

# ISEMOA

Improving seamless energy-efficient  
mobility chains for all



## EVALUATION REPORT

Deliverable no. D6.2 of the project ISEMOA

Date of finalisation of this document: July 2013

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Start date of the project: 18/05/2010

End date of the project: 17/05/2013

Project website: <http://www.isemoa.eu>

Grant agreement no. IEE/09/862/SI2.558304 – ISEMOA, Improving seamless energy-efficient mobility chains for all

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ISEMOA is co-funded by the European Union under the IEE 2009 STEER programme.



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# 1 ABOUT THE ISEMOA PROJECT

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ISEMOA - Improving seamless energy-efficient mobility chains for all – started in May 2010 and was a 3-year project supported by the European Commission within the IEE-programme.

ISEMOA aimed to help local and regional authorities in Europe to increase energy-efficiency in transport by improving the accessibility of door-to-door mobility-chains and thus enabling all citizens and visitors (including people with reduced mobility (PRM) to adopt a less car-dependent lifestyle. Furthermore, improving the accessibility of public spaces and public transport will increase the quality and attractiveness of public transport, and contribute to increasing safety for pedestrians and cyclists.

In order to achieve this goal, ISEMOA developed a tailor-made quality-management-scheme for the continuous improvement of the accessibility of the whole door-to-door mobility-chain in European municipalities, cities, and regions (henceforth referred to as ISEMOA-schemes). These ISEMOA-schemes reflected a standardised quality management process based on the successful BYPAD, MaxQ and MEDIATE-schemes. At the core of the ISEMOA-schemes is a moderated audit process. The process helps local and regional stakeholders, together with an external auditor, to assess the state of accessibility of public space and public transport in their area and to develop strategies and measures to continuously improve the quality of this.

The ISEMOA-schemes apply a holistic approach by taking into account:

- The needs of all categories of PRM (i.e. people with disabilities, people with heavy / bulky luggage, people with small children, people with temporary impairments, people with non-average stature, older people, etc.);
- The whole door-to-door mobility-chain made up of sustainable transport modes, including walking, cycling, public transport, and multi-modal mobility;
- All kinds of barriers (i.e. barriers related to physical conditions, organisational aspects, attitudes of people, etc.).

In order to develop these ISEMOA-schemes according to the needs of the stakeholders, the project placed great emphasis on the involvement of all relevant stakeholder-groups (PRM, city-consultants, local / regional authorities, etc.) from the very start of the project. The development of the ISEMOA-schemes was an iterative process, as they were first implemented in 18 test-sites all over Europe, and then improved according to the feedback of the test-sites'-stakeholders.

The implementation-process of the ISEMOA QM-schemes aims to raise awareness of the issue of accessibility for PRM among local and regional decision-makers. Making clear the link between accessibility and energy-efficiency in transport should encourage discussion among all relevant local and regional stakeholders, and help to bring forward a local / regional strategy for the improvement of accessibility.

Consultants, agencies, and organisations working with municipalities, cities, or regions all over Europe were invited to attend the ISEMOA training-workshops for external auditors. These training-workshops took place in 15 European countries in order to enable consultants, agencies, and city-advisors to use the ISEMOA QM-schemes in their daily work with local and regional authorities.

## 1.1 The ISEMOA consortium:

<b>Coordinator:</b>	
FGM-AMOR (AT)	
<b>Partners:</b>	
AGEAS (IT)	NP (CZ)
BSRAEM (BG)	SECAD (IE)
Ecuba (IT)	Sinergija (SI)
Edinburgh Napier University ENU (UK)	TAS (UK)
Energy Agency of Plovdiv EAP (BG)	Technische Universität Dresden TUD (DE)
ETT (ES)	Trivector (SE)
IEP (CZ)	UIRS (SI)
ITS (PL)	University of Zilina (SK)
Mobiel 21 (BE)	URTP (RO)
<b>Subcontractor:</b>	
Mobiped (FR)	
<b>Advisory Committee:</b>	
Adolf Ratzka, Christa Erhart, Graham Lightfoot, Jarmila Johnova, Petra Lukesova, Thomas Zwolinski	

## 2 REPORT SUMMARY

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This deliverable reports on the monitoring and evaluation of the ISEMOA Project. At the beginning of the project a range of monitoring and evaluation objectives, indicators, measures and targets were specified, which for the purposes of this report can be broadly divided into 4 broad categories, namely:

- General project monitoring and evaluation objectives (related to the general project activities, e.g. development of the ISEMOA QMS, implementation of accessibility improvements);
- Dissemination evaluation objectives (related to the promotional activities undertaken by project partners to promote ISEMOA across Europe);
- Audit training evaluation objectives (related to the success of the ISEMOA audit training workshops in terms of their content and usefulness for trainees);
- Overall project impacts (related to long-term fuel savings and CO<sup>2</sup> emission reductions achieved as a direct result of the project).

Overall, all evaluation objectives were met, the performance measures selected were either met, sometimes exceeded, or are likely to be met in the longer term - and we can conclude that the ISEMOA Project has been a success.

A more detailed overview of each performance indicator, associated measures, targets and results achieved is presented in the main report.

## 3 INTRODUCTION

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### 3.1 ISEMOA monitoring and evaluation specific objectives and targets

At the beginning of the project an internal monitoring and evaluation report was produced containing a number of specific evaluation objectives, indicators, measures and targets. The main purpose of this report was to set out the planning and implementation of monitoring and evaluation of the ISEMOA QM schemes developed within the ISEMOA project.

*Monitoring* allows us to ascertain what happened and *evaluation*, why it happened. Therefore by establishing protocols for measuring monitoring and evaluation it will allow us to understand what worked, what did not work so well (and the reasons why) and have the ability to compare the implementation of the QM schemes across the 18 implementation sites. This comparison in itself will provide invaluable information on the importance of cultural and political structures in implementing such schemes.

The monitoring and evaluation results in this report are directly linked to both the specific and strategic (long-term) objectives as set out in Annex I of the Grant Agreement of ISEMOA in order to demonstrate that the project has met the objectives it set out to achieve.

For the purposes of this report, we have divided performance indicators into 4 broad categories that together will allow a full evaluation of the ISEMOA Project, namely:

- General project monitoring and evaluation objectives (related to the general project activities, e.g. development of the ISEMOA QMS, implementation of accessibility improvements);
- Dissemination evaluation objectives (related to the promotional activities undertaken by project partners to promote ISEMOA across Europe);
- Audit training evaluation objectives (related to the success of the ISEMOA audit training workshops in terms of their content and usefulness for trainees);
- Overall project impacts (related to long-term fuel savings and CO<sup>2</sup> emission reductions achieved as a direct result of the project).

The remainder of this report presents an overview of these specific indicators, associated measures, targets set, and results achieved.

## 4 GENERAL PROJECT MONITORING / EVALUATION INDICATORS, MEASURES, TARGETS AND RESULTS

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### 4.1 Chapter 4: Overview

This initial section of the report presents the results of the specific monitoring and evaluation indicators and targets that were created to evaluate the general impacts of the ISEMOA Project. In total 8 indicators were specified at the beginning of the project, and a summary of each indicator, associated measures, targets and results achieved are presented below.

### 4.2 Indicator 1: Implementation of long-term accessibility strategies and measures at test site locations

The first and arguably key project indicator was *"To create a process of continuous improvement of accessibility of local / regional public spaces and public transport in the municipalities / cities / regions, where the ISEMOA QM-schemes are implemented"*.

Specifically this relates to the impacts of the ISEMOA QMS schemes in terms of the long-term strategies and measures that would subsequently be implemented by the participating cities/municipalities/regions.

In 17<sup>1</sup> of the 18 test sites a range of measures and strategies were implemented following the ISEMOA audits. Further details of each test location are available on the ISEMOA website (<http://www.isemoa.eu/> - under project information / test sites), although, for illustrative purposes a brief summary of the measures implemented at 3 test-site locations are presented below:

- In Zilina (Slovakia), a range of improvement measures were identified, including changing the position of the information panels according to PRM limitations; increasing the number of benches along the paths connecting housing estates with key services (e.g. hospitals, clinics, shops and supermarkets); introduction of low-floor buses, new cycling routes, barrier-free access to key city buildings, pavement improvements, PRM friendly route maps, and improved public transport services to better meet travellers' needs;
- In Kolin (The Czech Republic), the main result was an agreement to prepare a trail connecting the main city areas (the city's historic centre, main train station and a centre for PRM) and to seek funding from the Czech National Programme on Mobility for further improvement measures. The ISEMOA-team meetings also provided the first opportunity for staff of the city hall transport and land-use planning departments to

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<sup>1</sup> At the time of writing this report, 1 test-site - Vallo di Diano had not implemented any measures, and based on the response from a follow-up interview also indicated that they are not planning to implement any measures in the near future. We have thus excluded this test site from assessing this specific indicator and also the fuel and CO2 reduction calculations, later in Chapter 7.

meet with representatives of PRM groups to identify current accessibility problems improvement strategies, and in;

- Sibiu (Romania) an action plan was developed containing a range of measures, including the installation of tactile strips at key routes, audible traffic signals, dropped kerbs, audible announcements on bus services, refurbishment of bus stops, public transport staff disability awareness training, translation of public transport information (to assist tourists), consultation exercises with PRM, and a number of articles in the local press to raise awareness about accessibility issues.

Given that 17 out of the 18 test sites have or are planning to implement accessibility strategies /measures, we can conclude that this performance indicator measure has been achieved.

Whilst the impacts of these improvement measures were problematic to measure in the shorter-term (i.e. within the project lifespan), in the longer-term it is possible to predict potential fuel savings and CO<sup>2</sup> reductions - see Chapter 7 later.

### **4.3 Indicator 2: Ensure the long-term sustainability of ISEMOA**

Associated to the above, the second indicator related to "*Ensuring the long-term sustainability of ISEMOA after the project finishes*". Two measures were selected, namely:

- "*ISEMOA information and ISEMOA materials are available on the ISEMOA website for 10 years after the end of the project*". At the end of the project the ISEMOA website domain was purchased for a further 10 years, so all ISEMOA materials, auditor contact details etc., will be available until 2023;
- "*ISEMOA auditors indicate they will use ISEMOA QMS in future*". Feedback received from all the hosts of audit training sessions (see Chapter 6) reported that on completion of the audit training, all auditors indicated that they were willing, and plan to use the ISEMOA QMS in their future work.

Based on the above, we can conclude that this performance indicator has also been achieved.

As with Indicator 1, this second part of the indicator allows us to make predictions about the future long-term impacts of ISEMOA on fuels savings and CO<sup>2</sup> reduction - Chapter 7 later.

### **4.4 Indicator 3: Increase knowledge on the relationship between accessibility and energy-efficiency in transport**

This third performance indicator relates to a general increase in knowledge concerning accessibility and energy efficiency in transport. Specifically to "*Spread know-how on the relationship of accessibility and energy-efficiency in transport among decision-makers, stakeholders and multipliers in Europe*".

The measure selected for this indicator was to distribute 2,000 copies of the guidance documents ISEMOA D3.4 (*The benefits of improving accessibility*) to relevant stakeholders across Europe.

Throughout the project, the document was distributed by all partners at various presentations to stakeholders in Europe, via ISEMOA QM sessions, training workshops for external auditors and also at numerous national and international events. In total partners reported 987 documents were distributed by these means, although, at the time of writing this report several partners had not provided this data. In addition the deliverable was made available on the project website, translated into 13 different languages, and whilst no specific data is available regarding the number of downloads, it can be assumed that a certain number of downloads were made.

Whilst on face value it appears the target was not met, several partners did not provide this data, We also do not have a precise number of documents downloaded from the project website so the numbers actually distributed will be higher than reported here, and closer to, or exceed the target set.

#### 4.5 Indicator 4: To spread knowledge of ISEMOA

Related to the above, this indicator related "*To spread the knowledge of ISEMOA and of its results in the broadest and deepest possible way*".

To measure this objective, several measures were used, namely:

- **Distribution of 4,000 project promotion brochures (D7.5) by partners.** Whilst over 14,000 brochures were printed, and translated into different partner's languages for distribution, the final version of the brochure was not made available until a few months before the end of the project ended. Accordingly, there had been insufficient time for all brochures to be distributed at this stage. All project partners and the ISEMOA trained auditors have confirmed they will continue to disseminate ISEMOA after the project ends, so the target number will be met (and exceeded) over time;
- **The number of participants attending ISEMOA QM-sessions.** Whilst no specific target number was set, in total 233 participants attended ISEMOA QM sessions in 18 European countries;
- **To hold 15 training workshops and train 65 ISEMOA auditors.** By the end of the project, 19 training workshops had been held and 182 auditors trained, so the target for this sub-measure was exceeded;
- **700 stakeholders would sign up to receive project newsletters:** By the end of the project, over 2,500 stakeholders had signed up to receive the project newsletters. The numbers of stakeholders signing up to receive the newsletter progressively increased through the project and the figure of 2,500 relates to the number receiving the final newsletter, so the target for this sub-indicator was exceeded;
- **The ISEMOA website would be linked to at least 40 other websites:** At the end of the project ISEMOA was linked to 43 other websites, and so the target for this sub-indicator was met.

Overall (and taking into account other indicators below), knowledge of ISEMOA has been widely and successfully distributed across Europe - see also additional dissemination performance indicators in the following chapter.

#### 4.6 Indicator 5: Integration of knowledge into ISEMOA

Indicator 5 aimed "*To integrate existing knowledge and good-practice into ISEMOA*". The measure selected was to integrate specific project deliverables (i.e. state-of-the-art research) into the working materials for ISEMOA QM-working groups.

A considerable amount of time and level of detail was spent at the start of the project to ensure current and best practice was incorporated into the ISEMOA concept and its outputs. For example D2.3 (Guidelines database - a collection of existing guidance materials for improving accessibility) and D2.5 (Good practice examples - a collection of good practice examples related to accessibility) fed into the working materials for ISEMOA QM-working groups.

As such, we can conclude that this performance indicator was also achieved.

#### 4.7 Indicator 6: Development of ISEMOA QM-schemes

Related to the above, this indicator related to the incorporation of expert stakeholder knowledge into the development of the ISEMOA concept/scheme- specifically "*To develop the ISEMOA QM-schemes according to the needs of stakeholders*". The overall aim was to obtain expert feedback into initial draft versions of the ISEMOA QMS scheme, specifically:

- To conduct expert interviews with relevant stakeholders to obtain feedback to the ISEMOA QMS scheme;
- To obtain expert feedback from members of the Advisory Committee;
- To obtain feedback from auditor trainees and attendees at ISEMOA QMS sessions.

In total 47 interviews with stakeholders were carried out, in 14 European countries (45 with local/regional authorities and 2 with public transport operators). As with Indicator 5 state of the art research was performed to identify current best practice which was fed into the ISEMOA concept and QMS scheme. Feedback was provided by attendees at the ISEMOA QMS meetings and audit training sessions, and advice was provided by members of the Advisory Committee on initial draft working materials, which was taken on board by partners to ensure the final ISEMOA products did fully reflect the needs of stakeholders.

Based on the above, we can also conclude that this performance indicator was achieved.

#### **4.8 Indicator 7: Induce communication among stakeholders where the ISEMOA QM-schemes are implemented**

Indicator 5 aimed "*To induce communication among stakeholders where the ISEMOA QM-schemes are implemented*". Whilst there was no exact measure specified for this indicator, the general aim was to induce communication between different stakeholders attending ISEMOA QMS sessions and thus facilitate a holistic approach to accessibility planning.

Attendees at the QMS sessions came from a diverse background (e.g. land-use planning, welfare/social, diversity, mobility, construction work departments, user associations and other relevant organisations). Stakeholders reviewed the sessions as very positive (i.e. very useful, informative, bringing different departments together and creating new 'networks'). Many participants also indicated that due to the ISEMOA QMS session, they now viewed accessibility issues and accessibility planning from a different perspective and in the future would adopt a more positive and ISEMOA-concept approach.

Based on this feedback, we can conclude that this performance indicator was also achieved.

#### **4.9 Indicator 8: To spread the knowledge of ISEMOA among stakeholders who advise public entities**

As above, whilst there was no exact measure specified for this indicator, the general aim was to increase knowledge about ISEMOA and to equip and motivate future auditors to implement the ISEMOA QMS approach in their work - and is thus also related to indicators 1 and 2 in ensuring the long term sustainability of ISEMOA.

As mentioned earlier, 182 ISEMOA auditors were trained and all indicated they plan to advise and use the ISEMOA QMS in their future work with cities / municipalities / regions. Accordingly, we can conclude that this performance indicator has also been achieved.

#### **4.10 Chapter 4: Summary**

Based on the evidence provided above, we can conclude that all 8 general project performance measures have been achieved, or will be achieved in the near future and, for some, the targets set were exceeded.

## 5 EVALUATION OF DISSEMINATION ACTIVITIES

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### 5.1 Chapter 5: Overview

Whilst closely related and overlapping with some of the performance indicators in the previous section, this chapter reports on the additional project indicators directly designed to measure dissemination of the ISEMOA project.

The broad aims of these indicators were to:

- Spread the knowledge of ISEMOA and of its contents in the European background in the broadest and deepest possible way;
- Directly communicate to the main target groups and key actors in a tailored way oriented at their requirements;
- Disseminate the results and materials to potential multipliers;
- Raise awareness among decision-makers, politicians, and multipliers for the relationship between accessibility and energy-efficiency in transport;
- Disseminate the ISEMOA QM scheme to representatives of municipalities, cities and regions in the partners' countries.

In total an additional 8 (to those covered in the previous chapter) dissemination indicators were specified at the beginning of the project, and a summary of each indicator, associated measures, targets and results achieved are presented below.

### 5.2 Indicator 1: All public deliverables are available for download as soon as completed

The measurement of this indicator is self-explanatory, and all public deliverables were uploaded to the project website as soon as approved by the EACI. As such this performance indicator was achieved.

### 5.3 Indicator 2: Promotion of ISEMOA QM-scheme

This indicator relates to the promotion of the ISEMOA QMS materials (i.e. ISEMOA QMS working materials and guidance materials for auditors), with the specific target of providing 200 stakeholders with these materials.

In total 415 stakeholders received these materials (233 attending ISEMOA QMS sessions and 182 trainee auditors). Additionally, these materials were made available on the project website, and whilst no precise figures are available for the number of downloads, we can assume that an additional number of stakeholders accessed these materials. As such, this indicator has been achieved, and the target exceeded.

### **5.4 Indicator 3: Creation of a networking platform**

This indicator related to the creation and subsequent use of an internet-base networking platform to facilitate discussion and communication between ISEMOA auditors and interested cities/municipalities/regions – which in the longer-term would result in future ISEMOA QMS schemes been implemented. The initial target specified was set at 2,000 website requests per month. The networking platform was only launched in March 2013, and since that time there have been approximately 1,000 website requests, with a growing number each month.

Whilst the target for this performance indicator was not met within the project's lifespan, given the growing number of requests each month, and trends observed, it is expected that over time this indicator will be achieved.

### **5.5 Indicator 4: Translation of ISEMOA promotional materials**

This indicator relates to the translation of ISEMOA promotional materials to ensure a wider access and information spread as possible accross Europe about ISEMOA. By the end of the project Promotion brochure (D.7.5), standard presentation (D.7.2), website (D.7.3), and 3 newsletters (D.7.4) had all been translated into 13 European languages. Accordingly, this indicator has also been achieved.

### **5.6 Indicator 5: Upload ISEMOA information and material onto Eltis website**

Related to the above indicator and to disseminate ISEMOA as widely as possible across Europe, the target was to make available ISEMOA QMS materials onto the Eltis's Tools for practitioners' section of the website (<http://www.eltis.org/>). As soon as the final versions of these materials were available they were then added to the Eltis resource. While we are unable to establish the number of viewings or downloads for the ISEMOA materials, this indicator has been achieved.

### **5.7 Indicator 6: Promotion of ISEMOA via press releases and articles**

Again this indicator related to the widespread promotion of ISEMOA across Europe. An initial target was set to submit at least 6 news releases and 6 articles to relevant journals / magazines. By the end of the project, a total of 49 press releases and articles had been published in a range of national and international media outlets, and we can conclude that this indicator had been achieved and the target exceeded.

## 5.8 Indicator 7: Presentation of ISEMOA at conferences / events

Similar to the above, this indicator related to the presentation of ISEMOA at regional / national / and international events and conferences. An initial target was set to disseminate at 8 events and, by the end of the project, ISEMOA had been presented at 119 events. As such, this indicator was achieved and greatly exceeded.

## 5.9 Indicator 8: Distribution of project merchandising products

The final indicator relates to the distribution of project merchandising products at key events and meetings across Europe. Throughout the project lifespan, three types of products were produced (teaser postcards, ballpoint pens and USB pen drives).

Whilst no specific targets were set to measure the success of this indicator, a summary of the number of each product distributed at various events and meeting across Europe is presented below.

- **Teaser cards: 7,043**
- **Ballpoint pens: 1,767**
- **USB pen drives: 745**

In addition to the numbers above, all partners have indicated they will continue to distribute these ISEMOA products after the project finishes, and so the final number will be higher. Overall, we can conclude that this indicator has also been achieved.

## 5.10 Chapter 5: Summary

Based on the evidence above, and the additional dissemination performance indicator results presented in the previous chapter, we can conclude that all 8 dissemination measures have been achieved or will be achieved in the near future, and for some the targets set were exceeded.

## 6 EVALUATION OF ISEMOA AUDIT TRAINING SESSIONS

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### 6.1 Chapter 6: Overview

As stated in the project overview (Section 1) a key component of the ISEMOA project was to design and hold a series of ISEMOA auditor training sessions in various countries across Europe. These events would help ensure the long term sustainability of ISEMOA when the project ends and the training of auditors would also allow an estimation of the predicted impacts of the project in terms of fuel savings and CO<sup>2</sup> reductions (see following chapter).

The aim of this evaluation was:

- To collect training participants' views on the initial training programme, concept, materials, conditions and organisation and delivery of the training;
- Based on this feedback, to modify and therefore improve the organisation, content and delivery of future training sessions.

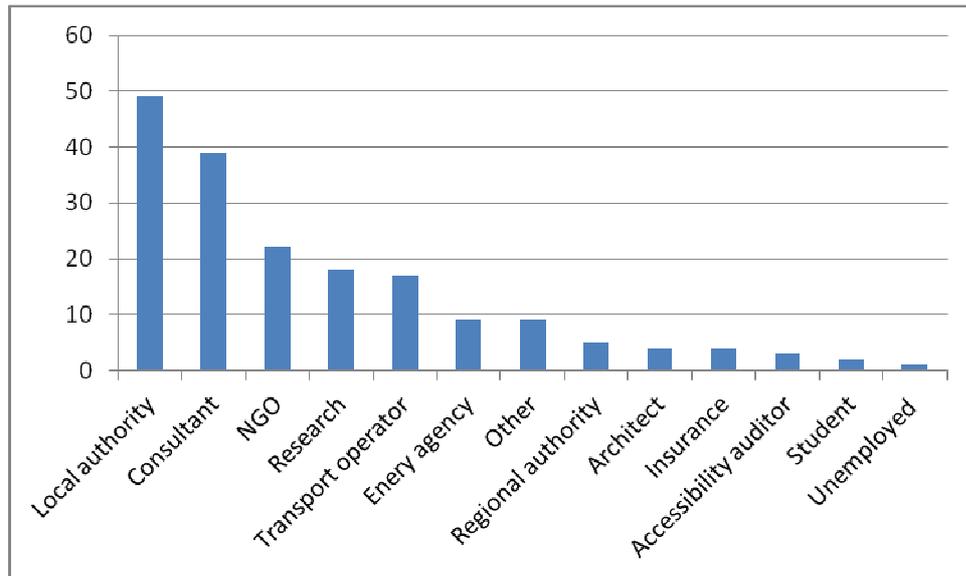
#### *6.1.1 Overview of audit training sessions*

As can be seen in Table 1 (overleaf), in total 19 training workshops were held, involving a total of 182 trainee auditors. This number exceeded the planned targets of 15 training workshops and 65 trained auditors (see earlier), and this increase can be attributed to the unanticipated demand for audit training, especially in Poland and Belgium, where two training workshops were held.

Figure 1 presents an overview of the 'background' of the ISEMOA auditors who were trained. The largest group (49) consisted of local authority representatives working within different departments in various cities/municipalities in the host countries where training sessions were held. The second group includes consultants (39) working mainly in the field of mobility and accessibility, followed by NGOs (22), mostly working with different PRM organisations, representatives of research and educational units (18) and transport operators/authorities (17).

**Table 1: Overview of training workshops and auditors trained**

Location (Project partner)	Number of events	Number of auditors trained
Austria (FGM)	1	9
Germany (TUD)	1	8
Spain (ETT)	1	16
Slovenia (Sinergija)	1	11
Romania (URTP)	1	8
Bulgaria (EAP)	1	15
Poland (ITS)	2	17
Belgium (M21)	2	18
Sweden (Trivector)	1	12
Slovakia (Uni Zilina)	1	5
Ireland (SECAD)	1	12
Bulgaria (BSRAEM)	1	6
Italy (ECUBA)	1	5
UK (TAS)	1	8
Italy (AGEAS)	1	9
Czech Republic (NP)	1	18
France (Mobiped)	1	5
<b>Total</b>	<b>19</b>	<b>182</b>



**Figure 1: Background of ISEMOA auditors**

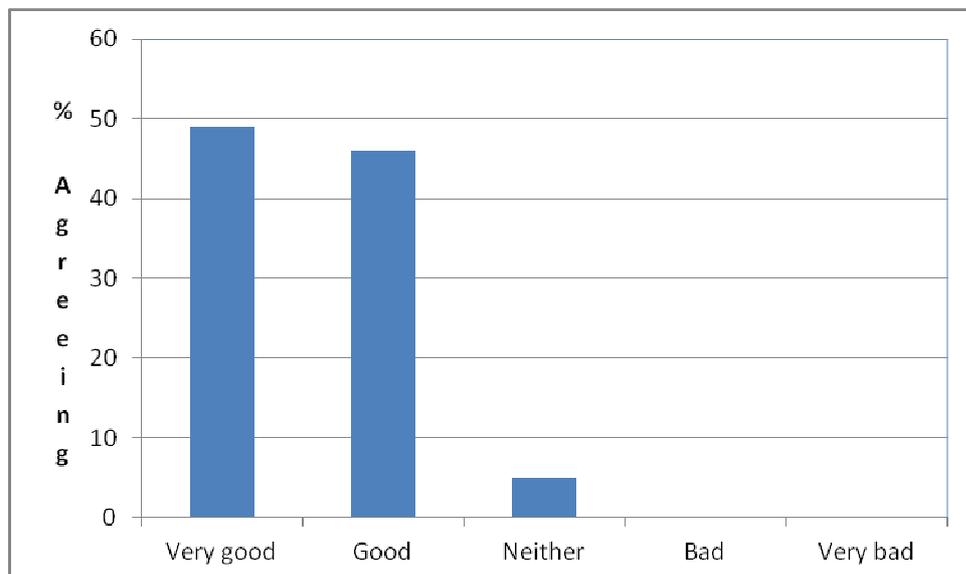
\* Other includes PRM teachers, accessibility centre, accessibility office, accessibility advisory board to the city

## 6.2 Evaluation of training sessions: Participant feedback

In order to evaluate the training sessions, a questionnaire was designed and distributed to trainees to measure their impressions on various aspects of the training sessions (e.g. content) as well as their usefulness to trainees and likely impact on how they conduct their work. A summary of the main findings are presented below.

### 6.2.1 Overall impression of training sessions

As can be seen in Figure 2, nearly half of trainees (49%) rated the training sessions as very good, 46% as good and 5% neither good nor bad.



**Figure 2: Overall impression of training sessions**

### 6.2.2 Trainers knowledge and preparation

Nearly two-thirds of trainees (63%) rated trainers' knowledge and preparation as very good, 35% as good and 2% neither good nor bad.

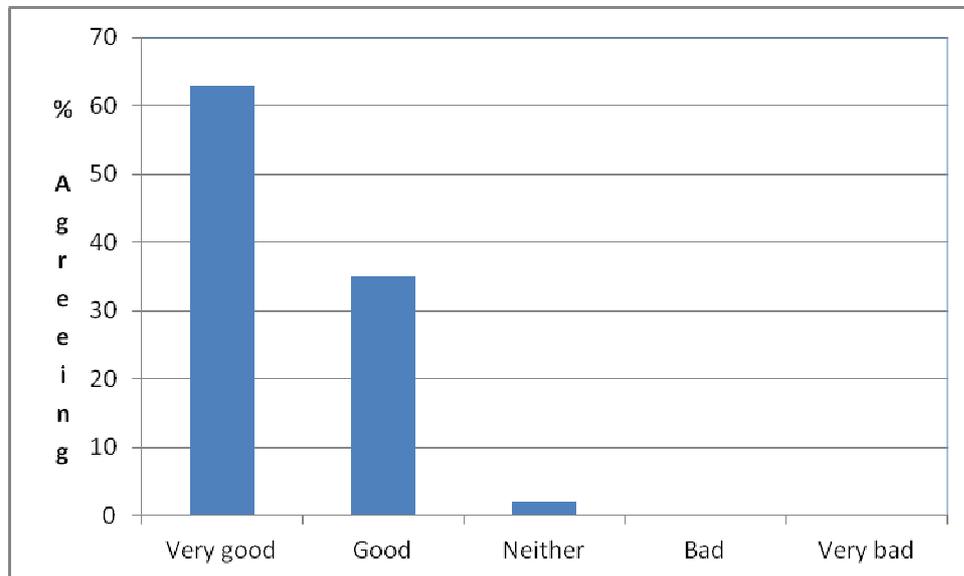


Figure 3: Trainers knowledge and preparation

### 6.2.3 Content of training sessions

41% of trainees rated the content of training sessions as very good, 52% as good and 7% neither good nor bad.

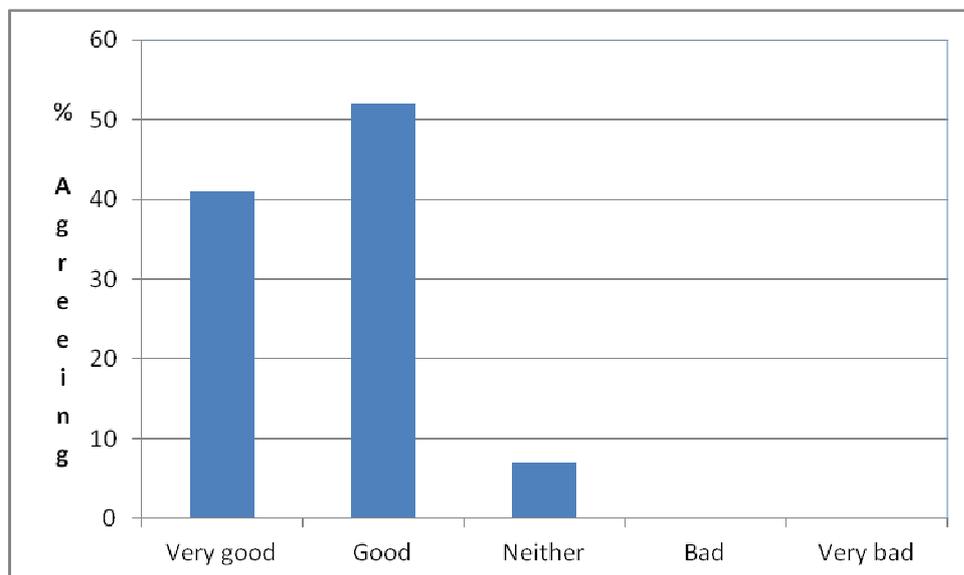


Figure 4: Content of training sessions

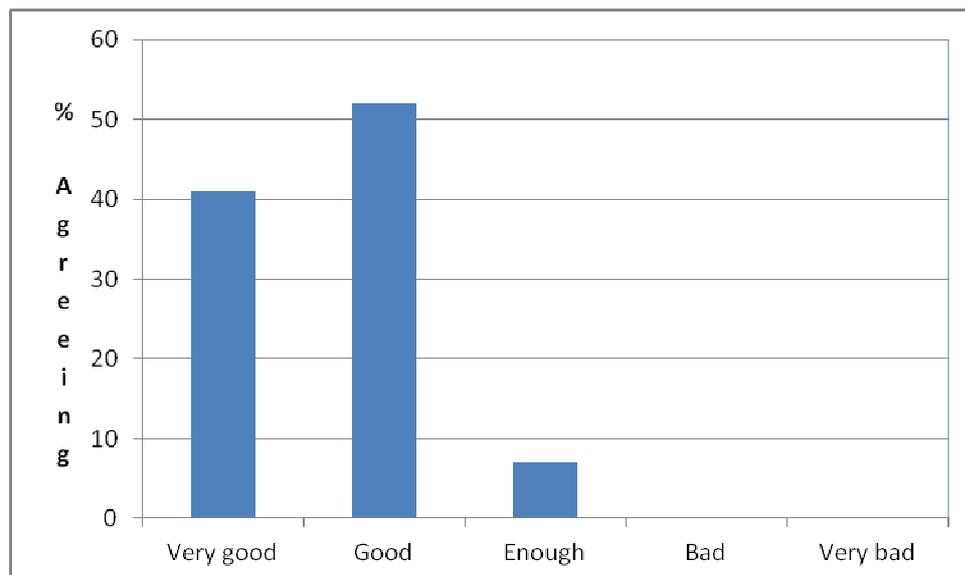
In addition to this broad question, trainees were also asked to rate the 10 topic areas covered in the training sessions as well as the general opening introduction and closing discussion and feedback session. As shown in Table 2, all components were rated relatively high - mean scores 4.31 to 4.47, where 1 = Very bad through to 5 = Very good.

**Table 2: Trainees ratings of individual training session components**

Training component	Mean rating
Introduction to training session	4.31
Topic 1: The importance of accessibility	4.36
Topic 2: The ISEMOA QMS quality cycle and phases in quality improvement; roles and tasks of the ISEMOA auditor	4.37
Topic 3: ISEMOA audit step-by-step	4.41
Topic 4: Initiating implementation of the ISEMOA QMS	4.38
Topic 5: Preparatory meeting with the contact person – use of indicators and interview guide	4.39
Topic 6: Creation of the ISEMOA team	4.42
Topic 7: Introduction meeting – preparation and meeting itself	4.42
Topic 8: Consensus meeting – use of Excel file and meeting itself	4.47
Topic 9: Strategy meeting – preparation and meeting itself	4.39
Topic 10: ISEMOA report, final meeting with the contact person and follow up	4.33
Discussions and feedback; mean = 4,45	4.45

### **6.2.4 Balance between theory and practical content**

41% rated the balance between theory and practical content as very good, 52% as good, and 7% as enough.



**Figure 5: Balance between theory and practice**

### 6.2.5 Documentation

Over half (58%) rated the quality of documentation provided to trainees as very good, 37% as good, 4% as neither good nor bad, and 1% as bad.

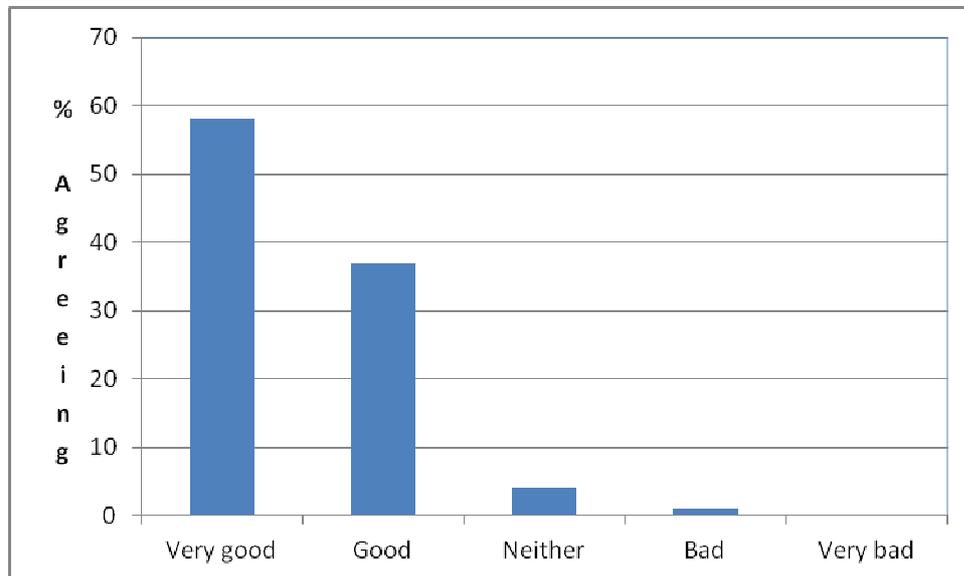


Figure 6: Quality of documentation

### 6.2.6 Exercises

Over a third (35%) rated the quality of exercises as very good, 51% as good, and 14% as neither good nor bad.

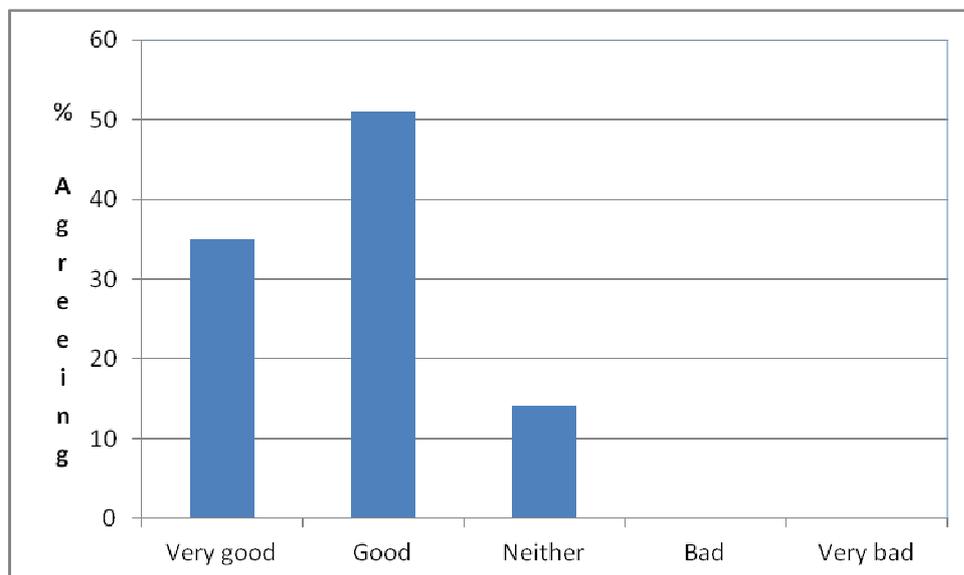
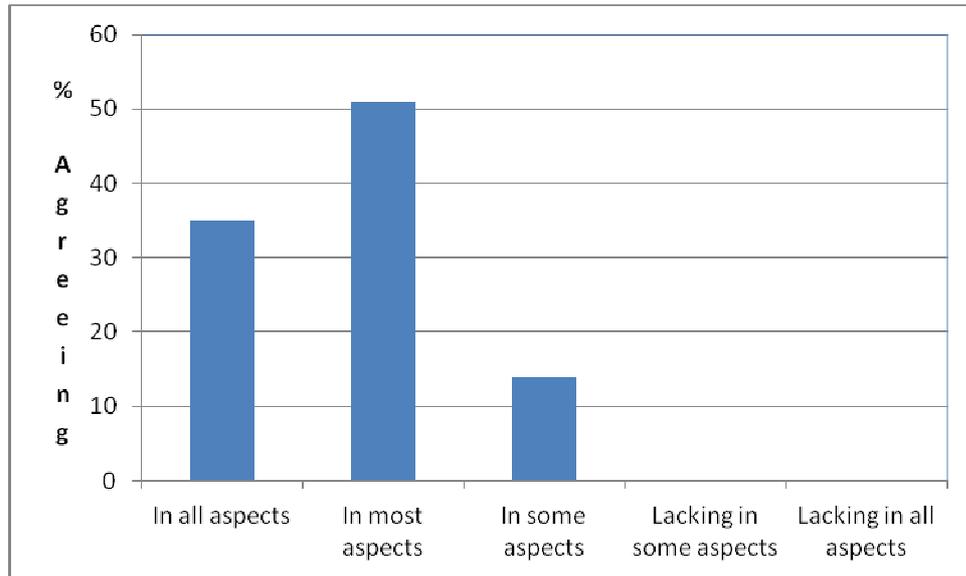


Figure 7: Quality of exercises

### 6.2.7 Did the training match trainees' expectations?

43% of trainees stated that the training matched their expectations in all aspects, 45% in most aspects, and 12 in some aspects. For those participants who indicated that the training matched their expectations in most, or some aspects, the main reason given (as

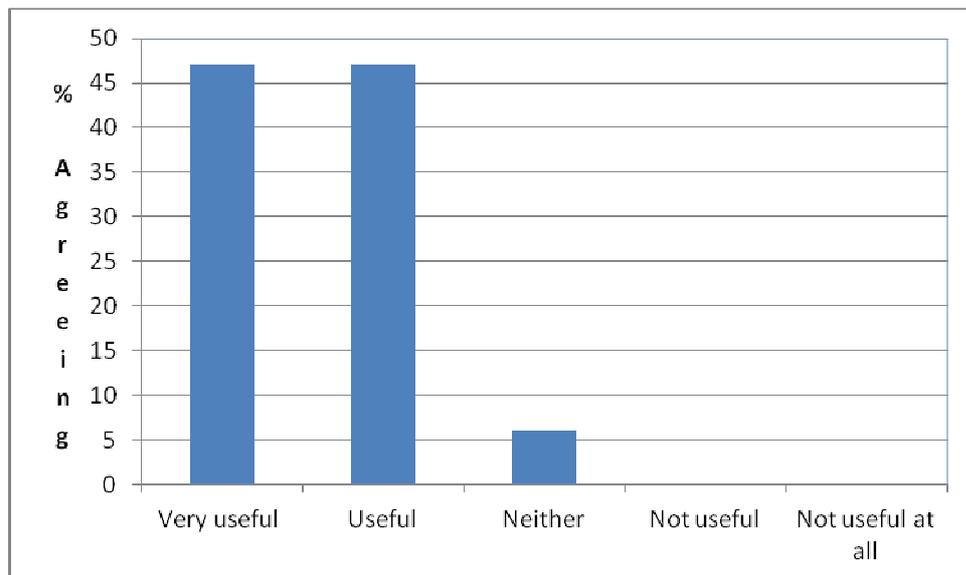
to why their expectations were not fully met) concerned 'not enough practical exercises', 'the training sessions being too short', and 'more information needed on design aspects'.



**Figure 8: Were trainees' expectations matched**

**6.2.8 Usefulness of training sessions**

Nearly half rated the usefulness of training sessions and skills acquired in their future work as very useful (47%) or useful (47%), and 6% as neither useful nor not useful. Additionally, when asked if they planned to use ISEMOA in their future work, all trainees indicated they would.



**Figure 9: Usefulness of training sessions**

### 6.3 Chapter 6: Summary

Overall, the feedback received from attendees was very positive for all aspects measured. More detailed feedback was obtained from trainees on more specific aspects of the training programme which is not reported here. This feedback led to minor revisions to the training programme, including new exercises added, more real life examples based on previous ISEMOA audits and advice on how auditors could 'sell' ISEMOA to prospective cities / municipalities / regions, which are all now included in the final ISEMOA QMS materials.

A further key issue that arose from the evaluation concerned the issue of tailoring the training session to participants' background and knowledge. Based on this feedback, 4 versions of the final training materials were produced to address this issue, namely:

- 1: For participants who have no previous experience in audit realisation or do not work with accessibility on a daily basis and are not familiar with self-education materials;
- 2: For participants who have no previous experience in audit realisation or do not work with accessibility on a daily basis but are familiar with self-education materials;
- 3: For participants who have previous experience in audit realisation and work with accessibility but are not familiar with self-education materials;
- V4: For participants who have previous experience in audit realisation and work with accessibility and are familiar with self-education materials.

As mentioned earlier, the training of ISEMOA auditors allows for long-term fuel savings and CO<sub>2</sub> reductions to be estimated, which is discussed in the following chapter.

## 7 ESTIMATION OF THE IMPACTS OF ISEMOA ON FUEL SAVINGS AND THE REDUCTION OF GREENHOUSE GAS EMISSIONS

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### 7.1 Chapter 7: Overview

This final section of the report presents an overview of the impacts of the ISEMOA Project in terms of the potential fuel savings and CO<sup>2</sup> reductions. Given the nature of the ISEMOA Project and its actions, ISEMOA has acted more as a 'launch pad' for future fuel and CO<sub>2</sub> savings - as many of the improvement measures made following ISEMOA QM-schemes will take time to be made (mostly after the project has ended) and further, even when conditions are improved, individuals often take time to actually change travel behaviours, as they break old travel habits, and new ones are formed. As such, we have focussed more on the potential long-term savings that will occur.

The first sub-section presents an overview of the key assumptions that we have used in order to make relevant calculations, followed by the specific calculations used to estimate the fuel and CO<sup>2</sup> savings resulting from the implementation of ISEMOA QM-schemes and the training of ISEMOA auditors.

### 7.2 Key assumptions used to estimate fuel and CO<sup>2</sup> savings

**Assumption 1:** 40% of the total population in Europe are people with reduced mobility (PRM), and we have applied this rule to calculate the number of PRM in each site location (based on the European Disability Forum figures - <http://www.edf-feph.org/>). Accordingly, Table 3, provides an overview of the estimated number of PRM living in each test site, which shows that around 2,285,548 PRM will live within the ISEMOA test-site locations. We can also assume that those PRM will be highly dependent on private car use, since they are restricted from using alternative transport modes due to existing barriers in public space and public transport use.

**Assumption 2: Changes in travel behaviours of PRM.** As a result of the ISEMOA QM-schemes, the test-sites will introduce a range of measures to improve the accessibility of the whole mobility-chain, which will facilitate PRM to reduce their dependency on private car use, and use more sustainable modes.

**Assumption 4: Modal shift impacts following improvement measures at test sites.** Based upon experiences on mobility management interventions across Europe (e.g. SUSTRANS - <http://www.sustrans.org.uk/>), following interventions people will typically switch between 5-15% of their car trips to alternative transport modes<sup>2</sup>. However, most of

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<sup>22</sup> Note: The percentage change will depend on the type of measures, or packages of measures implemented, although, we have attempted to use a realistic average effect.

the studies from which these conclusions were made related to general population members, and not specific to PRM. Given that PRM are often more car dependent than non-PRM members, it is likely that a lower percentage of these groups would be able to shift modes than the general population and we have used the lowest (5%) level in future calculations.

We also assume that these substituted car trips will be equally divided into 50% to public transport and 50% to walking and (to a lesser extent given we are concerned with PRM) to cycling.

**Table 3: Overview of test site locations, general population and population of PRM**

Test site location	General population	Estimated population of PRM
Region of Styria (Austria)	1,200,000	480,000
Trafikverket Region Syd (Sweden)	2,200,000	880,000
Region of Saechsische Schweiz (Germany)	135,000	54,000
City of Leuven (Belgium)	97,300	38,920
Municipality of Burgas (Bulgaria)	200,271	80,108
Municipality of Plovdiv (Bulgaria)	376,400	150,560
City of Kolin (Czech Republic)	31,000	12,400
City of Holice (Czech Republic)	6,500	2,600
City of San Sebastian (Spain)	186,200	74,480
Municipality of Midleton (Ireland)	12,000	4,800
City of Parma (Italy)	188,700	75,480
City of Nowy Dwór Mazowiecki (Poland)	28,000	11,200
City of Sibiu (Romania)	155,000	62,000
City of Ljubljana (Slovenia)	280,000	112,000
Municipality of Puconci (Slovenia)	6,200	2,480
City of Zilina (Slovakia)	85,300	34,120
City of Sheffield (England)	526,000	210,400
<b>Total</b>	<b>5,713,871</b>	<b>2,285,548</b>

**Assumption 4: Travel behaviours of the general population.** Whilst we were unable to obtain precise travel behaviour data from each of the test-site locations, we can make the following assumptions:

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- Based on data collected by SOCIALDATA in numerous European cities (<http://www.socialdata.co.uk/>), on average each person makes a total of 3.5 trips per day. Approximately, 48% of these trips will be made by private car (the European average), thus each PRM will make around 1.7 trips per day by car;
- On average each of these car trips will be 5km.

**Assumption 5: Associated fuel and CO<sup>2</sup> assumptions.** In order to calculate the fuel and CO<sup>2</sup> reductions arising as a result of the improvement measures, the following calculations are made:

- The average European car fleet consists of 70% gasoline and 30% diesel powered cars;
- On average a car needs 0.059 litres fuel per km, per person, whereas, public transport equates to 0.02 litres of fuel per km, per person;
- 1 litre of gasoline burns into 2.33 kg of CO<sup>2</sup>, and 1 litre of diesel burns into 2.64 kg of CO<sup>2</sup>.

In line with EACI expectations we have converted fuel saving into 'toe/year', using the following calculations:

- 1.177 litres of gasoline = 1kg (Source: <http://www.eppo.go.th/>);
- 1.159 litres diesel = 1 kg (Source: <http://www.eppo.go.th/>);
- 1 kg gasoline = 44000 kJ (default used by Eurostat; Source: <http://www.iea.org/>);
- 1 kg diesel = 42300 kJ (default used by Eurostat; Source: <http://www.iea.org/>);
- 1 tonne of oil equivalent (toe) = 10,000,000 kilocalories = 11630 kilowatt hours = 41868000 kJ (Source: <http://www.iea.org/>).

### 7.3 Fuel savings as a result of the implementation of the ISEMOA QM-schemes

Based on the assumptions made above, the following calculations can be made in order to estimate the direct results of the ISEMOA QM-schemes implemented:

- Taking the 5km average trip distance *times* the average 1.7 car trips per day, per person *times* **2,285,548** (the total number of PRM in the test site areas) this equates to 19,427,158 'car km's' made per day by PRM living in the test site areas;
- If we then take the 'lowest' anticipated 5% modal shift from car to non-car modes this equates to a total of 971,357 car km's that would be saved per day;
- or 354,545,634 car km's per year;

**In terms of fuel savings we can make the following estimations:**

- 50% of the total car km's would be shifted to public transport (so 177,272,817 x 0.039) litres saved, plus 50% of total car km's shifted to walking / cycling (177,272,817 x 0.059) = a total of **17,372,736 litres saved per year** (12,160,915 litres of gasoline and 5,211,821 litres of diesel) - equivalent to **15,401 toe/year**

**In terms of CO<sup>2</sup> savings we can make the following estimations:**

- 354,545,634 km x 0.059 litres fuel/km x (2.33 kg CO<sup>2</sup> x 0.7 + 2.64 kg CO<sup>2</sup> x 0.3) - 177,272,817 km x 0.02 litres fuel/km x 2.64 kg CO<sup>2</sup> (i.e. 9,458,291.88) = **41,324,775 kg CO<sup>2</sup> or 41,325 tonnes CO<sup>2</sup> saved each year.**

## 7.4 CO<sub>2</sub> savings as a result of the training of external ISEMOA-auditors

In addition to the CO<sub>2</sub> savings resulting from the implementation of the ISEMOA QM-schemes, the ISEMOA audit training programme will also (in the long-term) result in further CO<sub>2</sub> reductions.

As stated in the previous chapter, a total of 182 auditors were trained within the project lifespan. These trained auditors will in the future utilise the ISEMOA concept in their consultancy work with local and regional authorities, and thus we can make estimations of this upcoming work in terms of CO<sub>2</sub> reductions.

For the calculation of these impacts, the following assumptions were made:

- From the total of 182 auditors, we conservatively estimate<sup>3</sup> that, at a minimum, about half of this number will actually work with one local/regional authorities in implementing the ISEMOA QM system every year- i.e. 91 ISEMOA QM schemes;
- We also assume that the average number of PRM affected by the implementations of the future ISEMOA QM-schemes is about the same as the average number of PRM affected in the test-site implementations- so the total number of PRM would be roughly 5 times that of in the test site areas = **11,500,000** PRM travel behaviours could be potentially changed;
- We also assume that the framework conditions are the same as in the test site locations (i.e. a mixture of regions, municipalities and cities).

Based on the above, we can then estimate that a total of **207,931** tonnes CO<sub>2</sub> could potentially be saved every year, i.e. 41,325 (total tonnes CO<sub>2</sub> saved in test site areas) / **2,285,548** (population of PRM in test sites) x 11,500,000.

Similarly, based on the scenarios above, we can estimate that a total of **87,412,937** litres of fuel could be saved every year, i.e. 17,372,736 (total fuel savings in test site areas) / 2,285,548 (population of PRM in test sites) x 11,500,000 - equivalent to **77,494 toe/year**.

## 7.5 Calculation of cumulative fuel and CO<sub>2</sub> savings by 2020

As stated earlier, the ISEMOA Project will act more as a launch-pad for future savings, rather than immediate savings within the project lifespan. In line with EACI expectations, we have provided an estimation of the cumulative fuel and CO<sub>2</sub> savings by 2020 (i.e. 7 years after the project finished).

To make these calculations we have used the following assumptions:

- In order to fully remove all barriers to both public spaces and public transport services, it would take a considerable time for municipalities/cities/regions to implement all necessary measures, and for PRMs' travel behaviours to change fully. Whilst there is no precise timeframe available for these changes to occur, we estimate this could take

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<sup>3</sup> This estimation is based on experiences with the BYPAD- cycling audit scheme

up to 10 years<sup>4</sup>. It is, however, to be expected that in some/most areas improvements would be made immediately after the implementation of ISEMOA QM-schemes, and whilst some changes in behavioural change may have occurred within the project lifespan, we have used the end of the project (2013) as the starting point for changes to occur. We also assume that any changes will continually occur on an incremental basis - which we will assume occurs as a constant 10% switch from private car use over the 10 year period.

- On this basis, we can assume that by 2020, conditions in ISEMOA QM-scheme areas will be 70% barrier free, 70% of the anticipated behavioural change would have occurred, and thus 70% of the fuel savings and CO<sub>2</sub> reductions will be realised.

Adding both the savings generated from the ISEMOA QM-scheme test areas and future ISEMOA QM-scheme areas as a direct result of the trained ISEMOA auditors, we can thus estimate the total fuel and CO<sub>2</sub> savings resulting from the ISEMOA Project by 2020. These estimations are shown below in Table 4, alongside the estimated targets set at the beginning of the project.

**Table 4: Estimated total impacts of ISEMOA project by 2020 vs. planned target impacts**

Measure	Planned target	Predicted target
Primary energy savings (toe/year)	54,853	336,357
Reductions GHG emissions (t CO <sub>2</sub> e/year)	147,178	1,280,120

Note: These figures represent the cumulative savings over the period 2013 until 2020 (i.e. 7 years) and the annual figures would thus be divided by 7.

There are however, some important caveats to these figures that must be considered, which are listed in the following sub-section.

## 7.6 Caveats to estimated effects

- For both these fuel and CO<sub>2</sub> savings to occur, we have assumed that the improvement measures made following the ISEMOA QM-schemes would remove **all** barriers to both public spaces and public transport use. If all barriers were not removed, some PRM would still be unable to switch from car use, and the reductions would be less than stated above;
- The assumptions made are based primarily on European averages (e.g. numbers of PRM living in each test-site area, number and lengths of trips made). In reality for some / all test site areas actual conditions may differ from European average figures, i.e. there could be significantly less (or more) PRM in some, or all test-site areas, people may make fewer, or more daily trips, or longer or shorter trips. As such, the actual impacts could differ from those assume

<sup>4</sup> This is only an estimate, as it could take less time (depending on existing conditions at each test site, funds available and willingness to make these changes) - and conversely could in some cases take longer.

## 7.7 Chapter 7: Summary

Based on the calculations we have made, and taking into account the caveats stated, the long-term potential impacts of the ISEMOA Project in terms of fuel savings and CO<sup>2</sup> reductions have greatly exceeded the estimated impacts set at the beginning of the project.

The significantly greater reduction potential that has been realised is primarily due to the nature of the test sites participating in the project (i.e. greater population numbers living in test site areas than originally expected) and a greater number of ISEMOA auditors trained.

## 8 CONCLUSIONS

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### 8.1 Chapter 8: Overview

The broad aim of this report was to measure the success and impacts of the ISEMOA Project on a number of performance indicators set at the start of the project. These indicators could be divided into 4 broad categories, which are discussed below.

#### *8.1.1 Evaluation of the general project activities*

The main aims of this set of indicators were to:

**[1] Ensure ISEMOA working materials were developed taking into account current state-of-the-art knowledge on accessibility planning and the needs of PRM.** Overall, these aims were achieved via the extensive background research conducted by partners, interviews and feedback from stakeholders and Advisory Committee members, and feedback from trainee auditors. This effort led to the production of several key project deliverables and a final version of ISEMOA working materials to enable and help ensure future ISEMOA-schemes across Europe;

**[2] Ensure that these developed materials would be available and used both within and after the project ended.** These aims were achieved via the distribution of ISEMOA materials to key stakeholders, implementation of the ISEMOA-schemes at 18 test locations across Europe, 19 audit training sessions resulting in 182 trained auditors, and widespread dissemination activities (see later). In the longer-term, we have ensured the sustainability of ISEMOA by the purchase of the ISEMOA website domain until 2023, commitment by partners to continue to promote ISEMOA after the project ends, and commitment of trained ISEMOA auditors to promote and use ISEMOA in their future work

**[3] Implement ISEMOA-schemes at various test-site locations with the aim of making real and significant improvements to accessibility conditions for PRM (and all citizens) and thus facilitate modal shift to non-car modes.** This was achieved via the 18 ISEMOA-schemes at 17 test-site locations (1 test-site did not proceed to implement improvements) who have all begun the implementation of various accessibility strategies and improvement measures in each location.

#### *8.1.2 Evaluation of dissemination activities*

The main aim of this set of indicators was to spread knowledge and promote ISEMOA in the broadest possible way across Europe. To measure the success of this aim a number of performance indicators were set at the start of the project, including the creation of the project website to host key project information, deliverables and working materials, and the promotion of ISEMOA to a range of stakeholders across Europe via a range of means. This was achieved by the continual updating of the ISEMOA website with relevant documents and materials in 13 European languages, and direct promotion of ISEMOA to

stakeholders across Europe via a range of methods (distribution of newsletters, project brochures and project merchandise, conference presentations, and newspaper and paper articles).

### **8.1.3 Evaluation of the ISEMOA audit training workshops**

The main aims of the audit training sessions were to develop a successful and usable training concept, and to train and motivate future ISEMOA auditors to perform ISEMOA-schemes across Europe. To evaluate the success of these aims a two main performance measures were used, namely:

**[1] The number of training session held and auditors trained.** The initial target set was to hold 15 training workshops and train 65 auditors. In total 19 training workshops were held and 182 auditors trained, so this measure has been successfully met and exceeded.

**[2] Feedback from trainees on content and usefulness of training sessions.** The second performance measure used related to ensuring that the final version of training materials were as comprehensive, informative and practically useful to trainee auditors. As detailed in Chapter 6, feedback from trainees at the various workshops evaluated the training sessions and materials very positively. Based on feedback received minor revisions were made resulting in final versions of training materials that are of high quality, comprehensive and practical to use. The fact that all trained auditors have indicated they will promote and use ISEMOA in their future work is testimony to this.

### **8.1.4 Overall project impacts**

The final set of indicators relate to the long-term potential of ISEMOA in terms of fuel savings and CO<sup>2</sup> reductions. Based on the planned project activities (ISEMOA-schemes and audit training workshops) an initial estimation of primary energy savings of 54,853 toe/year and reduction of GHG emissions of 147,178 t CO<sup>2</sup>e/year was made. At the end of the project, we estimate that the project has the potential to achieve primary energy savings of 336,357 toe/year and reduction of GHG emissions of 1,280,120 t CO<sup>2</sup>e/year, and so we have greatly exceed the targets set for performance on these measures.

## **8.2 Chapter 8: Summary**

Taking everything into account we can conclude that overall, ISEMOA has been a successful project and that all performance indicators have (or will over time) been achieved, or in some cases exceeded. The fact that many of the targets set for individual indicators were exceeded, could mean our initial targets were set too low, or more positively testify to the efforts of all partners in making the project a success.

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