals think that funding (Q12) should be addressed strategically to studies related to training and professionalism of stakeholders and to trees. Other important topics concern urban/landscape planning, issues related to atmosphere and social aspects.

Most respondents (67%) have already had some professional experience with scientific institutions (Q13). The majority of the respondents (41) had mostly technical consultancy and joint projects funded by public bodies (33).

According private professionals, the main strong points (Q14) of collaboration with scientists are *i.* the transferability of results and problem solutions, then, *ii.* the opinion exchange and *iii.* innovation. On the other hand, the weakest points (Q15) are represented by *i.* bureaucracy, *ii.* scarcity of resources and the *iii.* diversity of objectives and approaches between scientists and professionals.

77% of them would like to have new collaborations with scientists because they believe it is important to achieve problem solutions and innovation. Those (23%) not expecting future collaborations with scientific institutions believe that professionals are not needed in such collaboration, and this kind of collaboration does not lead to problem solutions or funding.

87% of private professionals had already experienced one collaboration with public administrations (Q19), which is mostly a technical consultancy (42 respondents) or a work/project financed by that public administration (35 respondents). They have also experiences joint projects funded by other public organisations (EU, Region, Province etc.) (40 respondents).

Even with public administrations, the most important strong points (Q20) of these collaborations was the *i.* transferability of results and problem solution achievement, but also the *ii.* opinion exchange and *iii.* identification of strategies, while weak points (Q21) have been identified with *i.* Bureaucracy; *ii.* Diverse interests/approaches and *iii.* Scarcity of resources.

86% of professionals would like to have new collaborations with public administrations (Q23) because they think it is a good way to achieve problem solutions and because the professionals are required by public administrations. They agree that this kind of collaboration will also support the labour market. The remainder (14%) would not collaborate with public administrations because there is little trust toward this category and because of the need for certifications, and because they believe it is not a way to achieve problem solutions.

Regarding training (Part 4), 77% of respondents have attended at least one training course concerning urban greening in the last three years (Q24). Most of them have attended professional courses organised by professional organisations (confederations, chambers of commerce etc.) and

certified training providers. The respondents could select more than one option concerning the typology of learning delivery (Q25b). The courses were mostly face-to-face in plenary (59% of selections), although also high was the percentage of selections (51%) for courses with practical activities. Apparently, the respondents have also experienced e-learning (19% of selections).

Regarding the opinions (Q25c) of that training, the respondents stated that training was cheap, it increased learner's knowledge and it was useful for their job; on the other hand, it generated little possibility of networking and exchange.

However, their suggestions to learning providers (Q26) include more practical activities, stronger connection to the labour market, release of a certification and more networking among learners.

♣ **Future collaboration with the host institution (if applicable)**

The STSM offered further opportunity to know the researches and studies ongoing at Ben Gurion University in Israel. It was interesting to notice how different departments may develop multidisciplinary collaborations with fruitful mutuality. Prof. Pearlmutter kindly explained me his researches on *i.* human comfort in a green area in the city of Tel Aviv, *ii.* on radiative properties of soil covers for urban gardens, *iii.* on insulating materials for energy saving in buildings etc.

This information raised several ideas for further investigation, even with respect to my background in plant physiology. On one hand, the green areas of Mediterranean cities are characterized by a limited number of autochthonous and/or foreign tree species: only around twenty are the most used species for boulevards and urban parks and an increasing introduction of small in size varieties that are easy to manage especially in narrow spaces. The reduction of urban biodiversity might lead to several negative consequences on pathology risk and management difficulties. On the other hand, Mediterranean areas record longer drought periods, which should raise the awareness to reducing water waste. Thus, species selection for urban green areas becomes an important issue, but it could be solved by knowing the behavior (physiological and morphological responses) of a wider variety of species like drought resistant ones (i.e. those growing in urbanized areas of the desert) in other environmental conditions.

Further ideas concern planting and landscape design in urbanized areas of the desert, but also in Italy. The underground space for root growth is generally an unknown space. The quality of urban green settings will influence the tree life length and the management costs for the same tree. It is important also to know the conditions at root level (i.e. depth of soil, explored space by roots) and to guarantee organic matter and water. In urban areas it is important to find a compromise between user infrastructures (sidewalks, car lanes) and the needs of trees for their recognized benefits.

This compromise can be solved by adopting innovative planning and materials for urban settlements in order to guarantee an optimal condition for tree growth, low cost of tree management and services and benefits for citizens.

♣ **Foreseen publications/articles resulting from the STSM**

It is expected that two final reports will be produced on the obtained results: one for international results and one for national results. These reports may be presented to national ministries, public administrations, associations dealing with urban greening and forestry etc.

Moreover, I would expect one scientific publication concerning scientific communication.

♣ Confirmation by the host institution of the successful execution of the STSM

From the 26th of October to the 13th of November 2013, Francesca Ugolini was hosted by my institution. The goal of her STSM is to prepare and administer a set of wide-ranging questionnaires regarding urban forestry and green infrastructure approaches in European cities, and to analyze the results of the survey and disseminate its findings for the benefit of the COST group.

Francesca has taken the initiative and prepared three questionnaires addressed to three target groups (researchers, public administrations and private professionals) and the dissemination of the questionnaire is ongoing, and since the beginning of her visit the number of responses has increased dramatically. Once the acquisition of data from these questionnaires is complete, she will analyze and present the results. I am confident that with Francesca's capabilities, knowledge and deep commitment to the topic, the STSM will be highly successful.

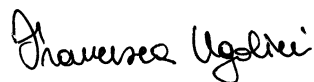


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♣ Other comments (if any)

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