What are the preferences in the development process of a sustainable urban mobility plan?
New methodology for experts involvement

Jesús Valero-Gil*
Research Centre for Energy Resources and Consumption,
CIRCE Institute,
Department of Management,
University of Zaragoza,
C/ Mariano Esquillor Gómez, 15,
50.018 Zaragoza, Spain
Fax:+34 976 761863
Email: jvalero@unizar.es
*Corresponding author

Ana Allué-Poc and Abel Ortego
Research Centre for Energy Resources and Consumption,
CIRCE Foundation,
50.018 Zaragoza, Spain
Email: aallue@fcirce.es
Email: aortego@fcirce.es

Fabio Tomasi
AREA Science Park,
Trieste 34149, Italy
Email: fabio.tomasi@areasciencepark.it

Sabina Scarpellini
Research Centre for Energy Resources and Consumption,
CIRCE Institute,
Department of Accounting and Finance,
University of Zaragoza,
50.018 Zaragoza, Spain
Email: sabina@unizar.es

Abstract: Sustainable urban mobility plans (SUMP) have been trying to solve mobility issues by identifying suitable measures to be implemented according to citizen’s behaviour and their expected impact. With the aim of improving the actual process of urban mobility development, here it is presented a new methodology, the mutual learning workshop (MLW). This methodology is specially designed to facilitate the joint work of experts advising SUMPs development. A total of 4 MLW were organised and 12
different urban mobility topics were approached. Discussion processes were moderated by experts in urban mobility from nine countries, who were leading the worktables and role playing activities. Using such methodology, the results of the 36 topics discussion and 12 role play activities are presented as important topics detected in the development of SUMPs and best practices found throughout Europe.

Keywords: sustainability; urban mobility; SUMP; sustainable urban mobility plans; MLW; mutual learning workshop; methodology innovation.


Biographical notes: Jesús Valero-Gil received his Bachelor and Honours in Business Administration in Finance. He received his Bachelor in Economics, Masters in Management of Organizations and Energy Management from the University of Zaragoza, Spain. He has worked in the private sector on management tasks and as a Project Manager in the Socioeconomics Area of CIRCE, Research Centre for Energy Resources and Consumption, also specialised in Energy Economics until the end of 2014. Currently, he is an Associate Professor in the Department of Management at the University of Zaragoza, where he is now pursuing his PhD in Binomial Environment Enterprises.

Ana Allué-Poc received her Bachelor of Business Administration and Laws from the University of Zaragoza, Spain. She was trained in Energy Markets in 2014, and starts working as a Researcher in Socioeconomics Area in CIRCE. Currently, her research interest includes energy saving in households, dissemination of best practices in energy saving and encouraging environmental improvement in firms and community. She is an Author of studies about energy and eco-innovation, participates as a Researcher in National and European I+D+i projects. In the training field, she coordinates training activities with teaching in professional courses in energy socioeconomics and sustainability.

Abel Ortego received his Industrial Engineering degree from the University of Zaragoza, Spain. He received his European Master Degree in Renewable Energy and was awarded “best master’s final project 2007–2008” by “Chair-University of Zaragoza-Brial-Enatica of Renewable Energy”. He received his Master in Energy Efficiency and Renewable Energy from the university in 2012. He works at CIRCE Foundation in the Industrial Ecology Area where he coordinates R&D&I projects related to energy efficiency and renewable energy systems promotion in different sectors like transport, agroindustry or public administration.

Fabio Tomasi is a Project Manager in several projects in which AREA Science Park was a partner in the frame of several EU programmes. He is also a Coordinator of several training courses and lectures on environmental issues. From 1999 to 2008, he has been working under different sort of contacts in the training department of AREA as Tutor, Coordinator and Planner of different training courses and projects at regional, national or European level. From 1998 to 2010, he worked as a Consultant for WWF, Italy and Shoreline on environmental issues. He was graduated in Political Sciences in 1996.
Sabina Scarpellini is an Assistant Professor at the Department of Accounting and Finance of the University of Zaragoza and Director of the Socioeconomics Area in CIRCE – Research Institute for Energy Resources and Consumption (Spain). With a wide professional experience in resources management, she has participated and led many R&D projects on the field of eco-innovation in business, resources management, energy poverty and consumers vulnerability and other related issues. She is author of a large number of international scientific papers and books, and is member of different national and international technology platforms and committees.

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1 Introduction

Due to everyday life, a high level of energy consumption is concentrated in cities. This high level of consumption and the amount of different energy types make it very important to analyse the energy systems in these cities (Jovanovic et al., 2010). In 2008, urban areas were home to 50% of the population and it is estimated that this figure will have grown to 60% by 2030 (UNFPA, 2007). As a consequence of this growth, it is expected that this year three quarters of the world’s energy consumption will be concentrated in cities (Friedman and Cooke, 2011). If this projection is considered in the long term (2050), 70% of the world’s population will be living in cities and, for this reason, it is crucial to design plans and growth strategies that ensure sustainably (Zhao, 2010).

Mobility is a contributing factor to energy consumption in cities. From the point of view of energy, mobility area falls within the transport sector, therefore, when planning transport issues urban mobility characteristics must be considered (Miranda and Rodrigues da Silva, 2012). Mobility is strongly dependent on the private vehicle and its use has a significant effect on fossil fuel consumption. For instance, in Spain, the transport sector has a dependence on fossil fuels of 98.3% (Cediel, 2009), which leads to an annual demand of 11,000 million litres petrol and 24,000 million litres of diesel fuel (IDAE, 2011).

The high dependence on fossil fuels does not only cause negative environmental effects, but also depletes resources and, hence, makes their supply conditions more vulnerable. In USA, since 1970, consumption has gone from 11.3 to 7.2 million barrels a day, and at times during this period consumption reached 14.7 and 18.7 million barrels a day, increasing the fraction of the demand covered by non-domestic petroleum from 20% to 70% (Wallington et al., 2013) to save national reserves for a not-too-distant scenario of high demand for petroleum and scarce supply. For this reason, when studying daily mobility in cities is essential to ensure the sustainability of the different means of transport. And, therefore, it is necessary to analyse the implication of urban mobility in energy consumption, analysing environmental, land use and economic aspects to select the best mobility policy solutions because not all policy instruments are as effective as others to achieve a set of policy objectives (May et al., 2012).
2 Urban mobility and its implications

2.1 Urban mobility and land use (urban growing)

The relationship between urban development and mobility is highly dependent on the types of transport and the speed at which they move. If we consider the infrastructure necessary for their use, an automobile requires 10 times the space that a bus needs (Sanz and Molina, 1980). If, in addition to the use of space, the capacity of the infrastructure developed is considered, collective means of transport such as buses and trains have an implemented infrastructure capacity of between 5000 and 8000 passengers/h m of lane width, respectively, however for cars it is less than 100 (Pozueta, 2000).

The total space requirement of a private vehicle, considering an average parking area, is 2.5 m wide and 5.5 m long (Stone et al., 2012). In urban driving conditions, a car requires a lane that is 3.8 m wide and 25 m of longitudinal space (Camagni et al., 2002). Thus, on average, in urbanisation actions aiming at infrastructure design for car use, between 66% and 80% of the land will be needed to create parking areas on the surface and streets (Newman et al., 1995). To alleviate mobility problems through town planning, there are some initiatives that can be implemented:

- designing the city so it is accessible to pedestrians
- increasing the population density
- grouping areas of activity
- ensuring streets are well connected
- drawing up a proper parking management policy.

These actions can reduce the demand for land around 20–40% compared to areas with a high vehicle dependence (Norman et al., 2006), which leads to reduced use of motorised transport.

The current situation is due to the fact that during the last century many decisions regarding transport and land use were aimed at promoting the use of the automobile, creating a high demand for land (devoted for driving and infrastructure).

Nowadays, the majority of urban areas are polycentric, consisting on a central area surrounded by small shopping spaces and the city centre surrounded by smaller residential areas. This low-density dispersed development that causes a high dependence on the car is known as sprawl (Bhatta et al., 2010).

It is important to note that the population growth in cities does not inevitably lead to sprawl, provided that, development reflects principles of smart growth (Meijers and Burger, 2010). Decisions regarding transport planning greatly affect the use of the land, directly and indirectly; directly because the land is used to build infrastructure for transport, such as roads and parking areas, and indirectly because they affect the accessibility and cost of the different areas (Kelly, 1994). If, during the city development, car-related infrastructures are favoured, a drastic reduction will be caused in the useful space available for buildings, leading to an increase in the space required for the development, which is directed towards the periphery of the city where the cost of the land is lower. As a result the city increases in size and becomes more dependent on cars (Litman, 2013). According to this, it can be understood that one of the best strategies to
promote sustainable urban transport is to integrate land use and transport planning policies (Aftabuzzaman and Mazloumi, 2011).

2.2 Urban mobility and energy consumption

Over the past decade, the car ownership index and demand for mobility in private vehicles in cities have increased, as well as the problems associated to this (Pozueta, 2000). One of the main causes of the increase experienced in demand is urban planning, due to the fact that the type of urban development can favour one form of transport over another and affect population density in cities. Areas with a significantly high population density, e.g., Barcelona, daily trips represent a shorter distance than 10 km, however in cities with a high dispersion, e.g., Johannesburg, the average distance travelled is over 25 km a day (Vanderschuren et al., 2010). Figure 1 shows the relationship between energy consumption in transport and population density. It shows that cities with greater energy consumption have a higher urban dispersion, as a result of urban development favouring the use of private vehicles.

Figure 1 Energy consumption in transport and population density (see online version for colours)

The relationship between population density and energy consumption can be seen, for example, in the fact that the variation in the annual consumption of energy per capita goes from 17,000 MJ in the city of Paris to 70,000 MJ in the city of Detroit (Newman et al., 1995).

The main cause of this energy consumption is the high dependence on private vehicles for daily mobility in cities that have a very big sprawl effect. However, it is necessary to highlight that vehicles are becoming more and more efficient each year as a consequence of the implementation of the European Directives on emissions.

In spite of this, there are aspects related to vehicles that must be improved taking eco-design aspects into account, such as the high demand for power and the increase in weight due to their larger size. It is for the latter two reasons that, despite the reduction on fuel consumption due to improved engine efficiency, the actual margin of improvement would be much greater. The variation in the power and weight of cars has tended to increase by 60% and 47%, respectively, in the last 30 years (Schipper, 2011).
As an example of this increase, in 1961 a conventional car like a Sear 1400 had a consumption of 14 L/100 km with urban use (Thomas, 2009) and now an equivalent vehicle in terms of dimensions like a Citroën C4, consumes 5.2 L/100 km. Nevertheless, the weight of the latter is 1343 kg compared to 1130 kg for the former. Proving that, despite the improvement in engine efficiency, light vehicles especially for urban journeys have not been developed yet.

In addition to direct energy consumption as a result of using of private vehicles, if we also consider that the energy necessary to manufacture one is equivalent to 20% of what it is consumed during its useful life (Aranda et al., 2011), the energy consumption considering both effects is much higher. Table 1 shows that the growth in vehicle ownership in recent years has been high, therefore, it is necessary for the population to stop depending on vehicles as the impact of this dependence goes beyond the direct energy consumption they need.

Table 1  
Evolution of the number vehicles in Spain

<table>
<thead>
<tr>
<th>Year</th>
<th>Number (M)</th>
<th>Yearly increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>18.15</td>
<td>4.0% increase</td>
</tr>
<tr>
<td>2002</td>
<td>18.73</td>
<td>3.2%</td>
</tr>
<tr>
<td>2003</td>
<td>19.54</td>
<td>3.2%</td>
</tr>
<tr>
<td>2004</td>
<td>20.25</td>
<td>4.50%</td>
</tr>
<tr>
<td>2005</td>
<td>21.05</td>
<td>3.60%</td>
</tr>
<tr>
<td>2006</td>
<td>21.76</td>
<td>3.90%</td>
</tr>
<tr>
<td>2007</td>
<td>22.14</td>
<td>3.30%</td>
</tr>
<tr>
<td>2008</td>
<td>21.98</td>
<td>1.70%</td>
</tr>
<tr>
<td>2009</td>
<td>22.14</td>
<td>0%</td>
</tr>
<tr>
<td>2010</td>
<td>22.14</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Authors' compilation using data from ANFAC (2013)

2.3 Urban mobility and environmental implications

In addition to the implications that exist between urban development, demands for land, energy consumptions and mobility, there is another very important factor associated with the use of private vehicles: greenhouse gas emissions. For instance, it can be studied the city of Lyon in which private vehicles are responsible for 91.8% of the CO₂ emissions corresponding to urban mobility (Nicolas et al., 2003).

Depending on the mode of transport selected for the trip and their occupation, the emissions vary from around 111 gCO₂/passenger for cars with an average occupancy of 1.2 passengers/km to 15 gCO₂/passenger in trams; this fact is reflected in the analysis of environmental indicators such as the ecological footprint in metropolitan areas (Muñiz and Galindo, 2005). Table 2 shows the results of a study about the evolution of the ecological footprint in different parts of the metropolitan area of Barcelona. In all cases it has increased. The outlying areas are notable, with a sharp increase as a consequence of the greater dependence on private vehicles and distance travelled daily.

Table 2  
The evolution of Barcelona's ecological footprint (ha/inhab)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcelona city centre</td>
<td>16.89</td>
<td>22.74</td>
<td>25.79</td>
<td>52</td>
</tr>
<tr>
<td>First urban belt</td>
<td>14.46</td>
<td>20.28</td>
<td>23.28</td>
<td>60</td>
</tr>
<tr>
<td>Second urban belt</td>
<td>10.77</td>
<td>17.03</td>
<td>22.41</td>
<td>108</td>
</tr>
</tbody>
</table>

Source: Values obtained from source Muñiz and Galindo (2005)

In addition to the high dependence on cars, dispersed development also creates other negative effects due to the increase of urban paved area, and the creation of heat
islands that rise the temperature in summer by around 3°C (Stone et al., 2012) and, thus, the energy demand in cooling devices.

2.4 Urban mobility and economic considerations

Most of transport policies and planning are based on economic principles (Delbosc, 2012) so this should be analysed. One of the most important economic aspects of mobility in cities is how the occupancy of public transport affects its funding, as the service quality depends on the feasibility of the system. Studying this point is crucial for the success of collective urban mobility systems (Nakamura and Hayashi, 2013). Table 3 shows the coverage of the costs achieved by public transport through the sale of tickets in different Spanish cities. This value is on average between 40% and 50%, so the direct contribution of funds by the public administration to the service must be very high to be able to maintain it.

Table 3 Coverage of cost by tickets sales

<table>
<thead>
<tr>
<th>Coverage by ticket sales</th>
<th>Madrid</th>
<th>Barcelona</th>
<th>Valencia</th>
<th>Sevilla</th>
<th>Mallorca</th>
<th>Zaragoza</th>
<th>Guipuzkoa</th>
<th>Tarragona</th>
<th>Alicante</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>43</td>
<td>49</td>
<td>44</td>
<td>48</td>
<td>32</td>
<td>37</td>
<td>33</td>
<td>63</td>
<td>57</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation using data from OMM (2010)

Table 3 shows the analysed values (including the direct cost), however, if indirect costs are also taken into account the cost is even more expensive and it can be achieved the figure of 0.58€/passenger km (ATM, 2008). So real cost of public transport services should be analysed in order to ensure their economic feasibility and taking a decision about allowing them to continue or improving them in case it is necessary.

A sustainable urban mobility plan (SUMP) is the tool for promoting specific strategies to make urban mobility more sustainable. To consider new transport systems in a SUMP is very easy, but to take up the implementation of this new transport system is full of difficulties (May, 2015).

Impact assessment of new transport systems is a difficult task. Research about the impact on urban mobility of different public transports have been previously carried out by other authors with different approaches like decision support tools, policies, energy efficiency, economy impacts, performance indicators or specific pilot projects results.

The aim of this paper is to advance in the process of making a SUMP to support local authorities in this task. For this reason it firstly proposes a new methodology, called mutual learning workshop (MLW), for the discussion and sharing of best practices among experts in sustainable urban mobility planning. On the other hand, it puts this methodology to the test by applying it to a real case where experts from nine European countries took part. In addition, the main and most interesting results of the methodology’s application are also presented.

The MLW here proposed is a mixture of several joint working methodologies widely used in various disciplines and that have already been previously used also in processes related to sustainable urban mobility planning. Particularly, MLW is a methodology that combines an effective mix of focus groups, workshops and role playing among experts in sustainable urban mobility and more specifically in developing SUMP.
As a result of years of study, nobody doubts that one of the most crucial and effective tasks when developing a SUMP are the involvement of stakeholders and citizens in the process itself.

Therefore, jointly working through mega focus groups, focus groups, workshops, public meetings, etc. have all been declared successful methodologies in the vital work of involving stakeholders in sustainable urban mobility planning (Lindenau and Böhler-Baedeker, 2014; Ibeas et al., 2011; Banister, 2008; Gil et al., 2011). Consequently, many cities are presently putting into practice these methods to help them achieve more eco-friendly cities (Lindenau and Böhler-Baedeker, 2014).

Working techniques mentioned above have already been proposed as an effective stakeholder and citizen involvement methodology, but they have never been tested for this purpose: capturing knowledge from experts and transnationally transferring best practices to improve urban mobility planning process.

These joint working methodologies’ validity is established since these approaches have been the base of the creation of institutional documents, with the aim of provide guidance in the planning phase, for instance: Decision-Makers’ Guidebook on developing sustainable urban land use and transport strategies (May, 2005).

City planning depends on the participation of professionals from a variety of disciplines, and often is influenced by popular acceptance and management support (Lima et al., 2014), so it is necessary to promote collaborative work of multidisciplinary teams if an appropriate planning is pursued.

There is also evidence that best practices benchmarking between cities is a widely used method of comparing performances and practices in order to learn from the best. Due to this, it is suggested that benchmarking is a valuable tool that may indeed help to move forward the transport policy agenda towards sustainability (Gudmundsson et al., 2005; Miranda and Rodrigues da Silva, 2012). In addition, it is also well known the significant role of transferring best practices in mobility.

According to Macmillen and Stead (2014),

“academic researchers have for example advocated best practice approaches for urban transportation planning and employer mobility policies, non-governmental organisations have published best practice guidelines on cycling policy and the reduction of transport-related energy consumption, national governments have sponsored best practice schemes for achieving sustainable freight distribution and transport integration, and supranational bodies, such as the European Commission and the Organisation for economic cooperation and development (OECD), have issued publications on international best practice in road safety and greenhouse gas abatement policies for transport.”

Hence, transferring best practices, as it is provided in the MLW this paper introduces, has often positioned itself as an effective method to transfer successful mobility policies and learning achieved by applying effective measures already tested in cities with less experience in development of SUMPs (Bulkeley, 2006).

The mentioned transferring of best practices is very common in sustainable urban mobility planning, to illustrate and according to Bulkeley (2006), there are not only clear examples of successful transition of measures between cities, but also it has been considered which are the optimal conditions to satisfactorily apply them in other cities.

Therefore, it seems obvious that the new methodology proposed in this work, able to make the most transferability in their measures, using benchmarking between cities and promoting tools as focus groups or supervised workshops, really beneficial for
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stakeholder and citizen involvement, can be a really valuable solution for the present urban transport revolution towards more sustainable and socially responsible models.

This work is structured in four sections. Once the topic has been introduced, and the scientific interest and its novelty have been stated through the literature review, the following paragraph proposes the new MLW methodology. Section 3 shows the characteristics of the empirical test that took place towards the end of 2014 and the main results obtained by applying the methodology. Lastly, there is a final section devoted to the conclusions reached by the completion of this work.

3 Proposed methodology

Before thoroughly explaining the methodology proposed by this work, some key concepts that make up this joint work new method should be briefly mentioned.

First, the World-Café Session is a methodology based on the work in focus groups that aims to gather several experts around a table (5–10) to discuss during a short period of time a specific proposal while being supervised by a moderator. Experts present their specific experience and acquired knowledge in particular cities in order to propose solutions to be discussed among the experts around the same table. Last, the moderator has to be able to write a brief report with the main conclusions of every session.

Another novelty here presented is called role playing, a technique which consists of simulating a real life situation that could take place when developing a SUMP, for instance, the first meeting dedicated to the negotiation and agreement on the main features the SUMP will include. By practicing this technique, adopting the role of a particular character and setting up a real life scenario, participants are able to imagine and train their behaviours and decision-making processes. Furthermore, it is also proposed as an interaction measure for 10–20 experts that would gathered in groups, playing a key agent in urban mobility planning process, for example, a bicycle users association or an environmental NGO. Each group makes up an internal common stance that will be presented and debated by all attendants, reaching interesting conclusions. Thus, this is especially useful to let the group understand how someone in a particular situation may react to some event and to embrace the key scenarios that are vastly common in sustainable urban mobility planning. The starting point of the activity usually is a successful case unknown by all attendants. During the role play, a moderator will guide the session with the aim to maximise its results.

Once defined in detail the two main techniques used in our MLW model, Figure 2 summarises the model and the actual implementation on the joint work with experts. Firstly, three working groups are organised around three tables (three groups around three tables for each topic approached during the MLW session).

For about 30 min, all participants will explain their vision about the topic and their related specific experience. Experts will rotate to every table, repeating the process for each topic. As a result, every participant will have the opportunity to reflect on the three proposed subjects. To ensure the debate, exchange of knowledge and networking among attendants, the topics and methodology should be sent in advance. The tables will be overseen by an expert on the particular topic that does not rotate, and a moderator will also be appointed. Both of them will be in charge of drawing conclusions on the subject dealt with in their table. Finally, moderators of each subject (table and topic), will
share conclusions to produce a common results proposal, which will be presented to all participants during the brief capitalisation meeting.

Once the first event is finished all participants will divide into three working groups, each one of them will meet around a table, and the role play will take place. The topic moderator of the previous activity will become the real case moderator. For one hour and half, experts will play several roles that will be performed in teams and a real case will be presented. Roles will be assigned according to participants areas of work. In the first place, each team (experts with the same role in Table 4) must achieve a common position as a result of a 20- or 30-min debate. During the last hour of negotiation, the whole group will reach a common position to solve the case. The aim of this activity is to promote empathy among the attendants, in order to be able to understand other negotiations parties that could take part when discussing key aspects of a SUMP.

At the end of the activity, the three topic moderators will produce a final revision of the common solution reached in their table and the process to achieve it. Finally, a last workshop presenting this last activity results will take place. The results will be integrated with the World-café conclusions already presented, providing a joint and global vision of the activity.

Table 4   Topics, dates and locations of BUMP MLW

<table>
<thead>
<tr>
<th>Date and location</th>
<th>Topics addressed</th>
</tr>
</thead>
</table>
| 24–25 September, 2014, Trieste (Italy) | How can we make home-to-school travelling more sustainable?  
What are the best options to foster economic, social and environmental sustainability in home-to-work travelling?  
Including tourist mobility patterns in SUMPs                                                                                      |
| 20–21 October, 2014, Sofia (Bulgaria)  | How important is it to involve stakeholders in mobility planning? And What are the best techniques to secure effective participation and proactive cooperation?  
Parking policies as a tool to foster urban sustainable mobility  
Secrets of people’s behaviour: interpretation of the elements affecting citizens’ choice of transport mode |
4 Main results

A presentation of how a MLW should be organised is described below using the practical application and the main results carried out in European BUMP project (BUMP Project; Ortego et al., 2015). With the aim of identifying the barriers and the most suitable measures to be considered in a SUMP, an international MLW activity was organised. This activity engaged 216 public authorities, local technicians and mobility professionals, from 90 cities located in Italy, Germany, Bulgaria, Spain, Romania, Poland, United Kingdom, Czech Republic and Hungary. A total of four two-day events were organised, each taking place in a different country and dealing with a different set of topics related to sustainable mobility planning and management, as shown in Table 1.

The common MLW model for the four events entailed on the first day workshop for selected experts only and on the second day an international conference open to the public. The MLW held on the first day allowed participants to share expertise and viewpoints on mobility planning and management issues through a series of interactive activities (a world-café session in the morning and a role-play session in the afternoon) aimed at fostering exchanges among participants coming from different countries. All these interactive tasks organised during the MLW created an informal environment, allowing participants to discuss freely and share experiences and solutions adopted at a national and international level.

In the following sections, the main results are briefly reported from each of international events, this is the effective product of the successful implementation of MLW methodology.
4.1 Trieste (Italy)

Participants provided the following solutions to make home-to-school travelling more sustainable:

- Introducing a ‘pedibus’ system, an alternative travelling system that allows children to walk to school together with other children and accompanied by an adult who is responsible for their safety.

- Increasing the presence of local police around schools at rush hours, especially near zebra crossing and dangerous intersections, as well as the presence of volunteers.

- Promoting the introduction of a car-pooling system among parents and introduce new school-bus stops at park-and-ride facilities in suburban areas in order to limit traffic in school areas.

- Investing in cycling infrastructure to discourage the use of private vehicles.

- Introducing flexible clock-in and clock-out times in schools that fit parents’ schedules, as well as making periodical surveys to monitor the impact on students and parents of the implemented mobility measures, and adjust them to their needs.

- In cities where public transport is lacking, cofunding the public transport company to have more routes available for children at rush hours.

Participants selected the following solutions as the best options to foster economic, social and environmental sustainability in home-to-work travelling:

- Offering incentives or other rewarding schemes to employees who can prove they go to work in a sustainable manner (for instance using car-pooling).

- Offering discounts to those using sustainable means of transport (for instance free parking).

- Offering favourable conditions to buy seasonal tickets.

- Setting up cycle-to-work schemes (for instance offering loans for the purchase of bikes).

- Implementing measures such as staggered hours.

- Promoting schemes to help reduce displacements when the specific features of the company allow it (allowing employees to work from home, hold meetings using videoconference, etc.).

- Appointing motivated people as opinion leaders to promote sustainable mobility.

- Offering support to transport companies in order to optimise routes (for example providing data on commuters or on numbers of employees in each shift, etc.).

Participants provided the following interesting insights to including tourist mobility patterns in SUMP's:
What are the preferences in the development process

- Non-tourist destinations, nonetheless, face similar problems on the occasion of events (exhibitions, fairs, concerts) and can use similar solutions. In addition, cruise destinations are often only transit cities and tourists are taken elsewhere.

- Having a dedicated city council’s office for mobility is crucial for effective management, but internal (horizontal) cooperation with other city council offices and outside the city council (vertical) with regional authorities is just as crucial.

- The city councils should try to exploit this resource better, for instance, increasing pedestrian areas, providing good cycle paths and a bike-sharing facility, managing tourist flows to the benefit of the city’s economy.

- The cities of Rivas-Vaciamadrid (Spain), Burgas (Bulgaria) and Piola Podlavska (Poland) were selected as individual best practices for their efforts in SUMP regional integration, intermodality and support to cycling respectively.

4.2 Sofia (Bulgaria)

Through MLW, the activities in Bulgaria provided the following stakeholders to take into account in the process of planning sustainable mobility:

- representatives of citizens’ NGOs
- representatives of different social groups
- representatives of different professions
- representatives of different neighbourhoods
- representatives of different business branches
- state bodies
- key decision makers with political power: mayors, municipal councillors, prominent experts in urban science, transport, mobility
- representatives of the health institutions.

In terms to propose parking polices as a tool to promote urban sustainable mobility, the main issues arisen and solutions provided among the participants are:

- planning parking spaces by zones
- offering discounts to those using parking and public transport facilities (for instance free public transport tickets)
- offering favourable conditions to pay for the parking
- limiting the access to the city centre by restricting the parking time
- parking schemes for residents (annual tax for parking)
- providing support to transport companies in order to optimise routes (for example providing data on commuters or on numbers of employees in each shift, etc.)
On the other hand, the secrets of people behaviour remain a mystery for mobility planning. While in more economically developed countries people are starting to prefer public transport for short trips, many citizens still consider the car as an indicator of their position in society, business success and wealth, choosing to use it every day for short city trips. This is one of the most important barriers to developing more mobility scenarios without cars. Nowadays, a strong change of perceptions in mobility is needed and sharing the “successful western models of travelling” is crucial for this purpose. Information needs to be made available for residents about the possibility of moving around the city by public transport, as well as about the difficulties of finding parking lots in the city centre and, specially, on how a good inter-modality will cut back the use of private cars.

4.3 Szentendre (Hungary)

The first discussed topic was restricting traffic in urban centres: common problems and measures to implement. The key points of an ideal policy are traffic restriction in peak hours, improving the parking policy in the outside of city centre and increasing the public transport. However, the more interesting and innovative results of this discussion were the final suggestions provided by participants:

- progressive approach – start in a smaller zone and then expand
- it could be useful not closing completely the city centre: flexible management (maybe cars can even go in but do not stay there long)
- integration with other policies (noise, pollution, health, less accidents, etc.), finding synergies
- project based: being aware of contradictive measures.

The preliminary context analysis in the development of SUMP is an effective measure that is present in many European guides with the aim to increase the utility of planning (BUMP Project). In this sense, the experts propose a general model in three steps for this important task:

- **Understanding and analysing the local situation**: Studying the actual situation with real data, taking into account not only mobility aspects, but also analysing economic and social indicators.
- **Clarifying the needs and planning the background**: Fixing the real needs.
- **Having a vision on the future of the city and its mobility and start the planning process**: Being able to translate the vision to goals.

In the topic of citizen and stakeholder involvement, the starting point was to continue with the labour initialised in Sofia, when the expert proposed the stakeholders to take into account in the process of planning sustainable urban mobility. Therefore, the more important results obtained with the application of MLW were: First, the objectives were clarified on public participant and stakeholder involvement:
What are the preferences in the development process

- to inform and involve the stakeholders in some problems/proposals
- to identify and address the stakeholders’ concerns about the problem within their area of competence
- to provide opportunities for the stakeholders to identify priorities and determine alternatives for solving the problem, as well as the relative qualities of community mobility management behaviours.

Second, the attendants discussed and selected the optimal process for this task, which it has three phases:

1. **Planning**: Stakeholder identification and analysis.
2. **Participation**: Establishment of consultative structure and development of proposal.
3. **Results analysis**.

### 4.4 Dortmund (Germany)

The first key question concerned appropriate elements of a local strategy for energy efficient mobility: what needs to be included within a SUMP?

- Being aware that the main goal is to focus on the improvement of the citizens’ quality of life.
- It is necessary to integrate the urban planning and transport system by a common approach.
- It is very important to show the real potential of innovation and technology and present the state-of-the-art (e.g. electric buses).
- How to teach people (citizens, children) what sustainable mobility is.
- Considering that local authorities may be afraid of the development of ‘big plans’. It is more promising to implement small plans and approaches.
- Many cities have signed the Covenant of Mayors: SUMPs should be linked and coordinated with SEAPs (Sustainable Energy Action Plans).
- National funding has to be focused on the real needs of society.

In addition, the participants were referred to the limitations of medium-sized cities in supporting energy efficient urban mobility, because there is a lack of methodologies to evaluate the impact of applied measures.

In the next topic, referred to boosting the bike use in medium-sized cities, the participants were introduced to common problems about bike use in cities, such as medium-sized cities are in general rather car-oriented (private households own often two or more cars, there are few parking restrictions and plenty of space for car parking). Also in this type of cities the levels of cycle use are generally low (bikes are mainly used mainly by children and for leisure activities).

With the aim of improving the situation and breaking down the barriers, the following measures for boosting bike use were identified:
• improving infrastructure (quantity and quality)
• reallocation of road space from motor vehicles to cycles
• increasing the bike hire systems
• improving cycle parking and storage (also in terms of security)
• workplace facilities for employees
• integration with public transport
• safety cyclist improvements
• improving the perception of cycling among potential cyclists
• improving the perception of cycling among key decision makers (political support)
• education and financial incentives for bikers.

In the discussion of the last topic, first, the experts selected the more important barriers for the successful development of public transport in medium-sized cities:

• short distances in medium-sized cities, only few passengers (low demand, but elder people causing problems at peak hours).
• routes for workers and commuters cannot be covered by public transport due to spread regional settlement structures; conflict between accessibility (many stops) and rapid connections (needed for commuters and young people).
• traffic jam and cars in the city centre, no car restrictions (politically not accepted).
• low budget; cities are often not owner of public transport companies
• public transport companies: no change wanted, paid for kilometres, not for transporting people
• lack of political support; only particular interests (especially when elections are close), user perception of public transport: fear of negative reputation as a result of using public transport among users older than 20 years.

There are many main effective measures to improve this situation discussed and approved by participants, but the key conclusions are four:

• The sustainable urban mobility has two key points to take into account. Focusing on pupils, elderly, poor (small level of service) or addressing broad range of users with well-equipped facilities (fast service connections, internet available, e-ticketing, …).
• The decision about the type of company (public or private) is difficult; it depends on the involvement of the mayor and on the special features of the municipality. Public companies are not necessarily better than private operators.
• In many occasions public transport is not profitable; income from car restriction is needed to improve the public transport system and also an emotional marketing strategy would be required.
What are the preferences in the development process

- The system needs smart marketing: support of well-known and important people and especially addressed to show individual benefits: it is necessary to highlight the economic, social and environmental impacts of public transport.

In the light of present results, it can be observed that the implementation of the MLW methodology can be effective for experts involvement in sustainable mobility planning processes.

The World-Café and Role Play sessions were truly appreciated by all attendants during the testing phase of the methodology, according to the survey that was conducted after the event and that was competed by all participants at the end of each session. Of 216 surveyed experts during the four events, 90% considered ‘very useful’ and ‘very relevant’ their participation in the sessions, while the remaining 10% agreed on the importance and relevancy of the session, although at a lesser extent.

In the World-Café Sessions, the most appreciated feature in its design was the wide range of possibilities it offers for exchanging experiences, know-how, cases of success, networking, etc. On top of that, Role Play sessions allow experts to approach a day-to-day issue from different perspectives. Therefore, the proposed MLW methodology can be a complement to encourage interaction among experts in a distended and more inviting atmosphere that can lead to benefits for the whole urban mobility planning process.

5 Discussion and concluding remarks

Mobility planning processes, aiming for the achievement of new more sustainable scenarios that improve citizens’ quality of life, are increasingly common among European local authorities. European institutions have found in SUMP s a really valuable tool to meet the ambitious European targets regarding environment and sustainable transport. Consequently, there are plenty of national regulations including clauses with strong recommendations about the elaboration of SUMP s in medium-sized and large-sized cities.

As a consequence of this institutional phenomenon, this paper proposes a new methodology of joint working to improve the current mobility planning processes, taking advantage on the acquired know-how and best practices in recent years along Europe. To illustrate the effectivity of the model here presented, it has been tested in four international events, which congregated 216 public authorities, local technicians and mobility professionals from 90 cities. It is worth mentioning, that counting on so many professionals in the launching of this new methodology provided the collection of updated and significant information about 12 different topics that are always present in any sustainable urban mobility planning process. The main advantage of the results here explained, lies on the design of the proposed measures, extracted from the experience on its implementation in different cities, and not from a theoretical framework unable to integrate the common obstacles that need to be overcome.

The several methods accepted for SUMP s development has had an impact in the importance of stakeholders involvement as one of the key steps for, both, the quality and the scope of this kind of planning tools. In this regard, in the European guide about the planning process of sustainable mobility (Wefering et al., 2014), it is appreciated that it should take into account “the involvement of stakeholders as experts using a transparent and participatory approach”. So far, examples of this particular approach can only be
found cited in literature along with generally accepted methodologies for citizen involvement.

Nevertheless, little is known about the important role of stakeholders along the planning process. At this point, the methodology proposed (MLW) can provide additional support to the practice, by integrating experts and stakeholders. This, allows European local authorities to incorporate their ideas and opinions in SUMPs elaboration process. The involvement of these agents can improve at a great extent the sustainable mobility planning process, although, so far, the integration of stakeholders in the procedure is limited, due to complicated organisation and the significant amount of resources needed for its proper implementation.

Thus, the MLW is proposed as a new methodology that can be replicated and used in new SUMPs development, as well as in their revision or update process, reducing costs and increasing usability of results. Moreover, it can add specific ideas to other fields of knowledge, such as institutional change and adaptation, policy-making or regulation framework for sustainable development.

Although the model shows relevant contributions as a new methodology of joint working and best practices transferring, there are two main limitations that need to be weighed when studying its replicability. On one hand, its implementation on different countries has an important drawback: language. The results maximisation will depend on a large extent on the fact that the working groups are able to linguistically communicate. It seems obvious that the results achieved during the 30-min debate will be reached more easily and more effectively if the entire working group has the same linguistic capacities. However, integrating experts from several countries increases the scope of measures to implement, which will significantly raise the novelty and validity of the results. In this particular case, the barrier of language was to a certain extent overcome, since the tables’ operational design was based on the participants linguistic capacities. Therefore, it allowed the full advantage of the international nature of the event. On the other hand, the transferability of the suggested measures itself, could pose some difficulties due to its implementation in different working settings and cities. In addition, according to Bulkeley (2006) there are some additional limitations to learn the degree of applicability and operation of the suggested measures. In this specific case, the proposed measures, as results to be applied from the different MLW that took place, were considered weighing such restrictions.

These identified limitations imply important opportunities for future researches. Thus, it would be interesting, as a new research area, the integration of these limitations in the MLW model, taking into account different studied settings and contributing to increase the validity of the results achieved through its implementation. Therefore, the methodology can be completed with mechanisms that reduce the context’s impact as a controller of ideas among experts. This paper’s contribution could be tested with an analysis of new MLW in different scenarios.

It is also remarkable, at least in Europe that cities do not resort to academia for information on new policies (May, 2015), therefore, this work should effectively contribute to further improvements in guiding the development of SUMPs. It is clear that such guidance will only be fully effective if cities can be encouraged to adopt a more robust mutual learning culture. The proposed methodology is a clear example that the research community can help to tackle both of these issues by stimulating interactive learning in urban transport policy. The results of the methodology application can be useful to support many European local authorities, which are now involved in the process...
of elaborating a new SUMP or checking some existing plan, continuing the European trend towards the sustainability.

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References


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**Website**


**Note**

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