



REMEDIO - Regenerating mixed-use MED urban communities congested by traffic through innovative low carbon mobility solutions

Transferability plan of REMEDIO

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List of Abbreviations

ARPAV - Regional Agency for Environment Protection in Veneto Region

AUTH - Aristotle University of Thessaloniki - School of Physics

CS - City of Split

GHG - Greenhouse Gas

ICT - Information and Communications Technology

IMT- Integrated Modelling Tool of REMEDIO

IST - Instituto Superior Técnico

MDAT S.A. - Metropolitan Development Agency of Thessaloniki .S.A.

ML - Municipality of Loures

MP - Modular Project

MT - Municipality of Treviso

PP - Project Partner

SUMP(s) - Sustainable Urban Mobility Planning (Plans)

USE - University of Seville

UTC - Urban Transports Community

Introduction

This document summarizes all information regarding the methodological path for the transfer of REMEDIO achievements in concerned territories while widening in space and time (i.e. behind the project closure) the mainstreaming of its main actions.

REMEDIO aimed at fostering the use of low carbon mobility solutions through the testing of an operational path in the governance and management of high-congested roads, a common issue for many middle-sized Mediterranean cities lacking of proper orbital roads or bypasses. The project methodology included the environmental assessment of mobility solutions performance, before and after the implementation or plan of mobility pilot activities (soft actions, small-scale investments), with a customized Integrated Modelling Tool. In addition, the establishment of one form of participatory governance entity directly engaged in the adoption of the low carbon mobility solutions to reduce congestion was promoted.

The REMEDIO operational path to foster low carbon urban mobility is not linked to a specific city. During the course of the project, it was applied in four cities (Loures, Split, Thessaloniki and Treviso), as an example of its replicability and transferability potential to other MED cities. The transferability of this approach and vision to the other MED cities would stimulate the competitiveness of the Mediterranean area and improve the quality of life of citizens.

1. REMEDIO Outputs to be Transferred

In this chapter, a short description is provided of the outputs, tools and models of the REMEDIO having a high potential for transferability to other urban areas.

1.1. Integrated Modelling Tool (IMT)

The Integrated Modelling Tool (IMT)¹ of REMEDIO project is a modelling tool to assess the performance of low carbon urban mobility measures in terms of energy efficiency, noise impact, air pollution, and health and cost effects. The tool is user friendly and can support the local authorities and stakeholders to decide about possible interventions/solutions at street level to reduce traffic congestion considering also their environmental impacts.

IMT is novel since it integrates many modules as following:

- ✓ Traffic transport module based on the traffic model “Simulation of Urban Mobility” (SUMO)²,
- ✓ Traffic related pollutant emissions, carbon footprint and energy consumption modules based on the model “Passenger Car and Heavy Duty Emission Model (Light)” (PHEMLight)³,
- ✓ Traffic related pollutants dispersion module based on the model “Pollutant dispersion in the atmosphere under variable wind conditions” (VADIS)⁴,
- ✓ Traffic related noise module based on the methodology “Common Noise Assessment Methods in Europe” (CNOSSOS-EU)⁵,
- ✓ Health and cost module based on statistical modeling to relate air pollution and meteorology to health events (deaths, hospitalizations) and to estimate health related costs.

The modelling approach includes the next main steps that the user has to follow (Figure 1.1):

1. Insert the input data of the base case run related to the road description, the traffic load and synthesis, the buildings dimensions along the road, the meteorology and air quality,
2. Apply the selected module(s),

¹ Integrated Modelling Tool for low carbon mobility solutions: User’s guide. In REMEDIO website: <https://remedio.interreg-med.eu/>

² SUMO website: http://sumo.dlr.de/wiki/SUMO_User_Documentation

³ PHEMLight User Guide Version 1. Passenger Car and Heavy Duty emission model. Technische Universität Graz. Erzherzog-Johann-Universität, Institut für Verbrennungskraft - Maschinen und Thermodynamik.

⁴ Borrego, C., Tchepel, O., Barros, N., Miranda, A.I., 2000. Impact of road traffic emissions on air quality of the Lisbon region. *Atmospheric Environment* 34, 4683–4690.

⁵ Kephalopoulos, S., Paviotti, M., Anfosso-Lédée, F., 2012. Common Noise Assessment Methods in Europe (CNOSSOS-EU). <https://doi.org/10.2788/31776>.

3. Get the output data (environmental, health and cost) as raw data, graphs and maps for analysis of the results,
4. Build traffic scenarios,
5. Get the traffic scenarios output data (environmental, health and cost) and compare the results with those of base case.

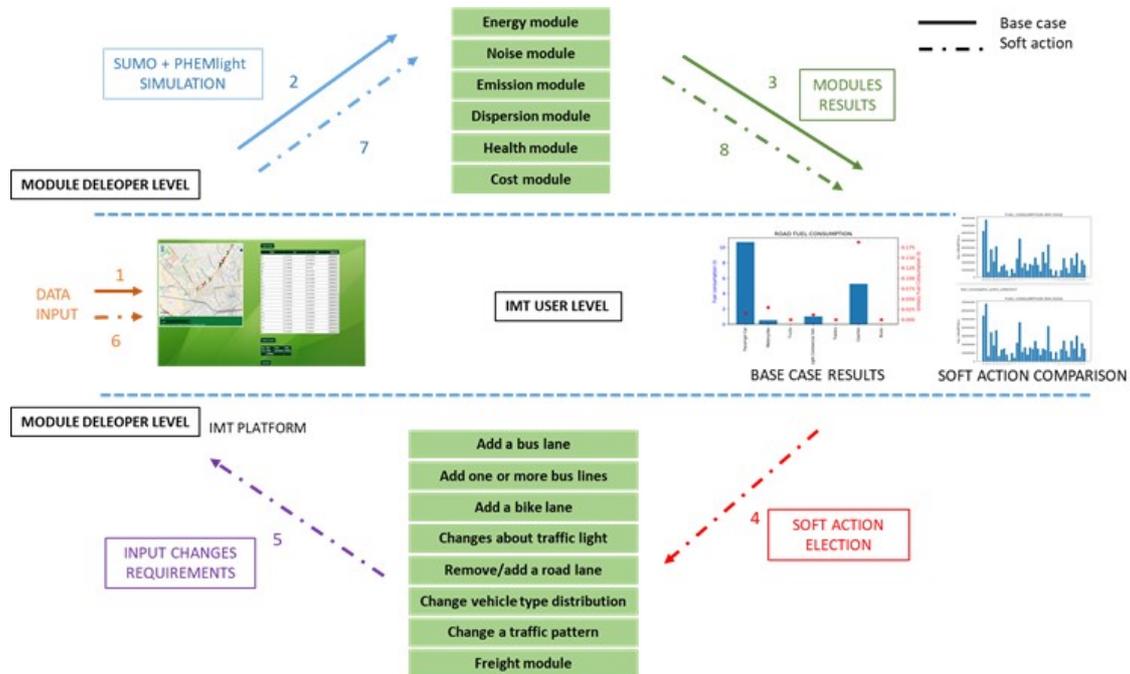


Figure 1.1: IMT conceptual modelling approach

The user option for mobility scenarios building in an easy way is an important feature of IMT. The user can set and simulate his customized mobility scenarios. However, it is also possible to define scenarios and examine their impacts while selecting among eight different mobility interventions/solutions already integrated in the IMT and presented in Figure 1.2.



Figure 1.2: Soft actions integrated in IMT to reduce traffic congestion at street level

IMT example graphs and maps are presented in the following figures showing results from the IMT application for the pilot road axis of Treviso (i.e. West Road) studied within the REMEDIO project.

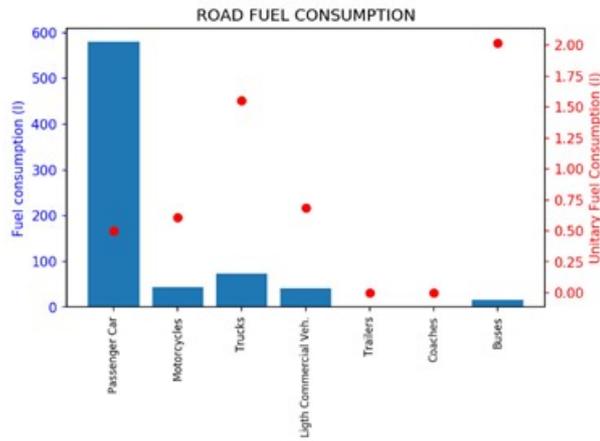


Figure 1.3: Energy consumption per vehicle type

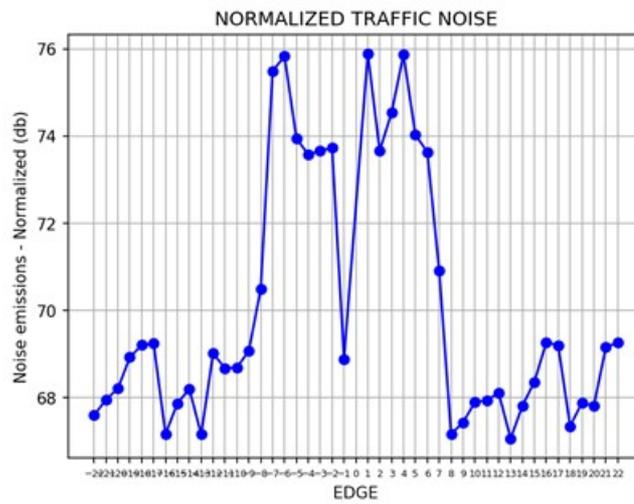


Figure 1.4: Traffic related noise levels along the road axis

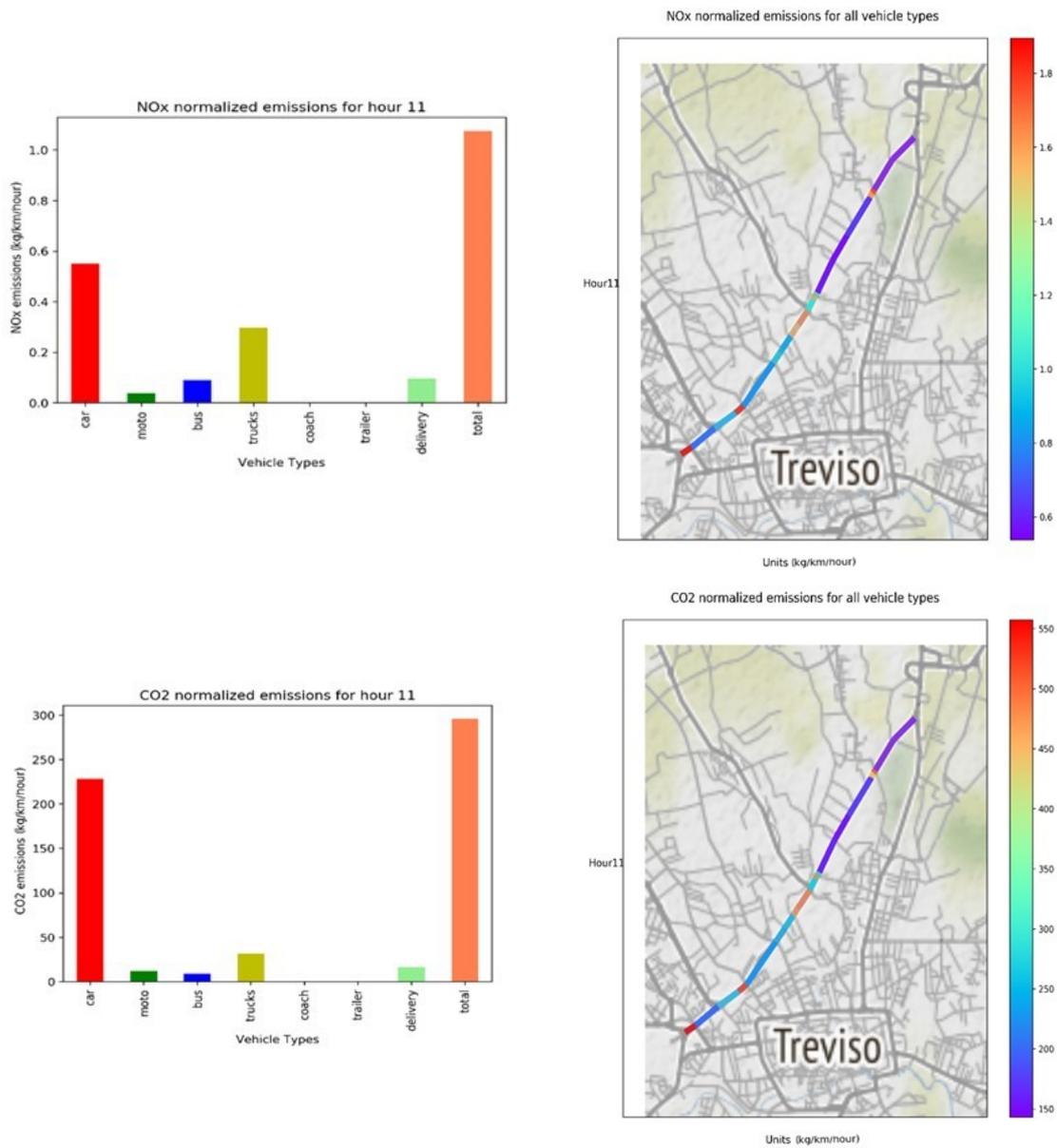


Figure 1.5: Traffic related noise levels along the road axis

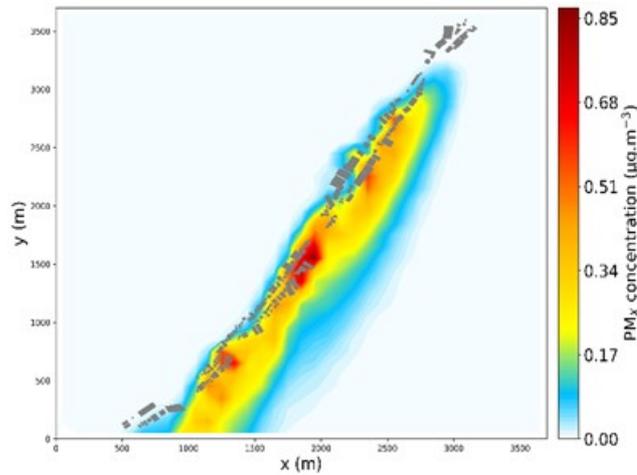


Figure 1.6: Spatial mapping of traffic related pollutant concentrations

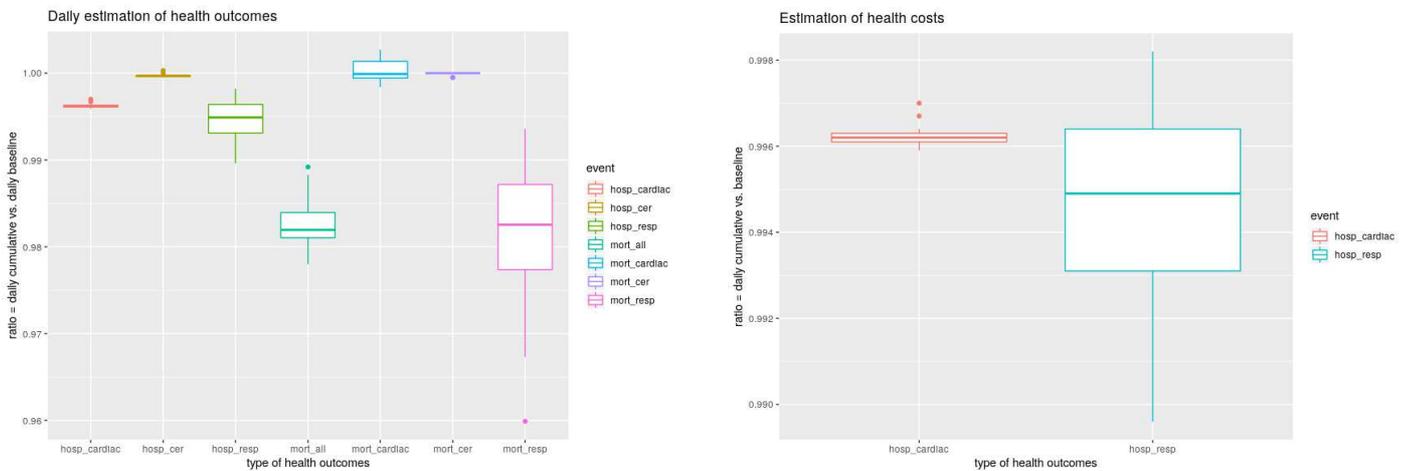


Figure 1.7: Impacts on health events and health related costs of traffic congestion mitigation measures reducing pollutant concentrations

1.2. Participatory governance entity: The Horizontal Condominium

REMEDI project put forward the idea of transforming the urban peripheral roads suffering from traffic jam into Horizontal Condominiums. The Horizontal Condominium is a participatory governance model to foster urban low carbon transport solutions. This means giving identity, visibility and finally voice to these congested roads that are often non-places, spaces lacking the dignity of being a place and sometimes becoming a borderline for social exclusion. However, along these roads there are places where many people spend much of their life.

The Horizontal Condominium is a suggestive image to identify participatory governance in which different subjects, gravitating along the road, become a community that agrees on common goals and begins to demand remedies for its own territory. In other words, the Horizontal Condominium is proposed as a governance entity to be engaged territorial authorities, policy makers, scientific experts, public transport authorities, private and alternative transport

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associations, commercial associations, the public in a common strategy for concrete actions to improve multimodal low-carbon mobility, freight logistics, environmental quality and, ultimately, a better quality of life.

The methodological path towards a Horizontal Condominium entity includes the following steps:

1. Developing a common vision,
2. Involving the strategic actors,
3. Setting the context of the vision,
4. Agreeing on mid-term or long-term actions to achieve the common vision,
5. Building up the local juridical format of the participatory entity,
6. Strengthening of the Horizontal Condominium.

This governance model can be replicated both in a more comprehensive context inside the REMEDIO's urban areas and in other MED/EU cities. The Horizontal Condominium is intended not only as a vehicle to facilitate the participation of stakeholders, but also as a basis for deciding the orientation of further developments based on the concept of social, economic and environmental sustainability.



1.3. ReMod Urban Axis: Participatory Redesign Model and Methodological Guide for accelerating integrated multi-modal and low carbon mobility solution

A model for accelerating integrated urban solutions has been produced in the framework of REMEDIO by MDAT S.A. The “ReMod Urban Axis: Participatory Redesign Model and Methodological Guide for accelerating integrated multi-modal and low carbon mobility solution” is a methodological guide to provide standard tools and mobility solutions for the participatory redesign of urban traffic in Mediterranean cities. The model has been developed so as to provide an easily understood system for the users for participatory governance and transferability.

The methodological guide is a multi-page manual explaining the model and providing a toolkit of solutions (Figure 1.8). The Methodological Guide’s analytical content is as follows:

- Presentation of the model development produced by the synthesis of REMEDIO methodology and input of international Good Practices.
- The Guide manual – The implementation manual of the Model including a toolkit of solutions and a implementation Roadmap in the fields:
 - Urban analysis methods and indicators’ adaptation,

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- Participatory governance for urban mobility solutions,
 - Community building - networking at local level / local,
 - Participatory planning / planning tools in various planning levels,
 - Promotion and engagement,
 - Monitoring and evaluation.
- Index I: International good practices for integrated solutions in redesigning urban axes.
 - Index II: MoUs and Agreements templates to commit actors in the integrated solutions.

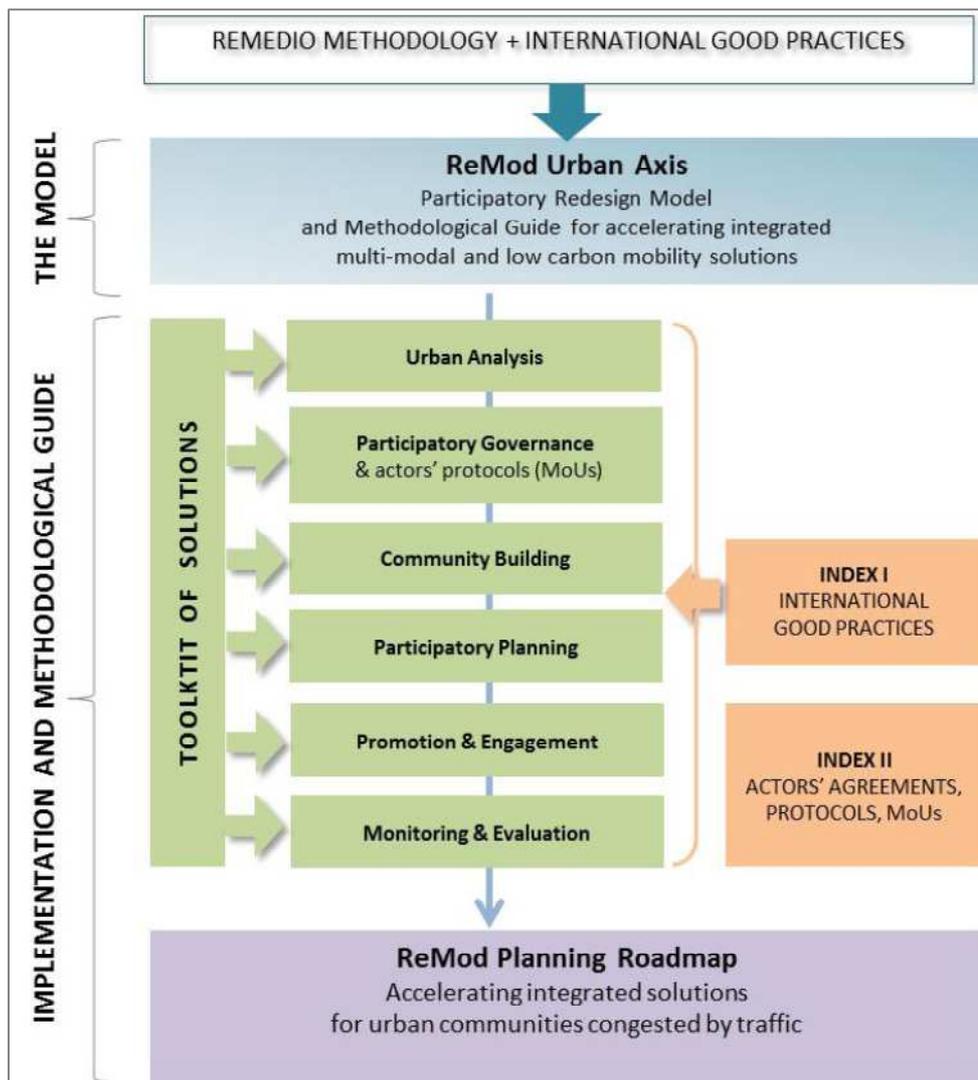


Figure 1.8: The ReMod overall methodology and structure

2. Transferability Activities

This chapter includes information and descriptions about the events in which REMEDIO PPs participated and contributed in their effort to increase the transferability perspectives of the project. The events were organized by the:

- ✓ INTERREG MED Programme,
- ✓ MED Urban Transports Community Horizontal Project “Improving Sustainable Urban Mobility Plans & Measures in the Med” (GO SUMP), bringing together the MPs CAMP-SUMP, LOCATIONS, MOBILITAS, MOTIVATE, REMEDIO, SUMPOR and ENERNETMOB,
- ✓ Other projects/initiatives related to the thematic of REMEDIO.

2.1. GO SUMP “Improving Sustainable Urban Mobility Plans & Measures in the Med”

Date: 4-5 April 2017 | **Place:** Malaga, Spain

Information for the event: Almost 50 people from eight countries attended the kick-off meeting of GO SUMP, a new type of Horizontal European Community Programme for improving plans and measures for sustainable urban mobility in the Mediterranean. The event brought together representatives of six MPs (CAMP-SUMP, LOCATIONS, MOBILITAS, MOTIVATE, REMEDIO, SUMPOR) that it coordinates, which include 61 members from 12 countries.

REMEDIO contribution in the event: REMEDIO team was represented by ARPVA, AUTH, MT, IST and USE. There was a presentation of the main objectives of REMEDIO during the event, while synergies with other thematic networking cities, tools/methodologies and thematic projects (especially MOBILITAS and LOCATIONS) were identified.



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2.2. INTERREG MED “We are MED - Going Beyond Thematic Communities”

Date: 17 May 2017 | **Place:** Alicante, Spain

Information for the event: The INTERREG MED Programme organised a community building event entitled "We are MED - Going beyond thematic communities". The event was the occasion to work together on a common work methodology and last but not least build a strong INTERREG MED community.

REMEDI0 contribution in the event: REMEDI0 representatives (ARPAV and AUTH) participated in the discussions of the event to support the communication and capitalization activities of REMEDI0.



2.3. CAMP-SUMP “Let’s Share the Knowledge on University Mobility”

Date: 28 July 2017 | **Place:** Athens, Greece

Information for the event: In the framework of the CAMP-SUMP project, the National Technical University of Athens organized a knowledge diffusion event, in which the results of the project SWOT and GAP analysis for university mobility were presented. In addition, the participants of the event were divided in 3 working groups: Group 1: University students mobility planning and services, Group 2: ACTION PLAN for a sustainable University Mobility Plan, Group 3: Roadmap and ICT instrument model for Sustainable University Mobility Plans to exchange experiences and ideas.

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REMEDIO contribution in the event: REMEDIO was represented by AUTH in the discussions of Working Group 2. Synergies between REMEDIO and CAMP-SUMP refer to the following subjects:

- Mobility and environmental indicators, as those identified within REMEDIO, can be useful for the evaluation of the low carbon mobility solutions to reduce traffic congestion,
- Integrated modeling tools, as that developed within REMEDIO, can be proposed in Action Plans (e.g. of CAMP-SUMP), given the fact that these tools allow the integrated assessment of various environmental performances (including CO2 emissions estimation representing a key indicator of low carbon mobility and economy),
- CAMP-SUMP questionnaires results, Action Plan and Roadmaps are useful as complementary to the participatory pathway and MoUs of REMEDIO.



The poster features the Interreg Mediterranean logo with the European Union flag and the text 'Project co-financed by the European Regional Development Fund'. Below this is the CAMP-sUmp logo, which includes a green circle with a white 'U' and a white 'M'. The central illustration depicts a cityscape with a large yellow sun, a blue sky with a white arc, and various modes of transport including a bus, a car, a bicycle, and a train. To the right, a green box contains the text 'CAMP-sUmp' and 'CAMPus sustainable University mobility plans in regions of the European shores of the Mediterranean'. Below the illustration, the text reads 'Public event', 'Let's share the knowledge on University Mobility', 'Save the Date!', '28/06/2017', and 'Department of Transportation Planning and Engineering NATIONAL TECHNICAL UNIVERSITY OF ATHENS'. At the bottom, a green banner contains the text 'TOGETHER FOR SUSTAINABLE MOBILITY'.

2.4. REQUA “Final Workshop”

Date: 18-19 September 2017 | **Place:** Thessaloniki, Greece

Information for the event: The Aristotle University of Thessaloniki (Laboratory of Atmospheric Physics), as coordinator of the EU FP7 project “Regional climate-air quality interactions” (REQUA), organised the final workshop of the project. The main objective of the workshop was the dissemination of REQUA project results, the interaction of the scientific community with the policy-makers and business representatives and the identification of synergies with other projects.

REMEDIO contribution in the event: There have been a presentation of REMEDIO during the workshop, with more emphasis on the mobility solutions for Thessaloniki. The GHGs emitted by

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the road transport, especially under congested conditions addressed by REMEDIO, represent a thematic related to the climate change addressed by REQUA. Among the most important conclusions of the workshop was that the joint and coordinated effort of the scientists, the authorities and the business community could result in sustainable mobility solutions to reduce environmental impacts of the transport sector.

	PEOPLE MARIE CURIE ACTIONS INTERNATIONAL RESEARCH STAFF EXCHANGE SCHEME (IRSES)		
REQUA Final Workshop 18 - 19 September 2017 Thessaloniki, Greece Venue: Santa Beach hotel		<u>Organizing Committee:</u>	
<p>The EU project on Regional Climate-Air Quality Interactions (REQUA) aims at strengthening the research partnership through staff exchanges and networking activities between research groups in Europe, the USA and China working on the field of regional climate-air quality interactions and advance the current understanding of interactions between different components of the Earth system. Within this context, REQUA is organizing a workshop for the dissemination of project results and the interaction with policy-makers and business representatives.</p>		Dimitrios Melas (Chair) Aristotle University of Thessaloniki, Greece	
		Tijian Wang Nanjing University, China	
		Allison Steiner University of Michigan, USA	
		Apostolos Voulgarakis Imperial College of Science, Technology and Medicine, UK	
		Prodromos Zanis Aristotle University of Thessaloniki, Greece	
		Ekaterina Garane Aristotle University of Thessaloniki, Greece	

2.5. GO SUMP “Capacity building – Synergies in Community SO 2.3 among Modular Projects”

Date: 25-26 September 2017 | **Place:** Torres Vedras, Portugal

Information for the event: GO SUMP organized the event as responsible for identifying and promoting synergies and collaboration among MPs of the MED Urban Transports Community. The event was attended by the GO SUMP PPs, representatives of MPs and facilitators (thematic experts). The participants had the opportunity to take part in different Thematic Group Working Sessions.

REMEDIO contribution in the event: REMEDIO by the participation of ARPAV, AUTH, IST and ML; was represented in four Thematic Groups addressing the following topics: “Specific sub-areas of trip generation/attraction”, “Low carbon transport modes/services”, “ICT” and “Participatory

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planning and processes”. The REMEDIO IMT, mobility and environmental Indicators, small-scale investments and Horizontal Condominium governance approach were discussed in the Thematic Groups. The methodology used during the event was interesting and based on an approach for building, sharing and developing the GO SUMP community.



2.6. CIVITAS FORUM 2017 “Small Communities, Big Ideas”

Date: 27-29 September 2017 | **Place:** Torres Vedras, Portugal

Information for the event: The CIVITAS FORUM annual events bring together the CIVITAS community from across Europe: hundreds of mobility experts, actors and stakeholders, all of whom are devoted to the development of sustainable urban mobility in their cities. The CIVITAS FORUM 2017 offered state-of-the-art presentations, interactive workshops and interesting sessions.

REMEDIO contribution in the event: There has been a presentation of REMEDIO (Marina Almeida Siva, IST as Communication Leader) during the Forum and contribution to GO SUMP to present the Urban Transports Community of the MED area. Synergies between REMEDIO and projects, networks, institutions and private companies were identified as following:

- Urban Transport Roadmaps (European Platform on SUMP) with socio economic indicators for REMEDIO IMT,
- SIMPLA project about harmonizing SEAPs & SUMP) with MT participating as end user,
- FLOW project with a tool for assessment of effectiveness of removing road traffic in favor of pedestrian and cycling mobility and with health and economic indicators for REMEDIO IMT,

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- CIVITAS Urban Mobility Tool and Inventory with many tools to be studied as example for REMEDIO IMT, acting also as platform to which the REMEDIO IMT can be added,
- CIVITAS Destinations representatives complementary with REMEDIO in terms of less polluting transport solutions in island cities to cope with tourism trends,
- ECCENTRIC (CIVITAS) with emission-free freight in urban centres possibly related to REMEDIO Horizontal Condominium,
- CIPTEC project, proposing innovative public transport solutions, having overlapping area (i.e. Thessaloniki) and overlapping PP (Aristotle University of Thessaloniki) with REMEDIO,
- U-TURN project with innovation solutions for urban food logistic possibly related to REMEDIO Horizontal Condominium,
- REFORM project with contribution to the preparation of the local municipalities SUMP under a low-carbon economy having an overlapping area (i.e. Region of Central Macedonia – Thessaloniki) with REMEDIO,
- CISMOB project complementary with REMEDIO in terms of ICT to allow reduction of carbon footprint, air pollution and noise,
- CIVINET Slovenia - Croatia - Southeast European Network on Sustainable Urban Mobility (CIVITAS) having an overlapping area (i.e. Split) with REMEDIO,
- DAFNI (Network of Sustainable Greek Islands) addressing the issue of sustainable urban mobility in medium sized towns in MED islands to which the REMEDIO tool can be applied,
- Limassol Tourism Board addressing the issue of sustainable urban mobility in medium sized towns in MED islands to which the REMEDIO tool can be applied,
- PTV Group providing an example of tool with common modules with respect to that of REMEDIO IMT.



2.7. INNOVASUMP “2nd Local Stakeholders Group Meeting”

Date: 9 March 2018 | **Place:** Thessaloniki, Greece

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Information for the event: The Municipality of Kordelio-Evosmos (Greece) invited the local stakeholders to the “2nd Local Stakeholders Group Meeting” in order to inform them about the thematic Workshops of the INTERREG Europe project “Innovations in Sustainable Urban Mobility Plans for Low Carbon Urban Transport” (InnovaSUMP) and to exchange ideas and experience.

REMEDIO contribution in the event: REMEDIO has been presented by MDAT S.A. Emphasis was given on the strengthening of the capacity of cities to use low carbon transport systems and include them in their mobility plans by testing mobility solutions through an assessment tool and participatory governance schemes as those of REMEDIO. Common networking, exchange of knowledge and participation in relevant working groups has been agreed between REMEDIO and InnovaSUMP.



2.8. GO SUMP “MED Urban Transports Community – Community Building event”

Date: 17 April 2018 | **Place:** Rome, Italy

Information for the event: GO SUMP organized the event as responsible for identifying and promoting synergies and collaboration among MPs of the MED Urban Transports Community. The event was attended by the GO SUMP PPs, representatives of MPs and facilitators (thematic experts). The participants had the opportunity to take part in different Thematic Group Working Sessions.

REMEDIO contribution in the event: REMEDIO was represented by ARPAV, AUTH and IST in the event and more specifically:

- REMEDIO small-scale investments were presented in the “Low carbon transport modes/services” Thematic Group,
- REMEDIO Participatory Planning & Processes were presented in the “Participatory planning and processes” Thematic Group,

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- REMEDIO IMT was presented in the Thematic Groups “Low carbon transport modes/services” and “ICT or Electric Mobility”,
- REMEDIO participated with contribution to the discussions in the “Specific Sub-areas of Trip Generation / Attraction” Thematic Group.

Potential synergies between MPs of the MED Urban Transports Community were identified as following:

- *Geographical Synergies:*
 - CAMP-SUMP and REMEDIO have activities for the city of Split (Croatia). The REMEDIO modelling tool is put into practice in the city and it could be used and adapted to university context (CAMP-SUMP).
 - The CAMP-SUMP results on the methodologies for the elaboration of action plans and road maps for the design of University SUMP could be transferred to other city contexts of REMEDIO.
- *Thematic synergies:*
 - REMEDIO IMT could be transferred to the whole community, especially to MPs which are dealing with specific sub-areas of complex mobility contexts,
 - REMEDIO IMT could be developed in the future so as to collect input mobility data in real-time taken also from the MOTIVATE application,
 - Biking solutions addressed in MPs: REMEDIO, SUMPORT, CAMP-SUMP and ENERNETMOB,
 - REMEDIO data from questionnaires used to define scenarios could be incorporated in the ENERNETMOB diagnosis analysis phase.
- *Methodological Synergies:*
 - REMEDIO Horizontal Condominium – participatory approach (including schools communities) could be adapted and introduced within the activities of SUMPORT, CAMP-SUMP and ENERNETMOB.



2.9. INTERREG MED “MADE in MED - Crafting the Future Mediterranean”

Date: 18-19 April 2018 | **Place:** Rome, Italy

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Information for the event: The INTERREG MED Programme organised in Rome the “MADE in MED” event to present the first results of 90 projects through a conference and an exhibition.

REMEDI0 contribution in the event: REMEDI0 representatives (ARPAV, AUTH, IST) participated in the discussions of the event and presented REMEDI0 in the MED Urban Transports Community exhibition stand. The event was an opportunity to convey the idea and values of co-working, knowledge sharing and innovation and to look towards the future of cooperation in the Mediterranean.



2.10. “5th European Conference on Sustainable Urban Mobility Plans”

Date: 14-15 May 2018 | **Place:** Nicosia, Cyprus

Information for the event: The European Commission's “European Conference on Sustainable Urban Mobility Plans (SUMP)” is the Europe's leading annual event for all those involved in putting the SUMP concept into practice. It serves as a forum for policy makers and academics across Europe to network, debate key issues and exchange ideas on sustainable urban mobility planning. The theme of the 5th edition of the Conference was multimodality, with a focus on the integration of transport modes and combined mobility solutions for passengers and freight in cities and regions.

REMEDI0 contribution in the event: The Conference was an opportunity to increase visibility of REMEDI0 in the community interested in SUMP concept. REMEDI0 was presented by ARPAV, AUTH and MDAT S.A. -in the conference session “GO SUMP! Innovative planning strategies from the INTERREG MED Sustainable Urban Transports Community”. In the beginning, the thematic focus of REMEDI0 was very briefly explained to the plenary. Following, REMEDI0 was introduced to the participants in three rounds of interactive ‘speed networking’ sessions during information about REMEDI0 were provided to participants and opportunities for learning and cooperation were explored.

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2.11. INTERREG SUDOE and INTERREG MED “Advocacy Bootcamp”

Date: 28-29 June 2018 | **Place:** Faro, Portugal

Information for the event: The INTERREG SUDOE and INTERREG MED Programmes, with the support of the Algarve Regional Coordination and Development Commission, jointly organized a boot camp training on promotion and lobbying, to support projects in their marketing and capitalization actions. During the event, the participants benefited from practical training in strategy, political influence, storytelling and digital communication. PPs and professionals testimonials from different perspectives complemented the trainers.

REMEDIO contribution in the event: REMEDIO was represented by AUTH and IST in the event with participation in all training workshops. During the event, possible synergies of REMEDIO with organizations and other projects was investigated as following:

- European Cyclists' Federation considering the bike sharing solutions addressed within REMEDIO,
- Catalan Institute for Energy considering the energy savings estimated within REMEDIO,
- NANOSEN-AQM project focusing in the improvement of urban air quality in alignment with the objectives of REMEDIO,
- Pieriki Anaptixiaki SA – OLA (Greece) active in projects relevant to REMEDIO.

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2.12. REMEDIO “Cooperation Day on Standardized Repeatable Models of Urban Road Axis redesigning and the Promotion of their Implementation in Sustainable Urban Mobility Plans”

Date: 17 July 2018 | **Place:** Thessaloniki, Greece

Information for the event: The event was organized by MDAT S.A. in the framework of REMEDIO aiming to promote the connection between the SUMP of Thessaloniki and REMEDIO participatory approach, in addition to the potential transfer of REMEDIO participatory and technical methodology to other urban road axis of Thessaloniki.

REMEDIO contribution in the event: The participatory and technical methodological path that has been followed within REMEDIO for the redesigning proposal of the Thessaloniki pilot action (i.e. Eastern Horizontal Axis of Thessaloniki) was presented during the event. The path can be used as a model to be transferred to other urban traffic road axes and considered in synergy with the SUMP of the City of Thessaloniki.

2.13. “14th International Conference on Meteorology, Climatology and Atmospheric Physics”

Date: 15-17 October 2018 | **Place:** Alexandroupolis, Greece

Information for the event: The 14th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP 2018) brings together the scientific community and

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stakeholders/end-users interested, among others, on methodologies and modeling tools relevant with the environment.

REMEDI contribution in the event: The presentation of REMEDIO in the conference was a very good opportunity to increase the visibility and transferability of the modeling tool of REMEDIO. REMEDIO representatives (AUTH) explained to the conference participants the main objectives and the tools of the project, as well as the first results of the environmental assessment for the pilot area of Thessaloniki. There were two accepted REMEDIO presentations in the conference:

- López, E., Palomo, F., Liora, N., Kontos, S., Almedia-Silva, M., Baptista, P., Liguori, F., Lorenzet, K., Fernandez, R., Ortiz, C., Poupkou, A., Meleti, Ch., Melas, D., Patti, S., Faria, M.V., Ferreira, J. and Lanera C., 2018. "Integrated modelling tool for the analysis of traffic-congested roads in urban centers". In: Proceedings of the 14th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP 2018), 15-17 October 2018, Alexandroupolis, Greece, pp. 852-857,
- Poupkou, A., Zounza, S., Chrysostomou, K., Kelessis, A., Yiannakou, A., Liora, N., Kontos, S., Rizos, K., Dimopoulos, S., Giannaros, C., Tzoumaka, P., Aifadopoulou, G., Kalogirou, C., Meleti, Ch. and Melas, D., 2018. "Environmental assessment of low carbon mobility solutions with the use of an Integrated Modeling Tool". 14th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP 2018), 15-17 October 2018, Alexandroupolis, Greece (poster presentation).



2.14. GO SUMP “Better Ways to Move // Better Way to Live: Sustainable Mobility in Mediterranean Coastal Areas to Work, Study and Visit”

Date: 25 October 2018 | **Place:** Venice, Italy

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Information for the event: In the framework of the UNIMED General Assembly, GO SUMP project a workshop were the partial results of the MED Urban Transports Community were discussed with representatives of INTERREG MED projects, policy makers and scholars from Mediterranean Universities members of UNIMED, to draft an action plan for future steps to be taken. There has been a round table led by GO SUMP with the participation of other project as LOCATIONS, SUMPOR, CAMP-SUMP, SIROCCO, UNIMED Transports & Logistics Subnetwork. The main focus of the discussions was about the challenges both in technical and policy terms.

REMEDI0 contribution in the event: REMEDI0 was presented by ARPAV in the event from:

- *A technical point of view:*
 - Small scale interventions for urban low carbon measures in Treviso (enlargement of the urban bike sharing network), Loures (renewal of an urban street for a better livability), Split (mixed electrical and traditional bike sharing service) and Thessaloniki (planning of an upgrade of the main penetration urban axis with a second-generation bus lane) and maintenance challenge (e.g. definition of a suitable business model, investigation of specific resources and funds),
 - IMT for low carbon mobility solutions assessment and related challenges of its development (robustness, transferrable in other cities, license terms, open data issues).
- *A policy point of view:*
 - Governance model of the “Horizontal Condominium” based on a strong participative approach that mobilizes the public and a wide range of stakeholders to take part in the process to address problems and possibly find concrete solutions and related challenges (divergences and conflicts, few resources compared to the expectations, requests that rise from the involved groups and stakeholders),
 - Approval of new SUMP as a specific project objective and the challenge of time needed to achieve such a plan being clearly beyond the duration of a project.



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2.15. CIVINET CY- EL and MOU S.A. "Redesign of Urban Roads under the Municipalities' Jurisdiction"

Date: 30 October 2018 | **Place:** Athens, Greece

Information for the event: The 1st workshop was co-organized by the Management Organization Unit of Development Programmes (under the Greek Ministry of Economy & Development) and the CIVINET CY- EL. Workshop participants were national and local Greek authorities as well as other organizations.

REMEDI0 contribution in the event: The REMEDI0 project and the low carbon mobility solutions for Thessaloniki were presented by MDAT S.A. in the framework of the event. The title of the presentation was "Redesigning the road together: a participatory planning process of REMEDI0 project case solution". The presentation supported the capitalization perspective of REMEDI0 project and the transferability of the participatory methodology. Representatives of 29 Greek Municipalities, the Greek Coordinator of the European Mobility Week, the Ministry of Environment and Energy, the National Technical University of Athens were present in the presentation of REMEDI0 project. The mobility proposal and the followed participatory process were further discussed after the presentation since there has been a lot of interest by the workshop participants.

2.16. INTERREG MED "Empowering territories for a Sustainable Mediterranean"

Date: 6 November 2018 | **Place:** Rimini, Italy

Information for the event: During the opening day of the Italian Expo of ECOMONDO fair, representatives from six INTERREG MED thematic communities presented their achievements and shared their challenges with private companies, local public authorities and international organizations, and invited them to discuss on three strategic axes for the future of the Mediterranean region: "Circular Bioeconomy opportunities and challenges in the MED area", "Innovation for sustainability in the MED Area" and "Governance, citizens awareness and participation for a Sustainable Mediterranean".

REMEDI0 contribution in the event: REMEDI0 was presented by ARPAV in the third panel on "Governance, citizens awareness and participation for a Sustainable Mediterranean " with emphasis on the experience on the participative approach of the Horizontal Condominium for high congested roads.

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2.17. GO SUMP and SMART MR “Mobility Challenges in Urban and Metropolitan Areas” - SMART CITIES EXPO WORLD CONGRESS “Smart Solutions for Low Carbon Cities”

Date: 12-13 November 2018 | **Place:** Barcelona, Spain

Information for the event: The event was organized by GO SUMP and the INTERREG Europe SMART MR Project to host the MPs from the MED Urban Transports Community together with the MPs from the MED Efficient Buildings and MED Renewable Energy Communities. The event was the occasion to present MPs to experts and strategic institutions with the objective to consolidate their technical approach and their contribution to regulatory framework. The event included an international conference, thematic workshops, a special session at the Barcelona Smart Cities Expo World Congress and technical visits.

REMEDIO contribution in the event: REMEDIO was represented in the event by ARPAV, AUTH and ML with presentations and contribution to discussions in all parts of the event:

- 1) Presentation of the REMEDIO participatory processes during the international conference.

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2) REMEDIO participation in the Capitalization Thematic Workshops “From practices to policies”: “Nodes & high-density areas”, “Participatory Processes” and “LC Transport Modes-Services”.



3) REMEDIO presentation entitled “Smart Solutions on Congested Areas & Cruise Destinations” in the special session “Smart Solutions for Low Carbon Cities!” in the framework of the Smart Cities Expo World Congress. The presentation was focusing on the REMEDIO mobility solutions, procedures and experience for Thessaloniki and was presented by MDAT S.A.

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2.18. COST Action CA16202 “inDust: WG2 Meeting”

Date: 3 April 2019 | **Place:** Belgrade, Serbia

Information for the event: The COST Action CA16202 “International Network to Encourage the Use of Monitoring and Forecasting Dust Products” (inDust) organized a meeting relevant with the Modeling Activities (WG2) of the Action. One of the this main objectives of inDust is the establishment of a network involving research institutions, service providers, and end users of information on airborne dust and air quality.

REMEDIo contribution in the event: The REMEDIo IMT was presented by AUTH to the modelling experts of inDust in terms of programming, input data requirements and output information produced. The presentation provided an opportunity for visibility of REMEDIo technical developments and for enlargement of the MED Urban transport Community to include the inDust technical institutions coming from 29 countries of which 11 are Mediterranean (Portugal, Spain, France, Italy, Slovenia, Greece, Cyprus, Malta, Bosnia Herzegovina, Turkey, and Israel). This enlargement is necessary for capitalization and for the identification of synergies and complementarities that could lead also to future collaborations. This is very important in the Mediterranean area where the air quality and climate is highly determined by a variety of emission sources including both anthropogenic activities (eg road transport) and natural ones.

2.19. GO SUMP “TechCamp: ICT tools for Sustainable Urban Mobility”

Date: 27 April 2019 | **Place:** Nicosia, Cyprus

Information for the event: The MED Urban Transports Community organized a one-day TechCamp as an occasion for presenting and testing the ICT tools developed in the framework of the MPs activities. Representatives of MPs from MED Urban Transports Community, PPs of the

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GO SUMP and associated partners, facilitators, and other relevant actors participated in the TechCamp.

REMEDI contribution in the event: The IMT of REMEDI was presented by AUTH, ARPAV and Universit of Padova (collaborating with ARPAV for Health & Cost modules) in the event with a hand-on exercise performed by the TechCamp participants. The aim of the hands-on exercise was to allow the participants to:

1. Get acquainted with the IMT user interface and data input process,
2. Understand better the application of the IMT modules,
3. Understand better the IMT output results,
4. Consider the IMT capitalization perspectives.

During the event, the Health and Cost module of REMEDI IMT, for assessing the urban mobility solutions in terms of relative differences in health outcomes (and their cost), was presented. The MED Urban Transports Community expressed a big interest for IMT considering it as a user friendly and at the same time powerful and robust modeling tool to assist the end-users (e.g. authorities) in the assessment of the environmental impacts of sustainable urban mobility actions.



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2.20. "Challenges for the Islands in the era of the Circular Economy" + "6th Sustainable Mobility and Intelligent Transport Conference"

Date: 28-29 April 2019 | **Place:** Nicosia, Cyprus

Information for the event: The CirCIE2019 + SMile 2019 conference was organized by the Ministry of Transport, Communications and Works of Cyprus under the auspices of DGENV and DGMOVE. Its aim is to promote and support insularity, and boost circular economy in the islands, highlighting cross-border cooperation, enhancing bilateral & multilateral relations, sharing good practices, strengthening economic & business opportunities and promoting green and blue growth, sustainable mobility and intelligent transport systems, sustainable development and implementing circular economy practices in the islands.

REMEDIOs' contribution in the event: There have been a presentation by AUTH entitled "A tool for environmental assessment of traffic mitigation actions for high congested roads in Mediterranean urban areas as in REMEDIO project" to describe to the conference participants the REMEDIO IMT modules (i.e. energy, noise, pollutant emissions, carbon footprint, air dispersion, health/cost, freight streamlining), in addition to the IMT scientific background and application concept. Results of the IMT application for the pilot area of Thessaloniki were presented as an assessment of the impacts on the environment of the REMEDIO pilot mobility solutions for Thessaloniki. At the conference REMEDIO was represented by AUTH and ARPAV.

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2.21. GO SUMP "High Level Training Courses on Sustainable Mobility" - "Financing Sustainable Mobility" and "Tourism & Mobility Nexus"

Date: 11-13 June 2019 | **Place:** Barcelona, Spain

Information for the event: In the frame of the Community Building and Capitalization activities of GO SUMP project, a series of High Level Training Courses on Sustainable Mobility targeting Mediterranean Cities were developed, aiming to consolidate the capacity building and promote transferability of urban practices among the INTERREG-MED UTC and Mediterranean stakeholders. The topics addressed were focused on two key domains deployed into two parallel training courses: "Financing Sustainable Mobility" and "Mobility and Tourism Nexus".

REMEDIOS' contribution in the event: REMEDIO was represented by CS and MDAT S.A. In the framework of the training course "Mobility and Tourism Nexus", there has been a presentation entitled "EU project REMEDIO – Traffic Congestion Minimization and Tourism Integration in the City of Split" by CS to describe the implementation of the pilot activity in the city of Split through the introduction of the public bike sharing system, through its use by the citizens and tourists of city of Split and through the implementation of the project REMEDIO and its impact on reducing the traffic congestion.

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2.22. "Sustainable Mobility in Thessaloniki"

Date: April 2019 | **Place:** Thessaloniki, Greece

Information for the event: A two days event was organized by CIVINET CY-EL, ELTIS and MDAT S.A.

REMEDIOS' contribution in the event: During the first day of the event, a specific section for the REMEDIO project was organized to allow exchange of experience and models among the participants. The Low Carbon mobility Solution of Thessaloniki studied within REMEDIO and the REMOD Axis Guide developed within the project were presented by MDAT S.A. Local and regional authorities were reached and other stakeholders as well.

2.23. EBN TechCamp "Smart Cities Innovating Sustainability"

Date: 27-28 June 2019 | **Place:** Toulon, France

Information for the event: The European BIC Network (EBN) organized the the TechCamp "Smart Cities Innovating Sustainability" in partnership with EU|BIC Toulon var Technologies. The TechCamp is the main EBN technical event where incubation and acceleration practitioners from EU|BICs all over Europe and beyond come together for mutual learning, experience exchange and enhancement of technical know-how. The TechCamp focused on smart cities innovating in a more sustainable way, in line with the European Commission priorities of making a greener

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Europe and the United Nations Sustainable Development Goals. Interactive workshops during the TechCamp showcased and trained participants on emerging best practices addressing:

- multi-stakeholder and multi-governance approaches for developing and implementing sustainable energy climate action plans;
- scaling up of companies in the tourism sector through the integration of cutting-edge technologies and innovation, while adhering to the UN Sustainable Development Goals;
- co-designing locally tailored ecological solutions for value added, socially inclusive regeneration in cities; and,
- how to reinforce the networking among transborder incubators.

The TechCamp was organized jointly with the Murex festival to show how creativity can be harnessed to promote sustainable innovation.

REMEDIOS' contribution in the event: REMEDIO was represented by AUTH in the event with a presentation during the “Smart cities innovating sustainable mobility” workshop organized by GOSUMP in the framework of the TechCamp. The Integrated Modeling Tool and the estimated impacts on traffic and environment of the low carbon mobility solutions in the REMEDIO pilot areas were presented to the workshop participants. During the event, the transferability perspectives of IMT were discussed with companies representatives interested on technological developments for sustainable urban mobility in smart cities. The possible application of the Modeling Tool using air quality and traffic data from smart sensor was discussed as a future development of the tool.



2.24. GO SUMP “Sharing Challenges & Developing Solutions to Design the Future of the MED Urban Transports Community”

Date: 17-18 September 2019 | **Place:** Malaga, Spain

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Information for the event: GO SUMP project organized the final event of the MED UTC. The event was organized in the wider framework of the European Mobility Week campaign and was an opportunity to showcase achievements of the UTC projects in an interactive way, but also to discuss key policy recommendations and explore future commitments and activities. On the first day, study visits offered a unique opportunity to experience the many urban transport innovations in Malaga through multimodal journeys guided by local experts. On the second day, there was a mix of keynote presentations, a signing ceremony for the UTC Memorandum, interactive group discussions and an outdoor exhibition, inviting each UTC project to demonstrate its results.

REMEDIOS' contribution in the event: REMEDIO was represented in the event by ARPAV, AUTH and MDAT S.A. who contributed to the discussions about REMEDIO achievements, proposed policy recommendations and the UTC continuing steps. The representative of ARPAV signed on behalf of the REMEDIO partners the GO SUMP Memorandum of Understanding supporting the promotion and replication of the many tools and approaches that have been developed by the MED UTC.



2.25. LOCATIONS “Sustainable mobility in MED tourist destinations”

Date: 19 September 2019 | **Place:** Malaga, Spain

Information for the event: The INTERREG MED project LOCATIONS final event provided the opportunity to discuss and understand better the hindrances and the opportunities for the sustainable tourism mobility in the Mediterranean area and the lessons learnt and results achieved by the LOCATIONS project for the promotion of a sustainable mobility linked to cruise tourism while exploring different voices and perspectives (tourist associations, cruise lines, local institutions) through a participatory and constructive path.

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REMEDIOS' contribution in the event: REMEDIO was represented in the event by AUTH contributing to the transfer of REMEDIO results while considering the complementarities between REMEDIO and LOCATIONS projects objectives, in addition to the common geographical area of both projects, i.e. Thessaloniki, acting as pilot city within REMEDIO and as a replicating city within LOCATIONS project.



2.26. First scientific conference of PANACEA project

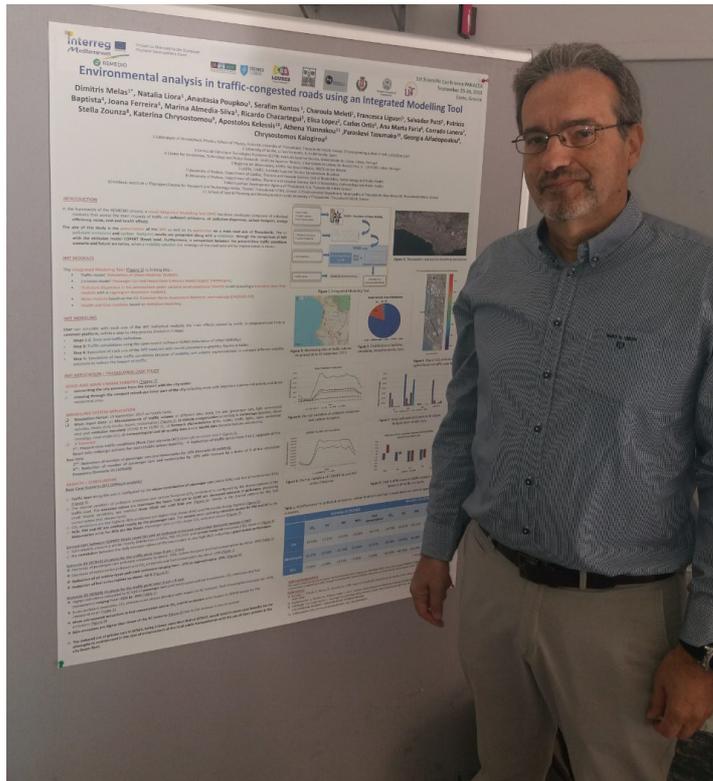
Date: 23-24 September 2019 | **Place:** Heraklion, Greece

Information for the event: The project PANACEA addresses the need for monitoring of atmospheric composition, climate change and related natural hazards in South Europe (with more emphasis on Eastern Mediterranean) for providing tailored services to crucial economy sectors that are affected by air pollution and climate change, such as public health, agriculture/food security, tourism, shipping and energy/renewables. The project PANACEA is cofounded by EU and Greek funds.

REMEDIOS' contribution in the event: REMEDIO was represented in the event by AUTH presenting the poster entitled "Environmental analysis in traffic-congested roads using an Integrated Modelling Tool" coauthored by Dimitris Melas, Natalia Liora, Anastasia Poupkou, Serafim Kontos, Charoula Meleti, Francesca Liguori, Salvador Patti, Patricia Baptista, Joana Ferreira, Marina Almedia-Silva, Ricardo Chacartegui, Elisa López, Carlos Ortiz, Ana Marta Faria, Corrado Lanera, Stella Zounza, Katerina Chrysostomou, Apostolos Kelessis, Athena Yiannakou, Paraskevi Tzoumaka, Georgia Aifadopoulou and Chrysostomos Kalogirou. The poster was focusing on the modeling developments of REMEDIO project and on modeling results to show the

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environmental impacts of mobility scenarios to reduce congestion in the pilot road axis of Thessaloniki as studied within REMEDIO project.



2.27. INTERREG MED “MED for YOU: Unfolding a strong narrative for policy change”

Date: 24 October 2019 | **Place:** Athens, Greece

Information for the event: The event was promoted by the INTERREG MED Programme in order to capitalise all INTERREG MED projects and their results along with the best strategies to promote policy changes.

REMEDIOS’ contribution in the event: REMEDIO was present by ARPAV and AUTH. During the event, there has been a REMEDIO presentation entitled "REMEDIO - Horizontal Condominiums as living lab for renewal of high congested roads". The main objective of the presentation was to describe the:

- Governance pillar of the project following the Horizontal Condominium approach to give identity, visibility and voice to urban communities congested by traffic and
- Soft pillar of the project including the development of an Integrated Modeling Tool for environmental assessment of urban mobility solutions for congested roads.

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2.28. STEPPING “Retrofitting the Mediterranean public building stock through Energy Performance Contracting”

Date: 25 October 2019 | **Place:** Athens, Greece

Information for the event: The final conference of the INTERREG-MED project “Supporting The EPC Public Procurement IN Going-beyond” (STEPPING) was implemented in two sessions. The first part was dedicated to the Energy Efficiency in the Multi-Annual Financial Framework (state of play and priorities beyond 2020) while the second part to the STEPPING key outcomes. In the conference, the discussion raised out the proposals on how to make Energy Performance Contracting (EPC) work for the MED area, taking into consideration the MED-specific context (the climatological conditions, the building typology, the economy status and market conditions, the governance structures). Discussion revolved around barriers but also enabled conditions that can increase the use of EPC such as: the need for tailored financing instruments effectively combining European Structural and Investment Funds with EPC, the recognition of the role and support for EPC facilitators, the simplified processes and standardization, the targeted capacity-building to municipality staff.

REMEDIOS’ contribution in the event: REMEDIO was represented in the event by AUTH contributing to discussions about the necessity of joint efforts to improve energy efficiency in the MED urban areas considering all aspects of activities in urban scale being complementary, as the sector of mobility addressed within REMEDIO and that of public buildings addressed by STEPPING project.

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3. Lessons Learned for Best Practice Use of REMEDIO Outputs

In the context of a project capitalization and transferability, the documented Lessons Learned is a practice serving as a valuable tool to provide information about the experience that has been gained during the project implementation, which can increase the effectiveness of future projects focusing on relevant thematic. The LL procedure, described by Rowe et al. (2006)⁶ in Figure 3.1, is based on what all PPs and key stakeholders consider right and wrong aspect during the evolution of the project.

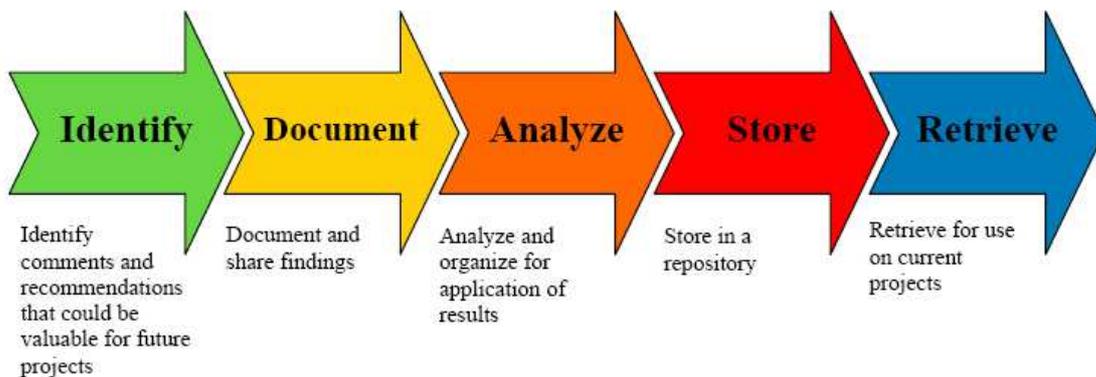


Figure 3.9: Lessons Learned Process

Following is the description of the Lessons Learnt form the implementation of REMEDIO structured considering main pillars of the project implementation.

3.1. Soft Actions on Low Carbon Mobility Solutions

➤ **Subject (or Topic or Situation): Procedures and Preparatory Works Necessary for the Implementation of the Public Bike Sharing System in the City of Split**

Positive Aspects:

- Implementation of the first-ever Public Bike Sharing System in the city of Split.
- Great and positive reactions from the citizens of Split.

Negative Aspects:

- Time consuming procedures and field restrictions regarding the obtain of necessary field permissions for the public bike terminals implementation (especially regarding the procedure necessary to obtain the electro-energetic power connection from the National Energy Service Provider, which is a sort of monopoly on the Energy Market in Croatia and has complicated with time consuming procedures and terms of use the electro-energetic power connection).

⁶ Rowe, S. F. & Sikes, S. (2006). Lessons learned: taking it to the next level. Paper presented at PMI® Global Congress 2006—North America, Seattle, WA. Newtown Square, PA: Project Management Institute.

Further considerations, challenges and recommendations for improvement:

- Involvement of more expensive solar terminals (city of Split has plenty of sunny days) instead of the electro-energetic ones in future planning for expansion of the existing public bike system depending also on budget availability.
- Necessity to apply the so far lessons learnt from the experience regarding the implementation of the Public Bike Sharing System.

➤ **Subject (or Topic or Situation): TV Bike Sharing as Sustainable Value Creation in the Municipality of Treviso**

Positive Aspects:

The Bike Sharing System has many functional, environmental and social benefits:

- For the city, offers flexible mobility, reduce congestion and act as a “first/last-mile” connection to strengthen the public transport, encouraging the reduction of fuel use and emissions, improving health and raise the environmental awareness.
- The key benefits that users perceive of the system are the avoidance of maintenance costs, storage costs, affordability and not having to worry about theft and vandalism.
- A recent study has found that the 12 major Bike Sharing Systems in Europe provide health benefits - from an increase in physical activity - which greatly outweigh the risks of increased exposure to air pollution and road traffic fatalities. If 100% of bicycle sharing trips in these cities replaced car trips, an average of 73 deaths could be avoided per year⁷.

Negative Aspects:

- There is no significant evidence that Bike Sharing Systems replace the use of motorized vehicles.
- To keep the system running smoothly, the bicycles must be redistributed between stations to meet peak demand. This is a complex logistical process, carried out primarily using a fleet of petrol-powered trucks and, in some cases, the bicycles must be maintained and repaired on a daily basis. The system employs workers, with roles ranging from management and administration, maintenance and redistribution.
- The Bike Sharing System service cannot offer the same door-to-door flexibility and assurance of availability as owning a private bicycle. The lack of possibilities to take children on the bicycles is also perceived by many people as a barrier to using the service.

Further considerations, challenges and recommendations for improvement:

- Great importance of the redistribution of bicycles within the city to maintain a consistent service and meet local demand. This is particularly true in hilly towns where bicycles are used more frequently for downhill and must be redistributed uphill. Since the positive environmental impact deriving from the use of bicycles can be canceled by the emissions of the redistribution vehicles, these should be fed with biofuels or renewable energies.

⁷ Otero, I., Nieuwenhuijsen, M.J., Rojas-Rued, D., 2018. Health impacts of bike sharing systems in Europe. *Environment International*, 115, 387-394.

- Bike Sharing System must have a wide communication strategy utilizing a variety of channels, such as advertisements, websites, newsletters, social media, apps and/or customer service centers.
- Bike Sharing System must be integrated within the city's public transport system, either physically at bus stations providing functions such as intermodal routing and/or enabling access to all modes of public transport via the same access card.

3.2. Integrated Modelling Tool

➤ **Subject (or Topic or Situation): Development and Application of IMT**

Positive Aspects:

- Focus on high-congested roads, a common challenge of many middle sized Mediterranean urban areas.
- Integration in a unique tool of a multidisciplinary approach and metric for assessing environmental effects of traffic over congested roads.
- Possibility to analyze the current situation, as well as, the effects of potential soft-actions to mitigate the road-congestion problems (scenario approach).
- Strong cooperation among PPs of different backgrounds in order to jointly develop the IMT.
- Use of an open platform that gives the possibility to continue building the tool also after the end of the project.
- User interface that gives the possibility for IMT application by a non-expert end user using a step-by-step procedure.

Negative Aspects:

- The integration of the various modules because of different terminology, domains of application, inputs, run time and calculation recourses needed by each module.
- Data necessary to run the tool that can be sometime difficult to be found and collected (for example health data and sanitary databases are often restricted for privacy reasons).
- The tool should be robust and at the same time enough generic so to be transferred and applied in other cities.
- The time needed to collect local data that could be long in some cases.
- Expertise is needed for its application.

Further considerations, challenges and recommendations for improvement:

- Software license terms and open data issues have to be considered in order the IMT to be available for future transferring actions and any further development.
- Long-term maintenance of the tool requires resources and responsibilities to be agreed and appointed.
- Possible application of IMT in real-time.
- Integration with other similar ICT tools addressed to the Urban Transports Community that have been developed or used in previous projects in which the REMEDIO PPs have

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participated. This approach requires further adaptations so as the tools to be addressed to non-experts.

- Preparation of training material to be distributed to target groups (e.g. local authorities).

3.3. Horizontal Condominium

➤ Subject (or Topic or Situation): Reaching a General Consent among Stakeholders with Conflicted Interests

Positive Aspects:

- In most cases, the majority of stakeholders attending regularly the participatory events and did not drop out of the participatory process.

Negative Aspects:

- During the participatory events, only "the loud voices" were heard the most.
- Some stakeholders more eager to express their opinion rather than be engaged in a dialogue.

Further considerations, challenges and recommendations for improvement:

- Use of participatory techniques that ensure the equal participation of all target groups, regardless status, age, experience, etc. Under this view:
 - ✓ appropriate facilitation methods are selected carefully and all the moderators have a detailed plan of their group activity,
 - ✓ the facilitators make sure to register all the opinions that have been expressed and minutes are circulated among the participants in order to add any missing point or make corrections.
- While carrying out the participatory events, make sure to:
 - ✓ have group sessions where participants are more likely to be active,
 - ✓ create an atmosphere where all participants feel comfortable to express themselves. The facilitator should encourage the active participation of everyone,
 - ✓ wrap up the session findings in order to ensure that the information has been properly captured.
- Ongoing participatory processes pay off in terms of getting even the inexorable stakeholders to collaborate.
- It is very important the institutional PP coordinating the participatory process to have a good understanding of the local context and the stakeholders' positions for planning and executing successfully the participatory procedure. The good understanding comes with time and with constant interaction with the target groups.
- The participatory process has to be flexible in order to be able to adapt to the ongoing developments.
- Appropriate techniques have to be deployed in order to have a fair participatory process without guiding the decisions towards a pre-defined result.

➤ Subject (or Topic or Situation): Key-Stakeholders Absent from the Participatory Procedure

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Positive Aspects:

- The absence of some stakeholders did not discourage the other ones to participate and did not discredit the whole process.

Negative Aspects:

- Certain opinions were not represented.
- Difficulties in having a complete overview of whether the absence of interest for some key-stakeholders would create problems at the later stages of mobility solution implementation.
- Due to the lack of interest for collaboration from some key-stakeholders, the effort within REMEDIO was not combined with that of other ongoing projects relevant with sustainable mobility.

Further considerations, challenges and recommendations for improvement:

- Extra effort has to be made to attract the missing stakeholders in the project events.
- Having an open and transparent communication and participation strategy can still lead to good results, even when some stakeholders are missing.

➤ Subject (or Topic or Situation): Interest of Local Authorities for Engagement**Positive Aspects:**

- None of the local authorities (e.g. municipalities) was negative or not interested to follow the project developments and attend the events.

Negative Aspects:

- Gaps due to the discontinuous participation of local authorities' representatives in the project meetings and events.
- Difficulties when different local authorities' representatives were appointed to follow the project activities without having the proper overview of the past activities.
- Unclear impression about the level of interest for engagement (e.g. signature of MoU).

Further considerations, challenges and recommendations for improvement:

- Preparation of a short presentation providing an overview of the project and informing about its current status (useful for proper information especially of new coming representatives).
- Necessity for bilateral communication for bringing local authorities back on board in case of discontinuities.
- A balanced communication approach is required to facilitate local authorities' engagement without putting extra heavy burden of commitments. Make sure to keep them informed without pushing them to attend every single activity/event.
- Necessity for tailored meetings highlighting the specific benefits from involvement in the project or from project replication activities.

➤ Subject (or Topic or Situation): Challenges and Recommendations for Transferring the Horizontal Condominium Approach to Other Cities

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- For the local public authority that decides to follow and promote the approach, there might emerge critical situations with divergences and conflicts moreover when the resources are few with respect to the expectations and the requests that rise from the groups of people and stakeholders involved.
- The entity of the “Horizontal Condominium” has to be focused and defined accordingly to the local legal and juridical framework, so it is quite difficult to define a single “European or “Mediterranean recipe” that should have the potentiality to be then transferred and translated to other urban areas.
- The entity of the “Horizontal Condominium” requires someone to take charge of its maintenance when the European funds are not yet available (e.g. after the end of a project). Ownership has been identified as the key for a successful urban requalification and revitalization of the urban peripheral roads and involving the local communities into the design and implementation of the solutions has been chosen as a guarantee for their maintenance behind the end of a project timeframe (usually being short in time).
- The Ownership, the social and membership identity of the communities of the “Horizontal Condominium” needs time to be built and to grow.

4. Policy Recommendations

The policy recommendations of REMEDIO, reflecting the challenges in the implementation of the participatory governance approaches and the technical tools developed within the project, along with the low carbon mobility solutions studied, are presented in Table 4.1.

The policy recommendations were structured to account for:

a) Different types of interventions:

- ✓ Strategy or plan development,
- ✓ Financial policies/ investments,
- ✓ Regulations, incentives or taxes,
- ✓ Innovation support,
- ✓ Communication or guidance,
- ✓ Governance,
- ✓ Public procurement,
- ✓ Data collection & sharing,

b) Different governance levels of intervention:

- ✓ EU and Interreg MED level,
- ✓ National level,
- ✓ Regional level,
- ✓ Local level.

The policy recommendations were delivered also to INTERREG MED Horizontal UTC project GO SUMP to be included in a document with relevant contributions from all INTERREG MED UTC projects.

Table 4.1 REMEDIO project Policy Recommendations

		Type of intervention							
		Strategy or plan development	Financial policies/ investments	Regulations, incentives or taxes	Innovation support	Communication or guidance	Governance	Public procurement	Data collection & sharing
Level of intervention	EU and Interreg MED level	<p>Inclusion of a more human rights-based approach as a mean of guaranteeing clean air for all and reducing factors that exacerbate climate change.</p> <p>Implement strategies to foster environmental justice and equality against socioeconomic disparities in respect to air pollution exposure.</p>	<p>More European funding is needed to support research on the environmental impacts of traffic. For example, in the "real-world" traffic conditions, traffic environmental impacts are higher than those estimated with computational models (e.g. higher pollutant emissions and carbon footprint resulting to higher pollutant concentrations). Further funded research is necessary to quantify the "real-world" environmental impacts and find appropriate solutions.</p>	<p>a) Regulating soft modes of transportation to ensure safety: The REMEDIO questionnaires revealed a public feeling/opinion for lack of safety, preventing the wide use of soft mobility means of transportation. The definition of a clear legal framework, concerning the space, travel limitations (e.g. speed), rights and obligations of soft mobility users, would facilitate soft mobility by even more people. Up to now, regulations exist mostly for urban cycling but not for the small electric vehicles or scooters used for transportation.</p> <p>b) Investing resources in public transportation (e.g. smart bus lanes, use of clean bus vehicles, improved intermodality between the public means of transportation) in most important MED cities and metropolises.</p>	<p>Integrative Modelling systems for environmental assessment: Technical assistance to public authorities for planning and implementation of sustainable urban mobility to reduce congestion should include the obligatory use of integrated modelling tools to support scenarios building and decision making considering also the multidisciplinary effects of urban mobility. EU recommendations may include references to existing relevant tools and guidelines for their best use (similar EU guidelines exist for air quality modeling).</p>	<p>Updated guidelines at EU level on how to engage citizens and local stakeholders in the sustainable urban mobility planning process (e.g. how to reach a general consent among stakeholders with conflicted interests, how to achieve a lasting key-stakeholders collaboration in all participatory processes, how to increase the interest of authorities for engagement).</p> <p>Fostering educational programs to bring awareness about environmental risks and carbon footprint.</p>	<p>Support participatory planning at all the levels and in all the fields: Participatory planning should become an integral part of the planning in all fields and at all territorial levels. This includes coordination among administrative levels, sectors, as well as non-governmental organizations and citizens. The European Commission should include participation in its decision-making processes and at the same time inclusion of relevant stakeholders must be required in new regulations from all the fields.</p> <p>Planning air pollution intervention taking into consideration equity principle.</p>		<p>Standards for open data collection: e.g. EU databases to collect urban transportation open data having a common description, format and legal framework to allow monitoring of the improvements of urban mobility and development of smart mobility solutions (similar databases exist for pollutant emissions and air quality concentrations).</p> <p>More in-depth cross-city studies in the topic of air pollution and climate change with the potential to highlight best practices both locally and globally.</p>
	National level	<p>Policies for integrating Urban Freight Transport into urban mobility management systems.</p> <p>The public health sector needs a stronger activism in the transport policy decision-making to incorporate health issues into the national agenda</p>	<p>Sustainable processing, reuse, recycling and recovery schemes.</p>	<p>Reinforcing alternative transportation: Obligation to implement a dedicated soft mobility (e.g. bike) space/lane in each street renovation project.</p> <p>Founding programmes for: Clean Freight vehicles, Clean Public Transport; intermodality from long to short distance (e.g. rail, boat, bike)</p>		<p>Eco-labels for freight transport</p>	<p>Strengthening policies on urban planning: Streets are live elements of a city and a common framework should exist to allow mixed use activities for transportation, commerce, education and social activities balancing environmental effects (e.g. the example of the superblocks in Barcelona).</p>	<p>Public procurement for freight, e-freight, interport nodes and service.</p> <p>Green procurement for clean, low emission and energy-efficient vehicles for public authorities to boost the deployment of clean vehicles .</p>	

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Table 4.1 REMEDIO project Policy Recommendations (continuation)

		Type of intervention							
		Strategy or plan development	Financial policies/ investments	Regulations, incentives or taxes	Innovation support	Communication or guidance	Governance	Public procurement	Data collection & sharing
Level of intervention	Regional level	<p>a) Awareness and educational paths on sustainable urban mobility behavior: Environmental strategy led by regional public authorities in cooperation with teaching authorities so as allow children and young people to learn more about the options for sustainable urban mobility and the benefits in the environment, health and economy.</p> <p>B) Integration and harmonization of plans (SUMPS, SEAPS, SECAPS).</p>	<p>Founding programmes and schemes for implementing short distance supply chains and Circular Economy Solutions.</p> <p>Founding and tenders opportunities for strengthening the competitiveness of companies and industries in processing, reuse, recycling and recovery schemes for raw materials and waste such as minimizing environmental impacts.</p>	<p>Reinforcing alternative transportation: e.g. obligation to implement a dedicated soft mobility infrastructures (e.g. bike space/lane) in the framework of each project for street renovation.</p>			<p>Include social approach into policy implementation processes as to equilibrate social impacts of measures against pollutant sources in road transport and domestic heating</p>		
	Local level	<p>Integration and harmonization of plans (SUMPS, SEAPS, SECAPS). For SUMPs development, integration and coordination with the wider territorial planning level, most of all for traffic management, Public Transport Service, authorization procedure of new traffic attractors (for example shop centers), infrastructure intervention for multimodality</p>	<p>Business model for:</p> <p>a) alternative modes of transportation (for example car sharing services in charge of private companies to increase investment opportunities and competitiveness);</p> <p>b) city logistics for urban goods distribution and last mile delivery and collection;</p> <p>c) shared service for waste management and collection;</p> <p>d) maintenance of bike sharing services and park&ride solution in suburban areas.</p>	<p>Implement policies that aim to control vehicle mobility within urban centers, as: (a) circulation-restriction initiatives, (b) alternative initiatives, (c) safety walk and bike home-school paths, (d) differentiated the life time of the city for lowering pick hour congestions, (e) Bus rapid transit (f) bike paths/lanes (g) bike sharing, (h) park&ride or changing parks to PT.</p>	<p>Green platforms and "green technologies" at public transport: Promotion of zero emissions (or almost zero) systems to provide comfort and pleasure to the passengers (e.g. bus stops with local energy production using solar panels on top of the shelter, less energy consumption by reducing or switching off the electric devices (lights and information displays), charging devices with USB ports for smart phones and tables).</p>	<p>a) Communicate the objective not only the measure itself: Sometimes effective solution of a certain problem requires some unpopular measures that might not be positively accepted by the local/regional inhabitants. To avoid this, focus on communicating the objective and not the measure itself, so the acceptance rate will be higher being aware of a greater cause.</p> <p>b) Promotion of ICT to inform and collect feedback.</p> <p>c) Awareness and educational paths on sustainable urban mobility behavior, most of all addressed to young generation using participative approach and experiential laboratories</p>	<p>a) Horizontal Condominium: A participatory tool for street management should be consolidated with engagement of stakeholders and general public following a holistic approach to consider environmental improvements (e.g. noise, emissions, waste collection, etc.) and everyday life benefits (enjoyment of recreation activities, green spaces, etc.).</p> <p>b) Metropolitan governance structures (or agreements) needed for integrated renewal of big axis, for extended bike lanes, etc.</p>		<p>a) Obligation for real-time monitoring data (measured or simulated) of traffic-related conditions (real-time congestion, air quality, noise, carbon footprint) because people should know the state of the streets and have the right to optimize their itinerary to protect health and save time.</p> <p>b) Promotion of ICT to collect real-time data with the participation of citizens e.g. for the traffic conditions, the level of traffic noise and air quality from the use a relevant smart applications.</p>

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5. Framework of REMEDIO Outputs Use after its End

REMEDIO has provided to the institutional authorities feasible, tested and validated participatory governance methodology, modeling tools and mobility solutions to be used also after the end of the project, while considering the future time road traffic, environmental and general urban setting addressed in SUMP.

The sustainability of REMEDIO outputs and their transferability perspective are strengthened by:

- 1) The operational use of IMT, available to all interested stakeholders and experts through the link <http://remedio-imt.eu> to facilitate decision making for mobility solutions at street level (in collaboration also with USE, AUTH, ARPAV and IST as technical partners of REMEDIO),
- 2) The Memorandum of Understandings that have been signed to engage institutional and scientific bodies to concrete future actions based on the REMEDIO mobility solutions in Loures, Split, Thessaloniki and Treviso,
- 3) The critical mass of actors that have been involved in the participatory processes to promote sustainable mobility and capitalize the REMEDIO results in municipal strategies and plans (e.g. Resilience strategies, SUMP, Sustainable Energy Action Plans),
- 4) The Horizontal Condominium established as a transferable participatory governance model with the necessary participation of the public,
- 5) The expressed interest for the use of the outputs of REMEDIO by the municipalities involved in REMEDIO as associated partners. MDAT S.A. has identified opportunities to transfer the REMEDIO outputs and experience for the redesign of road axes of the municipalities Pavlos Melas (REMEDIO associated partner), Neapoli-Sykies and Evosmos-Kordelio belonging in the greater Metropolitan area of Thessaloniki,
- 6) The awareness that has been raised and the less carbon footprint lifestyle that has been encouraged in the general public and educational events organized throughout the project,
- 7) The continuation of networking with an extended list of a wide geographic coverage territorial authorities, networks of cities, consortiums of EU projects and initiatives, and experts that has been established during the project to foster the transferability of the REMEDIO outputs,
- 8) The continuation of collaboration with the MED UTC through participation of ARPAV and AUTH as associated partners in the second phase of INTERREG MED UTC project GO SUMP.