

SMART MATURE RESILIENCE

DELIVERABLE 2.3: SOCIAL DYNAMICS WORKSHOP

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EXECUTIVE SUMMARY

The third workshop of the SMR (Smart Mature Resilience) project took place from the 22nd to the 25th of February 2016 in Rome (Italy), and focused on policies, indicators and barriers associated to Social Dynamics. In this workshop, experts from the cities of Bristol, Donostia, Glasgow, Kristiansand, Riga, Rome and Vejle had the opportunity to exchange information and knowledge related to the risks associated to Social Issues and to provide material for the development of the Resilience Management guidelines.

The aim of this report is to explain the execution of the workshop, explaining the activities carried out and the obtained results. First, the organisational and preparation issues, which took place in relation to the workshop are presented, including the invitation to the workshop, the agenda setting and associated issues. Second, the main results from the exercises developed within the workshops are presented. These exercises were developed in order to identify the challenges and promising approaches related to the risks associated to social dynamics. Finally, the evaluation and lessons learnt from the workshop are presented.

A general result of the workshop is that the results from the exercises have helped providing a better definition to the specific stages of the city-resilience preliminary maturity model and finding relevant indicators to measure the resilience level in a particular stage and throughout the whole process. These results were useful to understand better the dynamics of building resilience. Furthermore, the workshop has met the relevant objectives of WP2, and they provide solid basis for the forthcoming work in other workpackages, including WP3 where the resilience tools will be developed.

TABLE OF CONTENTS

1. INTRODUCTION.....	6
2. WORKSHOP PREPARATION.....	7
Preparation activities.....	7
3. WORKSHOP EXECUTION AND RESULTS.....	9
Introduction to the workshop (22 nd of february)	10
The Group Explorer (GE) Session (23 th of february)	12
Purpose of the session	12
Building on the previous results of Riga/Bristol Group Explorer (GE) sessions	13
Methodology	15
Results of the GE session in Rome	15
Discussion of the results.....	16
Group Model Building Session (24 th of february).....	28
Introduction to the Group Model Building Session	28
First and Second Exercises: consolidation of policies and determination of the temporal order.....	28
Third exercise: validation of the definitions of the maturity model stages	33
Fourth exercise: indicators of the maturity model stages	40
4. DEBRIEF AND CONCLUSIONS OF THE WORKSHOP	44
Workshop evaluation	44
Evaluation of the group model building session	44
Improvements and lessons learnt on the group model building session	44
Evaluation of the group explorer session	45
Improvements and lessons learnt on the group explorer session.....	45
Workshop outcomes	46
Annex I Roles and participants of the workshop	47
Annex II Description of the roles	48

Annex III Exercises for the experts to prepare in advance of the workshop	50
Annex V Agenda of the workshop	58
Annex VI Evaluation questionnaire (group model building session)	65
Annex VII Summary of the answers obtained in the questionnaire (group model building session).....	67
Annex VIII Evaluation questionnaire (group explorer session).....	68
Annex IX Evaluation questionnaire (group explorer session).....	70
Annex X: Results of preferencing activity 1	73
Annex XI: Results of rating activity 1	74
Annex XII: Results of rating activity 2	75
Annex XIII: Assessing impact x probability based on rating activity results....	76
Annex XIV: Assessing the resilience strategies – practicality	77
Annex XV: Assessing the resilience strategies – leverage	78

1. INTRODUCTION

This deliverable reports about the third workshop on social dynamics in the course of the SMR project, which is the acronym for “Smart Mature Resilience”.

The workshop was organised by the City of Rome jointly with its Linked Third Party, Risorse per Roma, and took place from the 22nd to the 25th of February 2016 in Rome, Italy.

On the 22nd of February, SMR partners assisted an introduction session in which six experts on social issues from the city of Rome made presentations about social dynamics like vulnerable groups, immigrants, poverty, etc; so all the participants had the same vision of social issues. Then, Linköping University (LIU), the leader of work package 1 (WP1) of the SMR project, presented the current situation of the WP1 and the resilience concept developing in the project, so all the experts thought about the same resilience definition. In addition to the presentations, a preparation meeting regarding the organization of the workshop was carried out by the academic partners (TECNUN, CIEM, and LIU), ICLEI and DIN. The 23rd and the 24th of February were the de facto workshop days with external experts and SMR partners. Finally, on the 25th of February, a debriefing meeting to evaluate the execution of the workshop and obtain lessons learnt for the next ones was performed by all partners of the SMR project.

The aim of this deliverable is to explain the execution of the workshop, describing the activities carried out and the obtained results. First, the organisational and preparation issues are presented, including the invitation to the workshop, the agenda setting and associated issues. Second, the main results from the exercises developed within the workshops are described. These exercises were developed in order to identify the challenges and promising approaches related to the risks associated to social dynamics. The session held on February 23rd was led by the University of Strathclyde focusing mainly on gathering information to develop the Systemic Risk Questionnaire (SRQ), which will be developed in Work Package 3 (WP3). The session on the 24th of February was led by TECNUN and a collaborative methodology called Group Model Building (GMB) was used to carry out the activities whose results will be useful to develop the resilience maturity model in Work Package 2 (WP2). Finally, the evaluation and lessons learnt from the workshop are presented.

2. WORKSHOP PREPARATION

The main objective of the third workshop, which took place in Rome, was to gather useful information from experts regarding resilience policies and indicators associated to social issues in order to be able to develop the tools proposed in the project proposal such as the resilience maturity model and the systemic risk assessment questionnaire.

The steps for the workshop development (Figure 1) were to first prepare the whole workshop in aspects like agenda setting, logistics and requesting to the cities some materials in advance. Then, the workshop was carried out using the GE and GMB methodologies and a final debrief. Finally, the deliverable 2.3 was developed with all the information gathered during the workshop.



Figure 1. Steps for the workshop development

PREPARATION ACTIVITIES

Several duties and activities were performed to prepare the workshop. Useful information to improve the organisation and the correct implementation of the workshop was provided in advance with the aim to have a clear view of the expected role of each participant. The following information was given in the preparation period:

- Draft and final workshop agenda (extended and summarised) as well as the list of the workshop participants.
- During the exercises carried out on the 24th of February, each of the workshop participants was asked to assume a specific role. The description of the roles and the list of participants assigned to each role were provided to each participant to the scientific committee in advance (See Annex I and Annex II).
- Cities were requested to prepare some materials in advance for the Group Model Building session held on February 24th. City representatives (See Annex III) were asked to identify the most relevant policies/actions related to immigration, population ageing, inequality, vulnerable groups, health and well being, unemployment, crime rate and education, indicators to measure the development of those policies and finally, barriers to implement those policies/actions. This previous reflection was essential to have successful workshop outcomes.

The setting of the agenda for the third workshop consisted of an iterative process in which the project partners participated. The agenda for the third workshop about social dynamics that took place in Rome included the following steps:

- Periodic teleconferences were arranged among the workshop partners to prepare the structure and the exercises of the workshop and to identify the adequate experts that would participate in the workshop.
- The SMR partners from the City Council of Rome developed a list of suitable experts regarding social issues that could contribute to gathering information to accomplish the objectives of the workshop.
- TECNUN, with the help of Strathclyde, developed, based on the comments and suggestions received from the project partners in several weekly telephone conferences, the workshop agenda. This agenda included the main building blocks of the workshop with a rough time plan.
- The final version of the agenda for the workshop was approved one week before the workshop took place. This final version of the agenda (Annex V) included the description of the activities of the workshop, the timetable of the activities and the objectives of each activity.

3. WORKSHOP EXECUTION AND RESULTS

Participants of the workshop included scientific committee (LIU, TECNUN, CIEM, STRATHCLYDE, DIN and ICLEI) and experts on social issues from the cities of Bristol, Donostia, Glasgow, Kristiansand, Rome and Vejle. Table 1 presents the profiles of the experts who participated in the workshop and Figure 2 is a photo of all the workshop participants. The list of the workshop participants can be found in Annex I.

Table 1. Experts profiles.

Profile	City
City of Rome/Risorse per Roma	Rome
Head of European projects Office (City of Rome/Risorse per Roma)	Rome
Natural Hazard Assessment Expert (City of Rome/Risorse per Roma)	Rome
Department for economic development (City of Rome)	Rome
Head of the Department Promotion of social services and health of Rome	Rome
Glasgow Center for Population Health (Glasgow City Council)	Glasgow
Assistant Manager of Sustainability (Glasgow City Council)	Glasgow
Project Manager(Kristiansand City Council)	Kristiansand
Security and Crisis Manager (Kristiansand City Council)	Kristiansand
Head of VIFIN (Vejle City Council)	Vejle
VIFIN technician (Vejle City Council)	Vejle
Technical assistance of Strategic Planning (City Council of Donostia-San Sebastian)	San Sebastian
Social Services Councillor (City Council of Donostia- San Sebastián)	San Sebastian



Figure 2. Photo of the workshop participants.

INTRODUCTION TO THE WORKSHOP (22ND OF FEBRUARY)

Scientific committee meeting

On the 22nd of February, the scientific committee (TECNUN, STRATHCLYDE, LIU, CIEM, DIN and ICLEI) met at 09:00 on the Museum of Rome. The partners from the Council of Rome, in charge of organizing the workshop, welcomed the SMR project scientific committee. The objective of this meeting was, first to put in common the development of the project, discuss the European dimension of it and then organize the Group Model Building (GMB) session of the third day. For this session, the 16 participants of the workshop were divided into four groups. Furthermore, in each group representatives from two different cities had to be together. During this meeting, the scientific partners decided the participants of each group and reviewed the roles that each of them had to perform during the Group Model Building session (see Annex I and II).

Presentations about social dynamics

Afterwards, all the partners of the project, including the cities, met at 14.00 on the same museum. The objective of this meeting was to attend presentations of current experiences, best practices and difficulties concerning social dynamics.

The former Chief Resilience Officer of Rome carried out the first presentation. He talked about the 100 Resilient Cities¹ initiative that helps cities around the world to become more resilient to the physical, social and economic challenges that are a growing as part of the 21st century. He explained that Rome is struggling to reverse decades of poorly regulated development and addresses its in formal housing neighbourhoods, inadequate infrastructure provision, and sprawl. This activity has made Rome highly vulnerable to flooding and other disruptions, which threatens to undermine social cohesion and prosperity in this city of immense cultural and economic significance. Rome's city limits include large expanses of still viable rural land and natural reserves, and its forward looking planners are focused on transforming these assets to maintain and protect its environment and build long-term resilience to shocks and stresses. City of Rome has six critical assets: mobility, urban water cycle, historic-artistic heritage, tech network, ecosystems but it has no policies yet about those critical assets. the former Chief Resilience Officer of Rome talked about the weaknesses in governance/leadership, strength, social cohesion/capital and public space.

¹ www.100resilientcities.org

Then a from the University of Roma III, explained the Charter of climate vulnerability of Rome about some studies for intervention on the Prima Porta district. He explained that the governance in Rome is entrenched. There is a specific need to collect more information on climate vulnerability and collate it from different sources. Rome is surrounded by hills and it is near Tiber River, so it is vulnerable to climate hazards. They use a methodology called ESPON in Rome but the objective of this methodology is to expand it to other parts of the country. This methodology is based on risk (risk is a complex product of events; sensitivity produces impacts) maps based on data (e.g. satellite data) and identifies vulnerable areas within Rome. This methodology carries out a multilayer sensitivity analysis to prevent those risks. In the big flood in 2014 the government saved money due to this methodology.

Afterwards, the director of Europe consulting that collaborates with the Department for Promotion of social services and health of Rome, being specialized in Social Cooperation and coordinator of “Help different”, which is a work on the idea of knowledge sharing, and he explained that they work principally with homeless people and their final aim is to unify the data regarding homeless people gathered by different Italian help centers.

A member of the Ephidemiology Department, Lazio Region, specialized on environmental and health risks presented her research group who has developed a framework in social inequalities and environmental risks. She explained that they studied how the environmental risks affect people depending on different social determinants, such as, income, education, occupation, gender, migrant status, etc. She ended saying that their study has been helpful to develop the Italian National Heat Prevention Plan, identifying which social groups are the most vulnerable and that they should be the principal target of this plan.

The last presentation was carried out by the Headon the Computing and Technological Infrastructures Laboratory of ENEA and participant in CIPRnet. He is an expert in Critical Infrastructure Risk Analysis at both national and urban level. He presented his current work in two different projects. The first one is EISAC (European Infrastructures Simulation and Analysis Centre), where they work in the concept of a Virtual Centre of competence on CIs, which is responsible to produce, validate and integrate the tools developed within CIPRNet. The second one is the Project RoMA “Resilience enhancement of Metropolitan Areas”. This Project consists of developing a decision support system workflow. The idea is to give the possibility to simulate different scenarios and to measure how many people would be affected and to analyse the consequences different strategies would have in the city.

Finally, LIU (University of Linköping) made a presentation about the resilience concept developing in the project to ensure common ground regarding resilience definition and the worldwide approaches for building cities’ resilience.

THE GROUP EXPLORER (GE) SESSION (23TH OF FEBRUARY)

PURPOSE OF THE SESSION

The Group Explorer (GE) session was run by the University of Strathclyde and it took place on the 23rd of February 2016. The participants included 12 representatives from six of the partner cities, as well as 2 representatives from the scientific committee. The session fell under Work Package 2 (WP2), and its main objective was to “identify risks and problems derived from human dynamics, such as immigration related, multicultural, poverty, population aging and dependencies problems” (Table 2, sub-objective 2.4). The gathered information would subsequently inform the development of resilience tools in Work Package (WP3), and in particular the construction of the Risk Systemicity Questionnaire (RSQ). For that reason it was expected that the results of the session would lead to a better understanding of how the identified risks affected one another, as well as the key risk themes from the perspective of participating CITIES. The session was expected to add to material collected in Riga and Bristol on the “risks and problems derived from critical infrastructures dependencies, climate change and resulting natural disasters” (Table 2, objective of WP2).

Table 2: Aims of the session

Objectives	Description of the objectives as stated in the proposal
<i>Objective of WP2</i>	Gather requirements from CITIES regarding the necessities to improve their resilience level. In particular, risks and problems derived from critical infrastructures dependencies, climate change and resulting natural disasters, and human dynamics will be analysed with the CITIES and their requirements will be collected.
<i>Sub-objective 2.4 as part of WP2</i>	Identify risks and problems derived from human dynamics, such as immigration related, multicultural, poverty, population aging and dependencies problems. Already implemented best practice will also be identified. Gathered information will be subsequently used to develop tools in WP3.
<i>Expected results from the analysis</i>	The impact of one risk upon another will be considered to gain an understanding of the nature of the system of risks that resilient cities need to manage. Following this, the analysis carried out using the decision support system will help to identify key risk themes.

BUILDING ON THE PREVIOUS RESULTS OF RIGA/BRISTOL GROUP EXPLORER (GE) SESSIONS

Risk systemicity refers to the concern with networks of interacting risk events, dynamics, complex ramifications, and risk themes. This contrasts with the traditional risk registers which typically look at risks as being independent of each other. Thus the notion of *systemicity* (as in the RSQ) served a central point of reference in all WP2's GE workshops that have been conducted so far, which is evidenced in the obtained results (Table 3), including a number of highly interlinked risk themes, feedback loops, and policies. Since those results were seen as useful with respect to the objectives of the GE sessions, in Rome it was decided to follow a similar structure where participants were invited to assess their cities' resilience in the context of various possible scenarios or risk events, and then to collectively think about the unintended ramifications and relevant policies. Repeating the session design also ensured consistency of results – the same elicitation process and same format of results – and so data could be compared with the Riga/Bristol session and merged to create a consolidated set of material with respect to critical infrastructure, climate change and social issues.

Moreover, the sessions in Riga and Bristol allowed for further improving and experimenting with different categories of statements. These categories, apart from making it easier to follow the content of the map, play an important role both during the workshop and at the analysis stage in helping to understand better the various key elements of cities' resilience. For example, in Riga a type of policy called *ramified policy* was identified, which referred to policies that a city may develop in response to the ramifications of risks, i.e. after the risk event has triggered other risks (rather than in advance of the event). This type of policy was later modified, in the Bristol session, to *bounce forward policy* in order to account for the aspects of negative ramifications which concurrently provide cities with new opportunities for improving their resilience. The notion of a bounce forward policy arose from the introductory presentation from a Bristol expert on resilience (on the Monday). Thus, as it is explained in the following sections, the categories of statements developed in Riga and Bristol informed similar categories used in Rome.

Finally, the key risk themes identified in the GE workshops form a number of meta-themes that will be used as general risk themes in the RSQ. As an illustration, one of the risk themes from Riga was 'traditional and social media populated with false information', whilst in Bristol a theme of 'city exposed to media circus' arose – thus both of these themes can fall under a meta-theme titled *media*. Other meta-theme examples include social cohesion, and health. Moreover, as described in this report, in Rome new risk themes were identified, many of which relate to the existing meta-themes, thereby further elaborating those general risk categories (see Table 3).

Table 3: Summary of the key risk themes identified in the results of WP2 workshops in Riga and Bristol

	Riga	Bristol
Number of concepts (after tidying)	183	339
Number of links (after tidying)	339	515
Categories of statements	Trigger event, impact, proactive policy, ramified policy, uncontrol, key theme.	Trigger event, creeping event, impact, key theme, policy, bounce forward.
Number of policies	89	148
Key risk themes	<ol style="list-style-type: none"> 1. Mobile communication network overwhelmed 2. Non mobile telecommunication overwhelmed 3. Public transport and private transport not able to function 4. Electrical network overwhelmed with respect to faults or outages 5. Business infrastructure under pressure 6. The number of calls about loved ones safety increased 7. Cities affected by large increases of garbage 8. Traditional and social media populated with false information 9. Crowd death and serious injury 10. Health services under huge pressures 11. City reputation severely damaged 12. Shops and stores looted 13. City affected by violent riots 14. EU faced with political tension regarding willingness to help 15. Xenophobe political groups/parties being empowered 16. The integrity of European Union threatened 	<ol style="list-style-type: none"> 1. City overwhelmed by severe flooding 2. City facing landslide 3. Urban coastal areas damaged 4. City subject to drainage overflow 5. Permanently damaged properties 6. Damaged housing stock 7. City traffic subject to disruption 8. City exposed to 'media circus' 9. City subject to increase of air pollution 10. Declining water quality (eg blue algae) 11. Negative impact on animals/biodiversity 12. Increased pressure on authorities to act 13. Rising anxiety and depression 14. Increased level of homelessness 15. Increased social alienation 16. Less time spent outdoors on training/physical activity

Red = critical infrastructure themes, orange = media themes, blue = health themes, green = political themes, purple = social cohesion themes, yellow = crime themes, pink = immigration themes.

METHODOLOGY

The Group Explorer approach and risk mapping

As in Riga and Bristol, throughout the workshop in Rome a computerised group decision support system Group Explorer (GE) was used. The GE system has been designed and developed at the University of Strathclyde, and it has been used extensively to support organisations of various size, industry, and nature². The purpose of GE is to aid groups of people in developing a shared causal map via networked consoles. This map is displayed on a projected public screen and it encompasses statements representing participants' ideas that are linked to one another with unidirectional arrow which signify 'may lead to' relationships (i.e. the possible causality). Thus as participants interact with the public map, they actively gain a better understanding of other's thinking as well as their own thinking with regards to the discussed set of problems. With respect to its use in developing a view on risk systemicity, multiple perspectives and thus a wide range of risks can be gained from a range of stakeholders in a fair and structured manner. This supports the development of a comprehensive view of risks³.

The obtained risk maps are rich but can also be 'messy', however the analysis routines allow management of the complexity of the data without reducing its richness. These routines include: detecting emergent themes; local themes; emergent resilience themes; exploring vicious and virtuous cycles and so capturing feedback structures. As evidenced in this report, all of these analytical functions have been employed in this research.

Categories of statements in the workshop in Rome

*The categories of statements are explained here as a necessary reference for reading the causal maps included in the following parts of this section.

It is common practice to categorise statements generated during GE-facilitated sessions with different styles of text. This helps distinguish between different types of statements, and it makes it easier to follow these categories as the map increases in size (Table 4). There were four main colours of statements used in the session in Rome, and all of them were applied (albeit sometimes in a different form) in the previous two GE sessions. *Standard* category covers uncategorised

2Ackermann F, Eden C (2011) Making Strategy: Mapping Out Strategic Success. Sage, London, UK.

3 Ackermann, F., Howick, S., Quigley, J., Walls, L. and Houghton, T.(2014) "Systemic risk elicitation: Using causal maps to engage stakeholders and build a comprehensive view of risks", European Journal of Operational Research, Volume 238, Issue 1, Pages 290–299.

statements. *Strategy* category is similar to policy category used in Bristol and in Rome, and it refers to actions which cities take to address the negative ramifications of events. *Bounce forward* category is about making the most of the opportunities which derive from negative ramifications triggered by risk events. And lastly, the statements which become central (they have many links going into and out of them), and which thereby have a strong influence on the other parts of the map, are categorised as *theme* statements.

Table 4: Categories of statements used in the session in Rome

Standard: actions, events, or consequences which have not been categorised until now.	61 increased gap between rich and poor
Strategy: bundles of actions which cities take to address the negative ramifications of events.	432 train up volunteer counsellors
Bounce forward: new ways of addressing negative ramifications which cities have opportunity to learn/develop during the course of facing those risk impacts.	278 use schools and educational activities as social cohesion tool
Theme: a busy, strongly interlinked statement, which acts as a label for a whole cluster of links and statements.	16 loneliness and isolation among all people

RESULTS OF THE GE SESSION IN ROME

As in Riga and Bristol, in the GE session the representatives from city partners and the representatives from the SMR scientific committee were formed into pairs. Participants were instructed to use laptops to enter brief statements to express their views in relation to risks or actions. Participants were then asked to link the statements thus forming a causal risk map of causality. While participants were able to type their contributions in real-time, the emerging risk map was being continuously projected onto a public screen, thereby becoming a transitional object and a point of reference for group discussion. This section presents the results of these activities.

The GE session in Rome could be seen as productive in terms of how much data was created by participants. During the session they added 427 risk statements and 764 causal links, which is more than the number of contributions in Riga and Bristol (see Table 3). Throughout the session

participants were invited on a number occasion to express their views about the relative importance of emerging risk themes (e.g. networks of risk impacts and policies). With support of the GE system, participants' ratings could be expressed either on a numerical scale, or using digital blobs which were allocated to each user in a specified number. This could then show the opinions of the group and point to the areas where there appeared to be agreement or disagreement.

Step 1: Identifying risks

Process: At the start of the session participants were invited to add statements on the group map with regards to the question 'what are the social issues that ought to cause you the most concern?'

Results: in less than an hour participants contributed 84 statements and 100 links. From this initial material the facilitators were able to identify a number of key themes, for example by considering the relative centrality of risk statements (those with the highest number of causal links around them).

Step 2: Rating risk themes – exercise 1

Process: Participants were asked to express their rating of these emerging themes. Each user pair was given 9 green blobs and 9 red blobs, and they were allowed full freedom to distribute their blobs in a way they found suitable (Annex X), with green blobs meaning that the city is already prepared to manage the risk theme, and red blobs meaning that the city views the risk theme as significant to them.

Results: The themes for which the cities were the most prepared for were: happiness and good quality of life (7 green blobs), access to free & quality education (7 green blobs), and underemployment and '0 hour' contracts (6 green blobs). Meanwhile the themes which participants saw as the most significant were: ageing population (11 red blobs), loneliness and isolation (8 red blobs), and increasing issues related to mental health (6 red blobs).

Step 3: Rating risk themes – exercise 2

Process: In another exercise, at a later stage in the session, participants were asked to rate the risk themes on a scale from 0 to 100. In the first part of the exercise, they evaluated which risk themes were the most challenging to them (Annex XI). Subsequently, in the second part of the exercise, participants were asked to consider the same set of statements, but this time with respect to the question which of these risk themes were most probable to significantly increase their impact on the cities (Annex XII).

Results: in the first part of the exercise, the statements with the highest score were: high rising inequalities (average = 80), increasing issues relating to mental health (average = 72.14), and loneliness and isolation among all people (average = 65.71). Subsequently, the statements with the highest score in the second part of the exercise were: challenge of reducing social cohesion and integration of communities (average = 78.57), loneliness and isolation among all people (average = 70.00), and high rising inequalities (average = 65.71).

The results of the two parts of the rating activities were then multiplied for each statement in order to indicate their impact x probability (Annex XIII). Based on these calculations, the statements with the highest scores were: high rising inequalities (score = 5257⁴), loneliness and isolation among all people (score = 4600), challenge of reducing social cohesion and integration of communities (score = 4321), and increasing issues relating to mental health (score = 3865).

Step 4: Evaluating the strategies

Process: The final preferencing was undertaken with the aim to evaluate the strategies which were added by the group as possible ways of addressing the total scenario negative ramifications displayed on the public map. In that activity all 35 strategies (policies) were listed, and participants assessed whether suggested strategies were practical (green blobs) and whether they had the potential to leverage city resilience (blue blobs). Each user pair was given 5 green blobs and 5 blue blobs (Annexes XIV and XV).

Results: The most practical strategies were: support lots of local citizen initiatives (4 green blobs), build up local networks between citizens, companies and public authorities (3 green blobs), creative fund raising strategies to support community-social initiatives e.g. crowdfunding, businesses, philanthropy (3 green blobs), and pilot different models for affordable living (3 green blobs). Meanwhile the strategies which could give cities the highest leverage were: support lots of local citizen initiatives (3 blue blobs), and build up trust (3 blue blobs). Undoubtedly this part of the workshop was difficult for participants: i) being asked to address the total scenario rather than parts of it proved to be problematic, and ii) the exercise took place at the end of a tiring day. Thus, it seems likely that the policies suggested were not well thought through – indeed, when these were evaluated in the early part of the Wednesday workshop participants found the policies to be difficult to understand in isolation of the scenario and reflected the two problems above.

⁴ These scores are meaningless in any absolute sense, however relative scores are indicative their significance

DISCUSSION OF THE RESULTS

Key risk themes

The session in Rome met the objective of eliciting a system of risks with respect to social issues, as reflected in the resulting risk map and identified key risk themes. There were 31 interconnected key themes identified in the session. Those key themes were:

- Uncontrolled immigration
- Loneliness and isolation among all people
- Urban poverty
- Poor access to affordable housing
- Digitalization and the risk of marginalization
- Increasing crime
- Increasing issues relating to mental health
- Ageing population
- Welfare crisis
- Youth unemployment
- High rising inequalities
- Reducing social cohesion and integration of communities
- Health inequalities
- Under employment and short term 0 hours contracts
- Welfare system under pressure
- Disempowerment of citizens
- Access to free, quality, education
- Gender violence
- Families are living far away
- Loss of neighbourhood feeling
- Bullying
- Refugees lacking social relations
- Burnout
- Increased pharma prescribing
- Alcohol and drug abuse
- Decreased productivity and sickens from work
- Increased pressure on health care
- Gang culture
- Lack of social network
- Ideological politics and siloed decision making
- Riots

All of the listed key risk themes are interconnected, as it is shown in Figure 3, Figure 4 and Figure 5 which represent a simplified view on the relationships between the themes (links to other risks contained in the map are hidden).

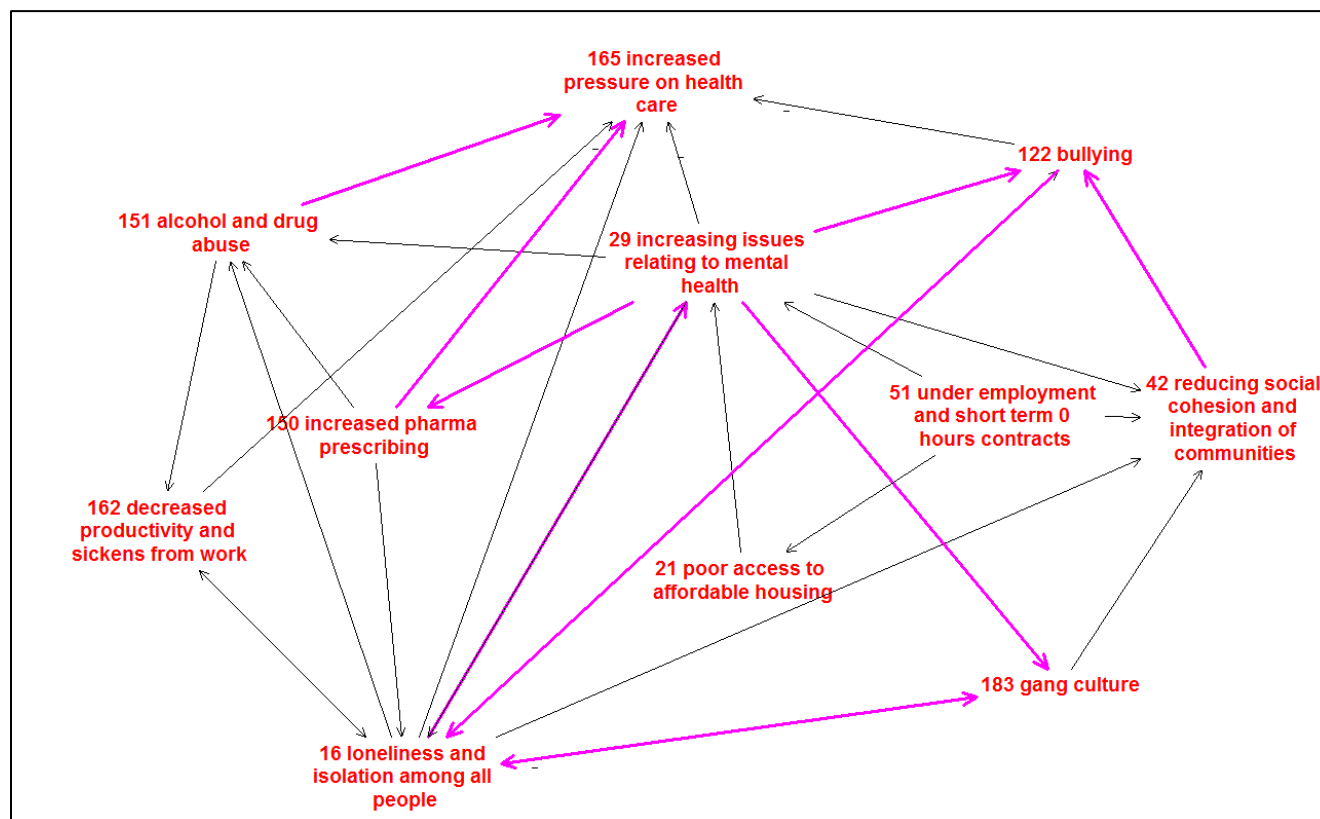


Figure 3: Simplified view of systemicity of key themes - part 1

*Pink causal links are parts of feedback loops. Minus signs near the arrows signify 'leads not to' (rather than 'leads to'). Numbers before statements signify the order in which statements were added on the public map.

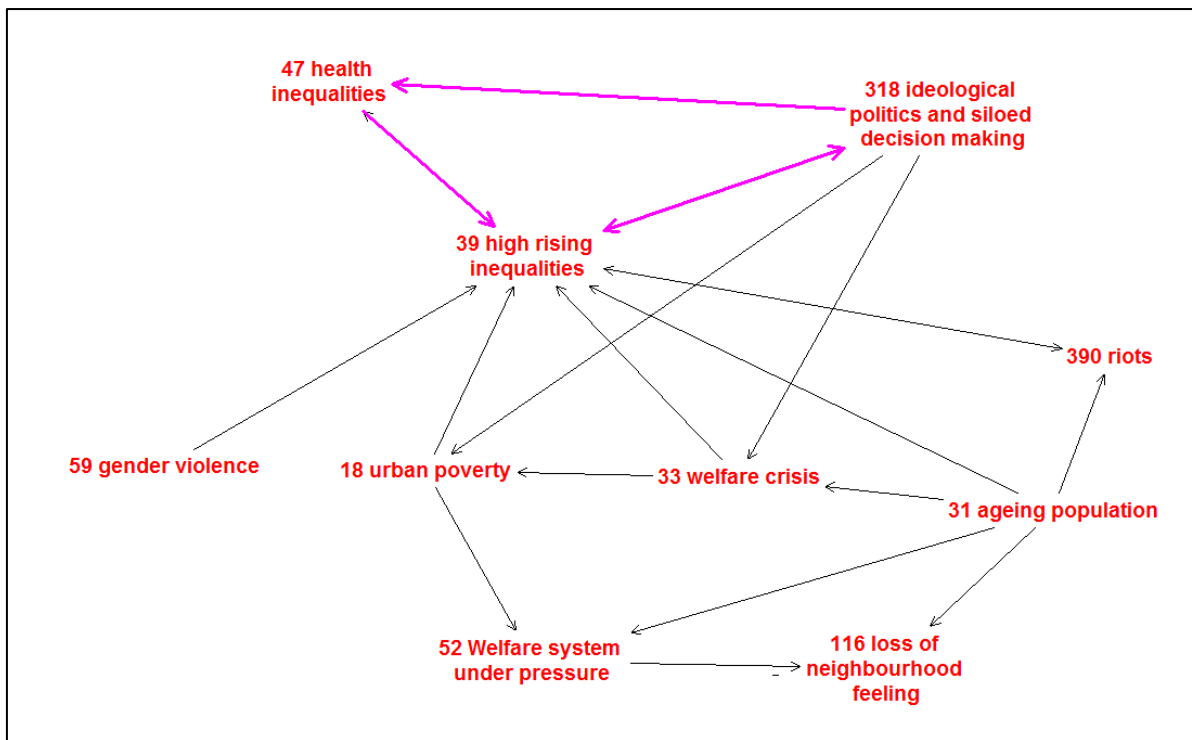


Figure 4: Simplified view of systemicity of key themes - part 2

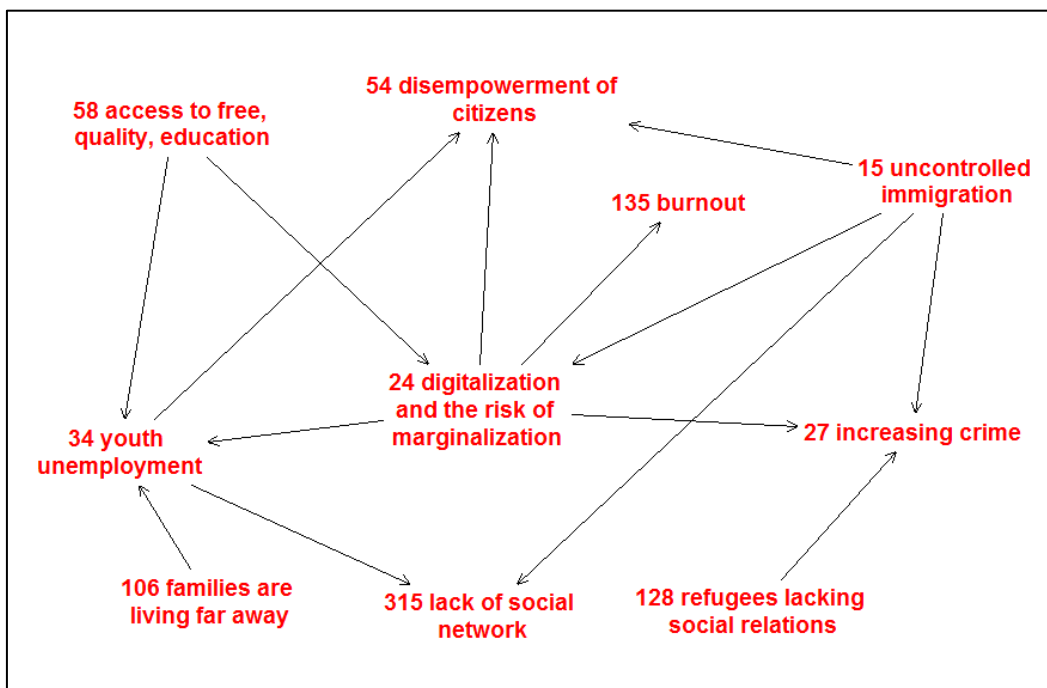


Figure 5: Simplified view of systemicity of key themes - part 3

Feedback loops

In addition to the exploration of the network of key risk themes, another important aspect of risk systemicity identified during the session are the feedback loops which show vicious cycles of causal relationships. Such feedback loops directly address the objective of the session (i.e. to map how risks impact one another), and they help to understand better the complex dynamics between risks. They are also important from the perspective of developing RSQ, because the risks 'belonging' to vicious loops, i.e. feedback that creates undesirable behaviour, will contribute more significantly to the assessment of risks in the questionnaire.

Figure 6 depicts a number of vicious feedback loops which form around the statement 'loneliness and isolation among people'. For example, 'loneliness' leads to 'drugs or other addictions abuse', which leads to 'risk of drug abuse', which leads to 'increased cost of healthcare and other social interactions', which leads to 'increased pressure on healthcare', which leads to 'health inequalities', which leads to 'high rising inequalities', which then goes back to 'loneliness'. Another, smaller loop, is where 'loneliness' leads to 'reducing social cohesion', which leads to 'bullying', which then closes the loop.

In Figure 7 is shown another view from the risk map developed in Rome where feedback loops form around 'ideological politics and siloed decision making' as well as 'high rising inequalities'. For example, 'ideological politics' leads to 'neo-liberal economic policies', which leads to 'welfare reform', which leads to 'amount of social welfare is reduced', which leads to 'high rising inequalities', which leads to 'return of far right politics', which then closes the loop.

In comparison with the results from addressing critical infrastructure and climate change (in Riga and Bristol) there were significantly more vicious cycles apparent. This result probably reflects the likely risk scenarios from social issues being particularly problematic for the future of cities.

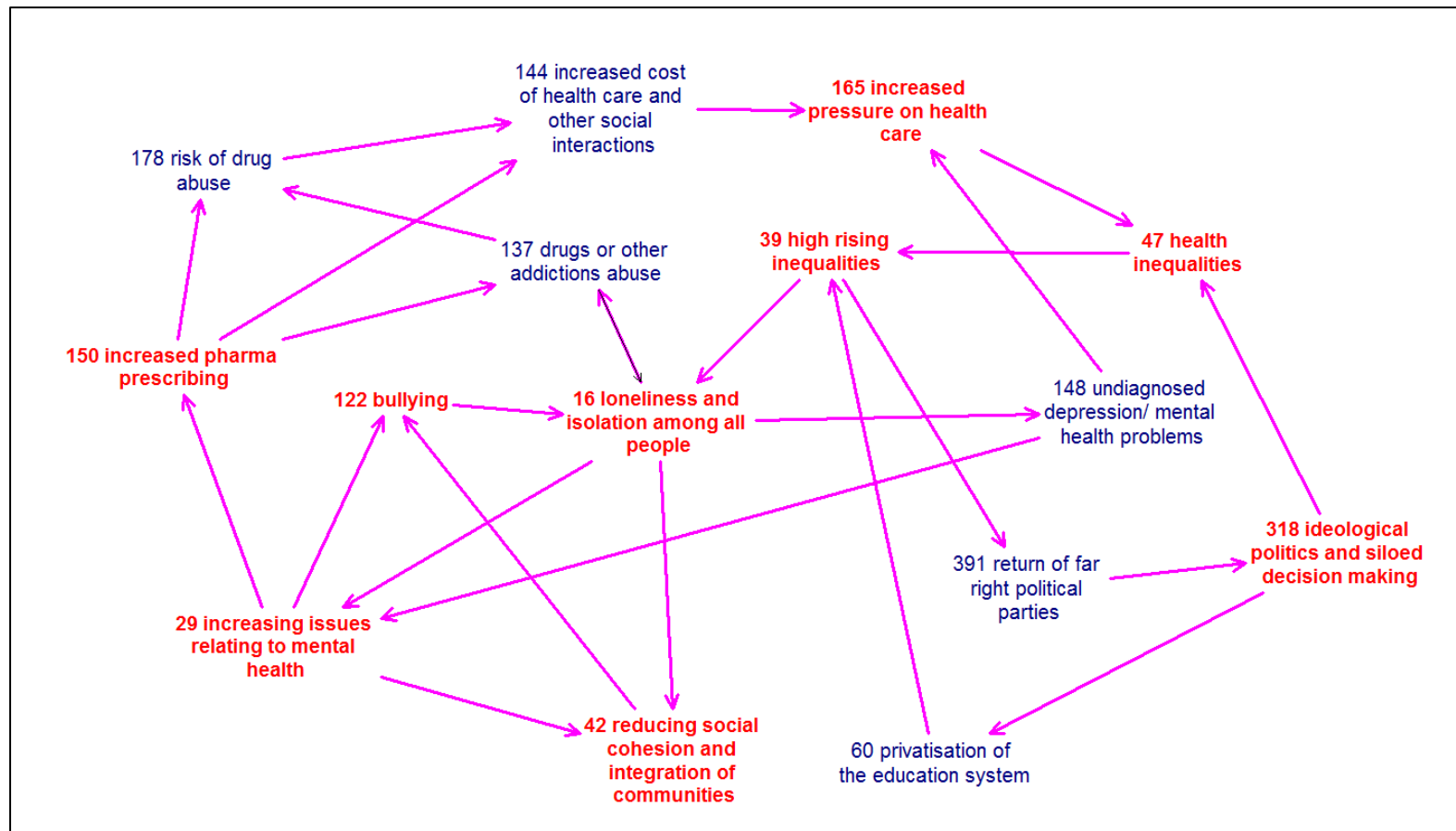


Figure 6: Feedback loops – part 1

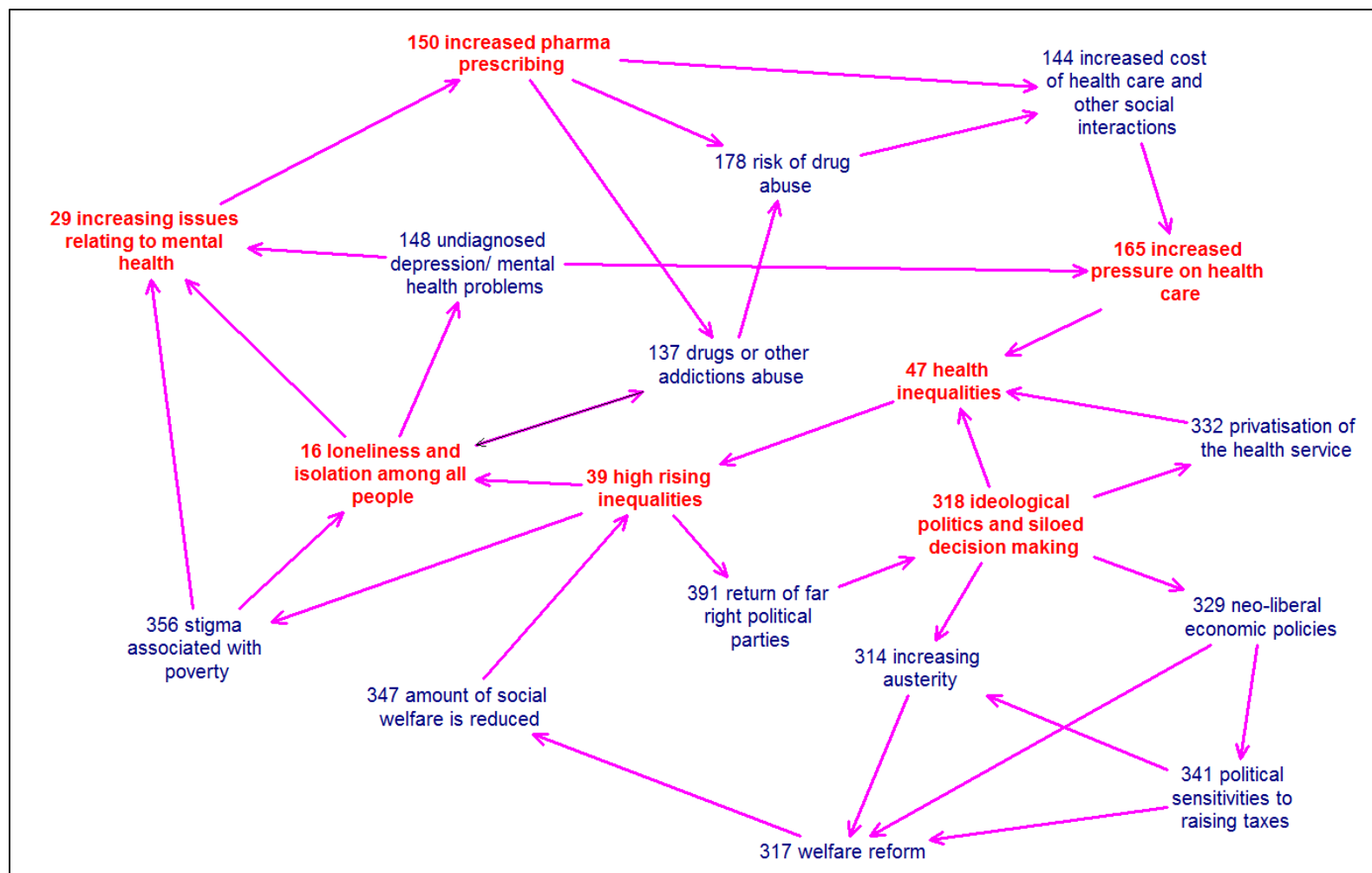


Figure 7: Feedback loops – part 2

Viewing the results from Rome with respect to the GE session's objectives

Overall, it can be concluded that the session in Rome met its originally stated objectives (Tables 2 and 5). The use of GE system supported participants in sharing their views of how risks affected one another, and what policies could be implemented to address those risks. The applied methodology also proved helpful in capturing key risk themes and systemicity of risks, which, as described in this report, were important elements of the session's aims. Moreover, the broad area of risks associated with human dynamics/social issues was explored from multiple perspectives (rather than for example just concentrating on the topic of migration), and thus the risk themes identified in Rome allowed further elaboration of the meta-risk categories from the two previous sessions, including health, social cohesion, and crime (Table 6).

Consequently, looking at the results of GE sessions in WP2 so far, it can be concluded that the material which has now been collected will support the construction of a draft of a part of RSQ prior to the Vejle workshop. Such a draft is important as a next stage by: i) providing partners with an example of how the GE data converts to a RSQ, ii) enabling partners to comment on the prospective RSQ, and iii) providing Strathclyde with an exemplar that can form the design proforma for the full development of the RSQ. The obtained meta-categories will help to structure the questionnaire by informing the different risk areas to be covered. The vicious cycles and the causal relationships between negative ramifications will inform the assignment of weightings and the calculation of risk scores to the answers obtained from those completing the questionnaire. The portfolios of policies described by participants will inform the development of individual questions so that they can effectively probe the respondent's preparedness for addressing risk which they may face as a city.

Table 5: How the GE session in Rome met its objectives

Objectives	How the GE session in Rome met its objectives
<i>Objective of WP2</i>	<ul style="list-style-type: none"> Gather requirements from CITIES regarding the necessities to improve their resilience level. → <u>CITIES representatives actively contributed to the shared public model within a facilitated GE session and they were able to track the other representatives' understanding of the discussed problems.</u> In particular, risks and problems derived from critical infrastructures dependencies, climate change and resulting natural disasters, and human dynamics will be analysed with the CITIES and their requirements will be collected. → <u>As evidenced in the list of key risk themes, the broad risk area of human dynamics was explored extensively during the session.</u>
<i>Sub-objective 2.4 as part of WP2</i>	<ul style="list-style-type: none"> Identify risks and problems derived from human dynamics, such as immigration related, multicultural, poverty, population aging and dependencies problems. → <u>427 risk statements and 764 causal links were created with respect to risks in this area.</u> Already implemented best practice will also be identified. → <u>Information about policies, strategies, and CITIES' approaches to resilience was collected.</u> Gathered information will contribute to objective O2.4 and will be subsequently used to develop tools in WP3. → <u>The systemic nature of collected data, with focus on networks of risks and feedback loops, are of high relevance to the tools in WP3, especially to the development of RSQ.</u>
<i>Expected results from the analysis</i>	<ul style="list-style-type: none"> The impact of one risk upon another will be considered to gain an understanding of the nature of the system of risks that resilient cities need to manage. Following this, analysis carried out using the decision support system will help to identify key risk themes. → <u>As evidenced in this report, both key risk themes and systemicity between risks were analysed using the GE system.</u>

Table 6: Workshop in Rome - summary of results

	Workshop in Rome - results
Number of concepts (after tidying)	427
Number of links (after tidying)	764
Categories of statements	Standard, strategy, bounce forward, key theme.
Number of policies	35
Key risk themes	<ul style="list-style-type: none"> • Increasing issues relating to mental health • Ageing population • Health inequalities • Burnout • Increased pharma prescribing • Alcohol and drug abuse • Decreased productivity and sickness from work • Increased pressure on health care • Loneliness and isolation among all people • Urban poverty • Poor access to affordable housing • Digitalization and the risk of marginalization • Youth unemployment • High rising inequalities • Reducing social cohesion and integration of communities • Under employment and short term 0 hours contracts • Disempowerment of citizens • Access to free, quality, education • Families are living far away • Loss of neighbourhood feeling • Refugees lacking social relations • Lack of social network • Increasing crime • Gender violence • Bullying • Gang culture • Riots • Welfare crisis • Welfare system under pressure • Ideological politics and siloed decision making • Uncontrolled immigration

Red = critical infrastructure themes, orange = media themes, blue = health themes, green = political themes, purple = social cohesion themes, yellow = crime themes, pink = immigration themes.

GROUP MODEL BUILDING SESSION (24TH OF FEBRUARY)

On Wednesday 24th, the Group Model Building (GMB) session started with a brief welcome and an introductory session. Afterwards, the exercises of the GMB session were explained. During the morning, the first two exercises were carried out: Firstly, the consolidation of the policies related to resilience and social problems obtained in the GE session from the previous day and secondly, the determination of the temporal order in which those policies should be implemented.

During the afternoon, the experts worked on the improvement of the preliminary maturity model. The third exercise consisted of improving the definition of the SMART maturity stages while the fourth exercise has the goal of identifying useful indicators to monitor the resilience building process of cities throughout the SMART stages. Finally, to conclude the session, a brief analysis of the obtained results was carried out.

INTRODUCTION TO THE GROUP MODEL BUILDING SESSION

The coordinator of the project from TECNUN welcomed the participants to the second day of the workshop. He made a brief presentation about the objectives of the exercises that were going to be carried out during the GMB session.

Methodology for the exercises of the GMB

Table 7. Roles and participants of the different groups.

Roles	Group 1	Group 2	Group 3	Group 4
Experts city 1	2 from Donostia	2 from Vejle	2 from Rome	2 from Glasgow
Experts city 2	2 from Bristol	2 from ROME	2 from Kristiansand	Rome
Group facilitator	TECNUN	LIU	CIEM	ICLEI
Group recorder	TECNUN	TECNUN	CIEM	2 from DIN

The same methodology was used for all the exercises carried out during the GMB session: first, the experts were split in small groups in order to develop the exercise (see Table 7) and afterwards the results obtained in each small group were presented in a plenary session. Each group consisted of two representatives from two different cities. Furthermore, a group facilitator and a recorder, from the scientific partners were assigned to each of the groups. On the one hand, the facilitator was responsible for ensuring the quality of the group discussion and clarifying any

question about the goal of each activity. On the other hand, the group recorder was responsible for gathering all the information that appears in small group discussions.

FIRST AND SECOND EXERCISES: CONSOLIDATION OF POLICIES AND DETERMINATION OF THE TEMPORAL ORDER

The objective of the first exercise was to consolidate the policies and actions obtained in the Group Explorer (GE) session of the previous day. The list of policies obtained were useful to address the social problems that citizens suffer every day.

Experts talked in small groups (Figure 8) about each of these policies, explaining whether they have implement some actions related to these policies in their own cities. The city representatives firstly explained to each other about what they have done and achieved in their particular city and after they explain which are their remaining concerns about it.



Figure 8. A small group working on the first exercise

After that, policies were classified according to the similarities among them. In total, four main different categories were identified:

1. Robustness of infrastructures & Resources (R): Policies whose objective is to increase the robustness level of city infrastructures and provide with resources to improve their robustness level.
2. Preparedness or planning (P): Policies whose main objective is to increase the preparedness level of a city in case a crisis occurs.
3. Leadership (L): Policies that are related to the leadership approach cities need to increase their overall resilience level.

4. Cooperation (C): Policies whose main objective is to improve collaborative procedures among different institutions and stakeholders to enhance the overall resilience level of a city.

Apart from the policies used in this exercise of the GMB session, cities were asked to complete some exercises before the workshop in order to gather more information about what policies and activities are being carried out more specifically in each city. All the results and the conclusions obtained analysing this information are explained in more detail in Annex IV.

Table 8. Stage definitions of the Resilience Maturity Model

After making a reflection on the list of policies obtained from the Group Explorer session, experts were asked to determine the temporal order in which those policies should be implemented in

	Maturity Level	Tentative Description
S	Starting	The city has launched policies regarding resilience development. The risk assessment is still fragmented and incomplete with regard to hazards affecting critical infrastructures and man-made threats. The community involvement and the private-public cooperation are incipient. The approach is mainly city centred. A multi-governance approach with a European dimension is dormant. The city is not part of a larger resilience network.
M	Moderate	The city manages resilience development policies, using control measures. The risk assessment with regard to hazards affecting critical infrastructures and man-made threats are been operationalized in cooperation with critical infrastructure providers. Plans to involve communities and develop private-public cooperation have been developed. The city recognises the relevance of a multi-governance approach with a European dimension and acts to invigorate the approach. The resilience management is still fragmented and siloed. The city has started planning for networking with other European cities with regard to resilience and sustainability.
A	Advanced	The city has developed a framework to manage resilience within an explicit holistic approach that integrates critical infrastructure providers, expertise on man-made disasters and sustainability. Community resilience and private-public cooperation is part of the approach. The nodes in a multi-governance approach with a European dimension are well-linked in the plans, but not yet fully operationalized. The city is member of a major network of European cities with regard to resilience and sustainability.
R	Robust	The city has engaged all relevant agents to its resilience holistic approach. Agents perceive value added by resilience. The multi-governance approach with a European dimension is well developed and operationalized. The city is a member in a major network of European cities with regard to resilience and sustainability, with a proactive posture regarding interdependencies and potential cascading effects. In the sense of this project one can speak of a CITY.
T	Vertebrate	The CITY excels with its resilience as part of the ecosystem (regional, national, European) resilience. The CITY acts as a vertebra in the European Resilience backbone

cities. Actually, experts from each city were asked to place each policy in one stage taking into

account the preliminary resilience maturity model of the project called SMART (Table 8). The acronym SMART includes the starting letter of each of the five stages of the proposed maturity model: Starting (S), Moderate (M), Advanced (A), Robust (R) and Vertebrate (T). The maturity model represents the trajectory of cities that mature from low resilience to high resilience through those five stages.

Results

After working in small groups, the data gathered was analysed and the policies that were not a direct responsibility of the city council were removed. The removed policies were those that depend on national or regional authorities. Therefore, although citizens may be influenced by their impact, city authorities cannot control these policies.

Table 9: Classification of the relevant policies into the resilience maturity model.

CAT.	POLICIES	STARTING	MODERATE	ADVANCED	ROBUST	VERTEBRATE	NO
R	1. Everyday home rehabilitation for +65	1	1	4			
R	2. Microcredit to fight poverty	1	4				1
R	3. Public strategies to build an urban environment where economic activities and job creation	2	4				
R	4. Pilot different models for affordable living		1	2	2		1
R	5. Public support and assistance in business creation and their maintenance in the long run		3	3			
R	6. Invest in key services and infrastructure to safe in longer term	1	2	3			
P	7. Help volunteers with resources		2	2		1	
P	8. Early stage crime prevention	1		2	2		1
P	9. Coordination of voluntarily organizations towards municipal goals	1	3	2			
P	10. Promote proactive health actions	2	4				
L	11. Mapping all municipal functions to take better and more cost effective connections	3	2				
L	12. Encourage participation of women to development of micros and SMEs		3				
L	13. Creative fund raising strategies to support community social initiatives			4	1		
L	14. Personalized approaches instead of 1 size fits it all	1	1	2		1	
L	15. Increased competence to the public to prevent inequalities		5		1		
L	16. Collaborative budgeting across public agencies			5	1		
L	17. Focus on a culture of knowledge and respect of the different	1	1	2	1	1	
C	18. Support lots of local citizen initiatives		5				
C	19. Build up local networks between citizens, companies and public authorities	1	2	2	1		

Table 9 summarises the main results obtained in the plenary session, where the policies the relevant policies have been classified into those four different categories explained before: Robustness of infrastructures & Resources (R), Preparedness or planning (P), Leadership (L) and Cooperation (C). Moreover, experts were also asked to determine the stage of the preliminary maturity model in which each policy should be implemented in cities. The numbers in the cells represent the number of votes received by each policy. It should be clarified that although there were 4 groups the number of cities participating in the workshop was six, that is why the total number of votes was 6 in most of the cases. It should be also clarified that regarding some policies the total amount of votes received is not of six. The reason for this is that sometimes cities were

not sure about in which stage of the maturity model should a particular policy should be implemented and therefore decided not to vote.

Analysing the results of table 9 it could be seen that there is a consensus in some policies on when the policy should start being implemented. For example, the policies in green are good examples since most of the experts have agreed on the stage of the preliminary maturity level where they should start implementing:

Table 10. Policy classification

Number of policy	Policy	Stage
1.	Everyday home rehabilitation for +65	Advanced
2	Microcredit to fight poverty	Moderate
12	Encourage participation of women to development of micros and SMEs	Moderate
13	Creative fund raising strategies to support community social initiatives number	Advanced
15	Increased competence to the public to prevent inequalities	Moderate
16	Collaborative budgeting across public agencies	Advanced
18	Support lots of local citizen initiatives	Moderate

On the other hand, experts did not achieve a consensus for other policies classifying them in different maturity stages. For these cases, it was concluded that these policies had a transversal approach and should be considered throughout the whole resilience building process. However, those main policies should be divided into more precise sub policies that will be implemented in each of the maturity stages. The policies in blue are good examples of transversal policies that should be considered in most of the maturity stages.

- 7. Help volunteers with resources
- 8. Early stage crime prevention
- 14. Personalized approaches instead of 1 size fits it all
- 17. Focus on a culture of knowledge and respect of the different
- 19. Build up local networks between citizens, companies and public authorities

Regarding the rest of policies there is not a clear consensus among experts on the maturity stage where they should be, although the experts agreed on placing them on the early stages of the maturity model:

- 3. Public strategies to build an urban environment where economic activities and job creation
- 6. Invest in key services and infrastructure to safe in longer term
- 9. Coordination of voluntary organizations towards municipal goals
- 10. Promote proactive health actions
- 11. Mapping all municipal functions to take better and more cost-effective connections

Finally, the rest of the policies have been placed on the middle stages of the maturity model:

- 4. Pilot different models for affordable living
- 5. Public support and assistance in business creation and their maintenance in the long run

THIRD EXERCISE: VALIDATION OF THE DEFINITIONS OF THE MATURITY MODEL STAGES

The objective of this third exercise was to validate the definitions of the different stages of the preliminary resilience maturity model (Table 10). The maturity model represents the trajectory of cities that mature from low resilience to high resilience through five stages: Starting (S), Moderate (M), Advanced (A), Robust (R) and Vertebrate (T). The table 5 shows the tentative description of each stage.

In order to carry out this excercise, the definition of the five stages where put on the wall and all the participants in small groups (Figure 9) had 10 minutes to discuss and add all the missing information at each stage definition. Each group has to analyse each stage separately.



Figure 9. A small group working on the third exercise

Results

As a result of this exercise, the definitions of the maturity stages of the preliminary maturity were improved. Following, the new definitions for each stage are presented highlighting in red the changes proposed by experts. Apart from the definition of each maturity stage, new actions were also identified for each of these stages.

Starting Stage (S)

The definition of the Starting stage (S) was modified as follows (Figure 10):

*The city has ~~launched~~ **programmed** policies regarding resilience development. The risk assessment is still fragmented and incomplete with regard to hazards affecting critical infrastructures and man-made threats. The community involvement and the private-public cooperation are incipient and **not formalized**. The approach is mainly city centred. A multi-governance approach with a ~~European~~ **global** dimension is dormant. The city is not part of a larger resilience network.*

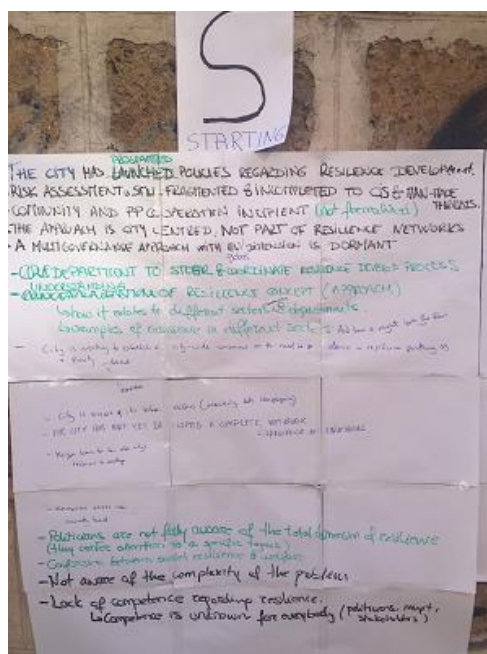


Figure 10. Starting stage results

And there were added the following points:

- The city creates a department to steer and coordinate resilience development.

Figure 11. Moderate Stage results

And there were added the following points:

- The city reviews its resilience activities
- The city starts to destroy siloes

Advanced Stage (A)

The definition of the Advanced stage (A) was modified as follows (Figure 12):

*The city has developed a framework to manage resilience within an explicit holistic approach that integrates **all sector's** critical infrastructure providers, expertise on man-made **and natural** disasters and sustainability. Community resilience and private-public cooperation is part of the approach. The nodes in a multi-governance approach with a European dimension are well-linked in the plans, but not yet fully operationalized. The city is member of a major network of European cities with regard to resilience and sustainability*

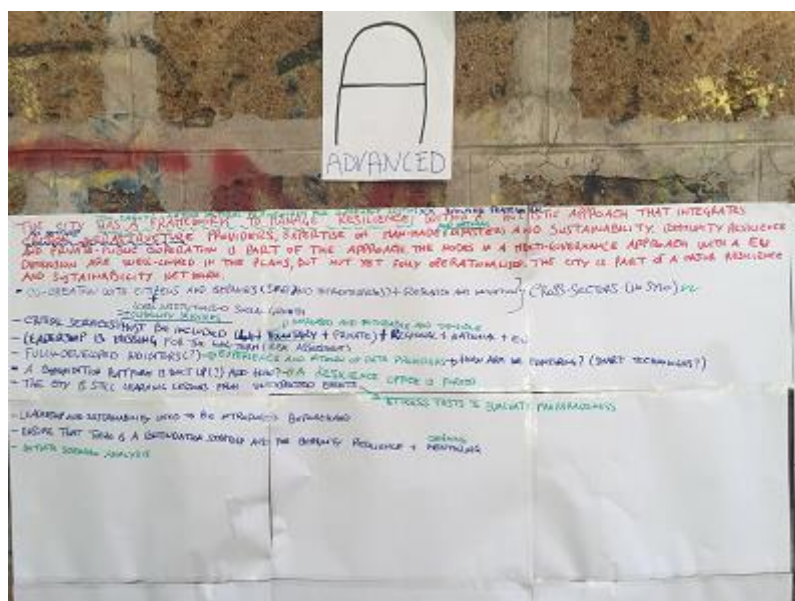


Figure 12. Advanced stage results

And they added the following points:

- Co-creation of local institutions, companies and research and innovation centers with citizens.
- Critical and community services must be included
- Leadership is missing for the long-term
- Fully-developed indicators. Experience and network of data providers
- A communication platform is build up and a resilience office is formed

- The city is still learning lessons from unexpected events. Stress tests are carried out to evaluate preparedness
- Leadership and sustainability need to be introduced and developed
- The city ensures that there is also a continuation strategy for community resilience
- The city initiates scenario analysis

Robust Stage (R)

The definition of the Robust stage (R) was modified as follows (Figure 13):

The city has engaged all **relevant known** agents to its resilience holistic approach. Agents perceive **and measure/contribute** value added by resilience. The multi-governance approach with a **European global** dimension is well developed and operationalized. The city is a member in a major network of **European other** cities (**state of the art in other robust cities, best practices**) with regard to resilience and sustainability, with a proactive posture **and continuous learning (be prepared for the unknown events)** regarding interdependencies and potential cascading effects. In the sense of this project one can speak of a CITY.

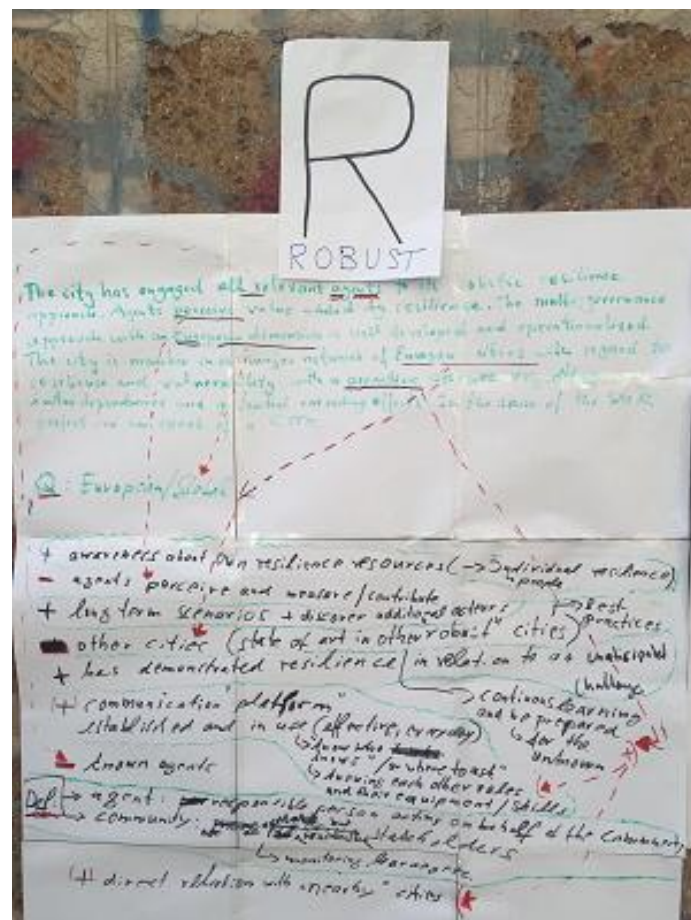


Figure 13. Robust stage results

And there were added the following points:

- Awareness about own resilience resources (individual resilience)
- Long term scenarios and discover additional unknown agents
- The city has demonstrated resilience in relation to an unanticipated challenge
- A communication platform is established and in use (effective everyday)
- The city has direct relation with nearby cities

Vertebrate stage (T)

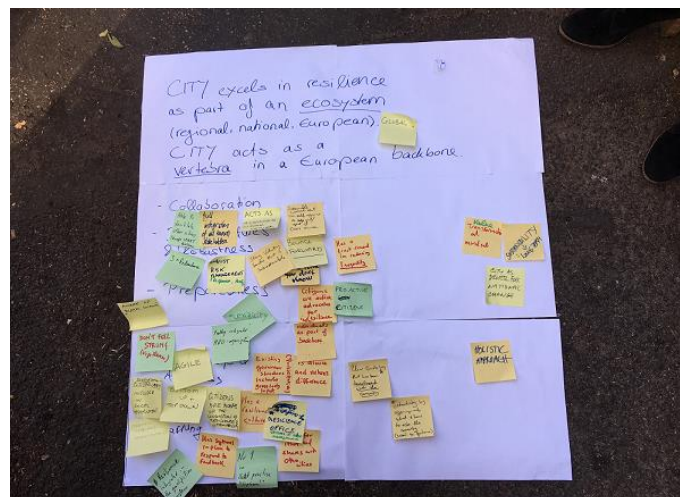


Figure 14. Vertebrae stage results

The definition of the Vertebrate stage (T) was modified as follows (Figure 14):

The CITY excels with its resilience as part of the ecosystem (regional, national, ~~European~~ Global) resilience. The CITY acts as a vertebra in the European Resilience backbone

In addition, the groups thought that it is important to include the following points in the T stage general definition separated by four categories defined in the first exercise (Cooperation, Robustness, Preparedness, and Leadership) adding a new category “Learning” which was thought that integrates the others four due to the continuous process of the meaning process (Figure 15).

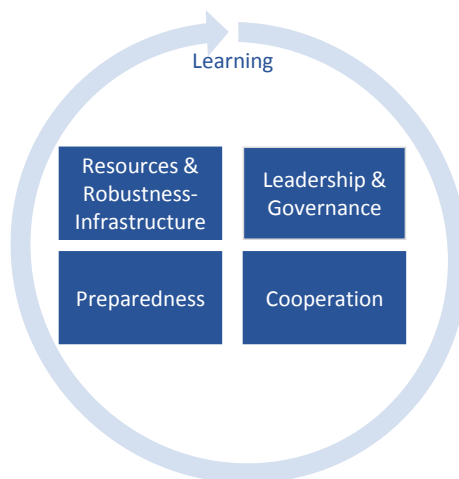


Figure 15. Five resilience categories of the SMR project

Table 11. Results of the points that should be included in Vertebrate Stage definition

FOURTH EXERCISE: INDICATORS OF THE MATURITY MODEL STAGES

<p>1. COOPERATION</p> <ul style="list-style-type: none"> • The CITY is able to facilitate other cities through SMART resilience • Full integration of all known stakeholders • The CITY acts as a leader in global networks • Sustainable communities can self-organize to help if a crisis occurs
<p>2. INFRASTRUCTURE & ROBUSTNESS</p> <ul style="list-style-type: none"> • CI Redundance • The city has a robust risk management • The city has a strong volunteering sector that is sustainable • Bounce forward • The city has a track-record in reducing inequality
<p>3. PREPAREDNESS</p> <ul style="list-style-type: none"> • The CITY is aware of black swans • The CITY is flexible • The CITY has fully integrated with High Reliability Organization (HRO) • The CITY doesn't feel strong • The CITY is agile • The citizens are active advocates for resilience (Proactive citizens) • Resilience Indicators are part of the backbone • Individuals are part of the backbone
<p>4. LEADERSHIP</p> <ul style="list-style-type: none"> • The CITY has a resilience culture • The citizens are included in the local government • The CITY has self-organization • Bottom up + top down • Citizens are aware of the connection of resilience and sustainability • The CITY is a driver for national change
<p>5. LEARNING</p> <ul style="list-style-type: none"> • The CITY is the number 1 in best practices • Resilience is integrated in the qualification system

In the fourth exercise of the GMB session, the city representatives were asked to identify the indicators that could be used in their cities to evaluate the resilience level of the city in order to measure the different stages of the preliminary maturity model. Thus, the objective of this exercise was to propose representative indicators that could be used by the different cities to assess the resilience level. In addition, the proposed indicators were classified as “Stage Indicators” or “Process Indicators”. Station indicators were those that only appear at a specific stage and process indicators were those that evolve along the following stages.

Results

As a result of this exercise, new indicators for each stage were found are shown bellow:

1. Starting stage

STAGE INDICATORS

- Number of policies and strategies that cover resilience
- Number of risks related to resilience
- Frequency that the City collects data in order to identify risks and vulnerabilities and take adequate actions and response
- Number of projects which are Public/Private
- Quality of projects which are Public/Private
- Number of meetings about resilience
- Is there evidence of plans/ intentions to work with networks ? (Y/N))
- Is there evidence of plans/ intentions to work above with EU dimension? (Y/N)
- % of budget allocated to resilience
- Times that the word "Resilience" come up in Government documents
- Presence of politicians in policy making process
- Existence of CRO (Resilience Dept)
- Survey to measure the level of resilience of citizens at home
- Is your crisis management plan formalized? (Y/N)
- Funding for a crisis situation (Y/N)

PROCESS INDICATORS

- % of departments involved
- % of hits/mentions (newspaper, webpage) of the resilience word
- Budget for resilience activities
- Number of stakeholders involved
-

2. Moderate Stage

STAGE INDICATORS

- Crisis management plan (Y/N)
- Plan for community involvement (Y/N)
- Plan for private-public cooperation (Y/N)
- Plan for voluntaring involvement (Y/N)
- White paper for multi-governance (Y/N)
- Number of cross-silo action plans
- Service level agreement across the silos (Y/N)
- Number of policies in development with multi-governance partner approach
- Scoping for networks (Y/N)
- Plan for fostering resilience culture (Y/N)

PROCESS INDICATORS

- State of the art of plans (several indicators)
- Degree of sharing and learning
- Extent of resilience activities
- Degree of community involvement
- Level of citizens influence
- Level of citizen's satisfaction
- Level of volunteer engagement
- Degree of occurrence of "Resilience" in city website
- Number of Stress test/audits simulations
- Quality of actionable information and communication

3. Advanced Stage

STAGE INDICATORS

- City council has released a written social resilience action plan (Y/N)
- Having a local co-creation network that is established (Y/N)
- State of the communication platform
- Monitoring strategy for voluntary initiatives (linked to a policy) : Number of written agreements
- Frequency of periodic reports from social initiatives and voluntary organizations
- Is a resilience officer there? (Y/N)
- Presence of a warning system (like SMS) (Y/N)
- Risk analysis evaluation established. Check list for new areas development or reconstruction (Y/N)
- City should be part of at least national resilience network (Y/N)
- % of green infrastructures
- Assessment of community resilience in different districts
- Number of policies deriving from inequality measurements
- Number of Start-up development and streamlining policies
- Having an innovation incubator (Bringing different expertises together) (Y/N)
- Evidence of social capital (Y/N)

PROCESS INDICATORS

- % of budget allocated to (social, climate change and infrastructure) resilience
- Frequency and number of reports from resilience office
- Measure progress against a base line
- Cost of extreme events vs cost of making a city hotspots resilience
- Vulnerability mapping
- Devolution to communities and lobbying at the national level to devolve more
-

4. R Stage

STAGE INDICATORS

- High level of participation (number of groups, individuals)
- % of people feeling valued within community
- Employment rates for vulnerable groups (women, immigrants)
- Number of languages spoken in schools
- Number of people spreading around the city using the platform
- Number of cities working closely together
- Frequency of partnership dialogue
- Number of refugees integrated
- % of elderly that can live at home

PROCESS INDICATORS

- Relative difference in healthy life expectancy between communities
- Employment rates
- % of municipal budget spend on resilience
- Budget shave foreseen for unexpected events, research + pilots
- Poverty (number of children food, fuels)
- Redundancy in all CIs (2x)

5. T Stage

STAGE INDICATORS	PROCESS INDICATORS
<ul style="list-style-type: none"> • Business survival rate • Diversity of economy • Community ownership of assets • Number of social enterprises • Number of projects involving multiple cities • Number of old people volunteering • Number of partnership with less resilient cities • Response time and quality from the city to citizens proposals • Response time to adopt alternative strategies (critical services) 	<ul style="list-style-type: none"> • Usability and interoperability of indicator systems evidence of co-production in policy (including communities) • Investment by private sector & citizens to resilience budget • Budget for training and learning across cities • Public health indicators (% sick people, integration, education) • Crime rate • Redundancy in all CIs (3x) • Survey on public preparedness • Mapping of interdependencies in terms of vulnerabilities (global) ongoing, all sector regular mechanism to download information

Analyzing all the indicator results, there are some of them that appear along all the stages and they seem important in the evolution of the resilience:

- The budget spent on resilience seems an important indicator, which should increase among the different stages of the maturity model.
- In the same line, the stakeholder's involvement in resilience seems to be a valuable indicator, which should also increase throughout the stages.
- The development and formalization of resilience actions or plans from early stages should increase among the stages.
- Finally, another important indicator should be the creation of a resilience office at early stages.

Summary of the results

One of the main conclusions obtained during these exercises was that there are many policies that are not under the control of the city council but they affect the situation of the society. Moreover, regarding the policies that city representatives can control, it has been proved that a consensus exists among experts in a certain amount of policies. However, there are other policies in which experts do not agree about in which stage each of them should be started being implemented. Nevertheless, there is a tendency to think that some of them should be implemented in the early stages while others in the middle stages of the preliminary maturity model. So the exercise has provided the second indication on the dynamics of building resilience.

Furthermore, this session served us to validate and improve all the stage definitions of the preliminary maturity model. In addition, several indicators of those stages were identified that will be useful in the final maturity model definition. However, there is still a lot of work to do integrating all the new concepts and indicators in the new stage definitions.

Finally, the conclusion related to the organisation of the GMB session is the necessity to provide the experts with the possibility of preparing the exercises that will be carried out in the workshop in advance. During the GMB session the usefulness of having prepared in advanced the exercises was reveal. Furthermore, having one group recorder per small group was useful to better understanding of the whole GMB session.

4. DEBRIEF AND CONCLUSIONS OF THE WORKSHOP

WORKSHOP EVALUATION

EVALUATION OF THE GROUP MODEL BUILDING SESSION

To evaluate the Group Model Building Session, a questionnaire was handed out to the workshop participants. The questionnaire aimed at gathering information to reach conclusions and to identify lessons learnt (Annex VI).

The questionnaire was composed of 15 different statements or questions, which covered:

- General aspects of the second day of the workshop,
- The contents, the environment and the second day workshop setting
- Possible improvements and lessons learnt for future workshops.

For answering the questions, an ordered rating scale from 0 to 5 was offered being 0 low level and 5 high level. In addition, respondents were also asked to make some comments on any further issues about the workshop in an open answer format if needed. The questionnaire form and the average result obtained per each question are provided in the Annex VI and VII.

The questionnaire was given to the 17 experts that participated in the workshop and 14 responses were obtained. This represents a response rate of 82%.

IMPROVEMENTS AND LESSONS LEARNT ON THE GROUP MODEL BUILDING SESSION

According to the answers received from the experts, the exercises carried out during the second day of the workshop were very productive.

Regarding the usefulness of the exercises, experts believed that exercise 3 (definition of the stages) and 4 (identification of indicators) were the most useful exercises (see Annex VII). A reason for this can be that having identified and put together a series of policies in the previous exercise (exercise 1) helped experts to clearly identify the different resilience stages. Regarding the easiness of the exercises, exercise 4 was the easiest exercise to understand for the experts.

Furthermore, it can be concluded from the comments received in the questionnaire that experts were very satisfied with the execution and the results of this workshop

EVALUATION OF THE GROUP EXPLORER SESSION

At the end of the workshop participants were asked to provide feedback on their experience and the usefulness of the session for the project. For this purpose, a similar questionnaire was used to the one which had been distributed to participants in Riga and Bristol (Figure 16). Similar to the two previous sessions, participants generally provided positive feedback on their experience of attending the session (Annex IX, Table 12 and Table 13). For 8 out of 12 questions, the average score was at least 4 out of 5, for 3 questions the average score was between 3.5 and 4.05 (questions 7, 8, and 12), and for 1 question the average score was between 3.0 and 3.5 (question 9).

IMPROVEMENTS AND LESSONS LEARNT ON THE GROUP EXPLORER SESSION

The GE session in Rome both elaborated and built on the findings from the previous WP2 workshops. The consistent focus on the systemicity of risks allowed rich data to be gathered which showed how risks impacted one another, the dynamic feedback relationships between risks, and the range of policies which cities could implement to address them. In addition to this, following the objectives of the session, the topic of human dynamics/social issues was used at the main point of reference. Not only did this topic allow new key risk themes to emerge, but it also helped to refine the existing meta-categories of risks such as health or media.

After merging the obtained causal maps from the three workshops, it will be possible to start working on the draft version of RSQ. The meta-themes of risks will serve as general categories of questions that will give structure to the questionnaire. The networks of ramifications and the feedback loops will help to assign a weighting to respondent's scores, and the range of collected policies will inform the content of the questions so that it will be possible to evaluate cities' preparedness for resilience. It, therefore, can be concluded that the GE session in Rome, as well as those in Riga and Bristol, have met the relevant objectives of WP2, and they provide a solid basis for the forthcoming work in other workpackages, including WP3 where the resilience tools will be developed.

WORKSHOP OUTCOMES

The first outcome of the GMB session is the validation and improvement of all stage definitions of the preliminary maturity model. In addition, a high number of indicators for those stages were identified. However, there is still a lot of work to do integrating all the new concepts and indicators in the new stage definitions.

In the Group Explorer (GE) session in Rome, the material collected in the previous workshops was extended with regards to a new topic, i.e. the human dynamics/social issues. Whilst exploring this new topic, the focus on the systemicity of risks was consistently followed, leading to rich data which showed how risks impacted one another, the dynamic feedback relationships between risks, and the range of policies which cities could implement to address them. These results corresponded with a number of identified meta-themes or risks which stemmed from the analysis, such as: media, health, or migration. Building on the obtained finding, it will be possible to start work on the Risk Systemicity Questionnaire (RSQ), as well as use the results in the construction of other tools in WP3.

Finally, and as a general conclusion, this workshop was helpful for cities to exchange information and best practices between them, learning how other cities are acting in specific social problems. In addition, the cities can see different problems or situations that they have not seen in their cities before, so they can start thinking in how to act before the problems arise.

ANNEX I ROLES AND PARTICIPANTS OF THE WORKSHOP

Institution	Role
TECNUN	Facilitator
TECNUN	Group facilitator
TECNUN	Group recorder
TECNUN	Group recorder
STRATH	GE facilitator
STRATH	GE facilitator
STRATH	GE recorder
CIEM	Gatekeeper/ Group facilitator
CIEM	Group Facilitator
CIEM	Group recorder
ICLEI	Group Facilitator
DIN	Group facilitator/ Group recorder
DIN	Group facilitator/ Group recorder
LIU	Assistant
BRISTOL	Expert
BRISTOL	Expert
KSAND	Expert
KSAND	Expert
VEJLE	Expert
VEJLE	Expert
GLASGOW	Expert
GLASGOW	Expert
ROME	Expert

ROME	Expert
ROME	Expert
ROME	Expert
ROME	Expert
ROME	Expert
ROME	Expert
ROME	Expert
ROME	Expert
SAN SEBASTIAN	Expert
SAN SEBASTIAN	Expert

ANNEX II DESCRIPTION OF THE ROLES

Facilitator: it functions as group facilitator and knowledge elicitor. This person presents the activities that will be carried out during the workshop and pays constant attention to group process, the roles of individuals in the group, and the business of drawing out knowledge and insights from the group.

Gatekeeper: it is responsible for ensuring that the objectives of the workshop are fulfilled. It is a person related to the client group who carries internal responsibility for the project, usually initiates it, helps frame the problem, identifies the appropriate participants, works with the modeling support team to structure the sessions, and participates as a member of the group.

Recorder/Group recorder: it strives to write down or sketch the important parts of the group proceedings. Together with the notes of the modeler/reflector and the transparencies or notes of the facilitator, the text and drawings made by the recorder should allow a reconstruction of the thinking of the group.

Assistant: it is responsible for helping the facilitator during the workshop execution. It is also responsible for taking photos of all the activities developed and the obtained results.

Group facilitator: it is responsible for facilitating the group discussion when experts are working in small groups. It is also in charge of ensuring that the group understands the activity and in case the group needs some help it can provide some guidance to work on.

Expert: it is a person who will participate in the activities that will be developed during the workshop. It is the person who has the expertise and can contribute to the activities of the workshop.

Modeler of Tool X: it is responsible for gathering and sketching the information from the experts in order to develop the model. This person should be constantly looking for evidences and crystallize important aspects that could be used afterwards in the tool development process.

Dissemination activities modeler: it is responsible for gathering information about what kind of dissemination activities cities carry out and what kind of activities SMR should do in order to disseminate the results obtained in the project at different levels: city level, Europe level, in the scientific community etc.

The process coach: a person who focuses not at all on content but rather on the dynamics of individuals and subgroups within the group. It has been both useful and annoying that our process coach is not a system dynamics modeler; such a person can observe unwanted impacts of jargon in word and icon missed by people closer to the field.

WP1 related activities modeler: it is responsible for gathering all the information regarding WP1 that is mentioned during the workshop in order to complete the different resilience approaches that exist.

Standardization activities modeler: it is responsible for gathering information about the different standards and norms that experts mention during the workshops so this information can be used afterwards for developing the CWA.

ANNEX III EXERCISES FOR THE EXPERTS TO PREPARE IN ADVANCE OF THE WORKSHOP

WORKSHOP IN ROME: PREPARATION EXERCISES

The workshop in Rome will be focused on social problems and how these problems can affect the city resilience and as a consequence, the European resilience level. The impact of a disaster on any community is not random; it is determined by the daily circumstances of people living in the area. Actually, social vulnerability is the result of pre-emergency social problems that create a lack of capacity or capability to prepare for, response to, and recover from emergencies⁵. Understanding the relationship between social problems and their impact on cities' resilience is therefore of paramount importance to develop suitable measures that guarantee an acceptable resilience level.

Examples of social problems that will be covered during the workshop are the following:

- **Immigration**
- **Population ageing**
- **Inequality**
- **Vulnerable groups** such as women, children and people with disabilities
- **Health and well-being**
- **Unemployment**
- **Crime rate**
- **Education**

In order to prepare for the activities that we are going to develop during the Rome workshop, we would like you to reflect on the following exercises with your colleagues who have experience in issues related to social problems.

⁵ Martin, S. A. (2015). A framework to understand the relationship between social factors that reduce resilience in cities: Application to the City of Boston. *International Journal of Disaster Risk Reduction*, vol. 12, p. 53-80.

Exercise 1: Identification of policies/actions

Please, identify the actions or policies that you have already implemented in your city and the ones that you would like to implement, in order to diminish the impact of these social problems considering the stakeholders in charge of developing them and the stakeholders involved in the development. The stakeholders that you may consider are the following:

- Multi-level governance (local, regional, international)
- First responders: firefighters, police, civil protection etc.
- Public-private companies
- Citizens
- Academia
- Media

There is an example in blue that you can use it as a reference.

Social problems	Policies	Already implemented or to be implemented in the future?	Stakeholder who leads the policy/action development	Stakeholders involved in the policy/action development
Immigration	<i>Free Movement of Citizens Directive 2004/38/EC</i>	<i>Already implemented</i>	<i>European Economic Area (EEA) countries</i>	<i>EEA politicians and citizens</i>
Population ageing				
Inequality				
Vulnerable groups				
Health and well-being				
Unemployment				

Crime rate				
Education				

Exercise 2: Identification of indicators

Please, identify the indicators that can help to measure each social problem. There is an example in blue that you can use it as a reference.

Social problem	Indicators with units
Immigration	<i>Number of refugees in the city?</i>
Population ageing	
Inequality	

Vulnerable groups	
Health and well-being	
Unemployment	
Crime rate	
Education	

Exercise 3: Identification of barriers

Please, identify the barriers that hamper the development of the policies in order to diminish the impact of the following social problems. There is an example in blue that you can use it as a reference.

Social problems	Barriers
Immigration	<i>Racism</i>
Population ageing	

Inequality	
Vulnerable groups	
Health and well-being	
Unemployment	
Crime rate	
Education	

ANNEX IV SUMMARY OF RESULTS OBTAINED BY EXERCISES COMPLETED PRIOR TO THE WORKSHOP

Before the workshop was held cities were asked to complete an exercise sheet about questions related to social problems. The following examples were given in order to make city representatives reflect about interesting topics related to social dynamics: Immigration, population ageing, inequality, vulnerable groups, health and well-being, unemployment, crime rate and education

The following paragraphs are a brief summary of the results obtained after analysing the exercises completed by cities. In general, cities have similar concerns regarding social problems that affect citizens and barriers they have found to solve them.

Regarding immigration, cities are very aware of the importance of properly welcoming immigrants and giving them the opportunity to introduce them within the community. Some cities give language courses and other promote intercultural promotion to reduce the time needed to fully complete their integration in the city. However, they usually find barriers such as racist behaviour and difficulties to identify non-regulated immigrant population that hampers the integration of the whole immigrant community.

Population ageing is another problem that causes concern among cities. In overall, all cities agree on developing specific policies for this vulnerable group. Increasing the capability of ageing population to live in their own home for a longer time is one of the objectives of cities. Developing e-health technologies could benefit people who want to live on their own for a longer time. Related to this, combating the loneliness and adapting the city to old people, not only the infrastructures but also the intergenerational relationships are also main concerns for cities. However, the budget and the human resources dedicated to these initiatives are limited and moreover, there is elder people that do not ask for help although they need it.

Each of the cities fight against inequalities and protect vulnerable groups using different strategies. Some focus on providing labor integration and training programs or providing economic help while others think that inequality should be tackled from the early beginnings and consequently improving the parental skills of citizens. The most typical barriers in order to prevent inequalities are the lack of funding and the strict legislation that occasionally is too restrictive and leave certain groups with special needs out of the aid system.

Regarding health and well-being, most cities have programs related to drug prevention and healthy lifestyle. They also focus their efforts in improving the quality of life of old people, for instance developing assistive technologies, and also of families with health problems. The most important barrier related to this topic is the lack of funding.

Unemployment is another problem that worries city representatives. As previously mentioned, unemployed people is identified as a vulnerable group and cities are aware of the importance of providing not only economic help but also developing training and labor integration programs that will help citizens to find a job. Youth unemployment is particularly one of the main concerns of cities regarding this topic. However, the economic crisis has have a huge negative impact in this problem and less budget can be dedicated to tackle unemployment.

Crime prevention is a problem that needs to involve not only city representatives but also more stakeholders at regional or national level. There are cities that map critical points of the city to be aware of which are the most dangerous places. Most of them develop educational programs for instance related to gender violence that is still a huge problem in nowadays society. The lack of resources is the most common barrier that cities need to face this problem.

In terms of education, the early drop out of students from schools and promoting educational programs in leisure and cultural facilities to increase the learning environment of students are key for most of the cities. However, and one more time, the lack of budget and of human resources hampers the effective fulfillment of this activities.

ANNEX V AGENDA OF THE WORKSHOP

DAY 1: FEBRUARY 22ND, 2016

Time	Activity	Description
8:50	Meeting point for the SMR Scientific Committee (Piazza San Pantaleo, 10)	
9:00-13:00	Meeting for SMR Scientific Committee	

14:00 -14:15	Welcome	
	<p>-100 Resilient Cities, Mr. Alessandro Coppola – welcome and presentation of 100 RC</p> <p>-Civil Protection, City of Rome, Ms. Cristina D’Angelo: the civil protection system at metropolitan scale;</p> <p>-University of Roma 3, Prof. Simone Ombuen: Charter of climate vulnerability of Rome. Studies for intervention on the Prima Porta district;</p>	Attendants: All
14:15 -16:00	<p>-ENEA, Mr. Vittorio Rosato: Risk analysis systems on infrastructure at national and metropolitan scale;</p> <p>-Social Policies Department, City of Rome, Ms Angelina Di Prinzio: ANTology help different</p> <p>-CARITAS, Ms Anna Clara De Martino, Caritas social and health services aimed at immigrants and internationally protected people of the city of Rome.</p>	
16:00 -16:30	<p>Resilience concepts</p> <p>Responsible: LiU (Attendants: all)</p>	Review of the concepts related to resilience appeared in WP1.
16:30 - 17:00	<p>Meeting to establish roles for next day</p> <p>Responsible: Tecnun</p>	Attendants: SMR Scientific Committee
18.30	<p>Guided tour of the city</p> <p>Responsible: Rome; (Attendants: all)</p>	
19.45	<p>Evening Meal – Ristorante Colosseo (Piazza Colosseo)</p>	

Venue: Palazzo Braschi (Piazza San Pantaleo, 10)

DAY 2: FEBRUARY 23RD, 2016

Venue: Palazzo Braschi (Piazza Navona)

Time	Script	Description
08:30 – 08:45	Welcome/Coffee	
08:45 – 09:15	Introductions	The participants are introduced to the forthcoming activities, to the process used, and to Group Explorer (GE).
	Introduction to the objectives, rough agenda, and time allocations for the day.	All participants are working in pairs. Each pair is given a laptop that enables a pair to display views on a public screen and to the facilitator's computer via a local/private network. Throughout the duration of the workshop, the participants use their laptops to add contributions to the public screen which gradually becomes a shared picture showing causal links between events.
	Introduction to the process that will be used, including the computer system (Group Explorer – GE).	
<i>Stage 1: What are the risks associated with social problems that need to be recognised by organisations in your city/region in order to be resilient?</i>		
09:15 – 09:45	The participants add their statements to the screen with respect the given question (as in the title of this stage).	The participants are asked to type on their laptops brief statements expressing the outcomes they might expect from incidents related to social problems.
09:45 – 10:15	How do these risks interact with each other? (Both at the city level and at the European level).	In this activity the participants will link the statements on the map in terms of their causality, e.g. event X is likely to lead to (causes) event Y. Expected result: initial causal map on the public screen. The objective is to explore the ramifications of possible social problem events that are expected to impact the running of a city and region.
10:15 – 10:30	Coffee break	Facilitators analyse results and prepare for next steps.
10:30 – 11:00	[continued] How do these risks interact with each other?	As in the previous activity.

11:00 – 11:30	Preference activity: Which clusters of outcomes are most critical to the future of the city/region?	At this stage it will be possible to identify a number of thematic clusters of statements, e.g. these can be different areas of risks related to social problems. The participants will use the computer system to prioritise which clusters they take to be the most important in terms of their impact on the city/region.
<i>Stage 2: What are the ramifications of the identified networks of risks associated with social problems?</i>		
11:30 – 12:30	The participants add their statements and links to the screen with respect the given question (as in the title of this stage).	Building on the previous preferencing activity, the participants are invited to elaborate the most highly prioritised clusters of events with respect to their ramifications.
12:30 – 13:30	Lunch break.	Facilitators analyse results and prepare for next steps.
<i>Stage 3: What policies can be implemented to both mitigate the risks and to adapt to their ramifications? And Stage 4: What are the unintended consequences that derive from the policies which are aimed at risks related to social problems?</i>		
13:30 – 15:00	Elaborate the most critical risk clusters (as identified in the previous activities) through consideration of structures/systems/policies that could be used to mitigate the risk stories and to adapt to their ramifications.	In this part of the workshop participants are asked to explore the expected outcomes from possible response policies related to social problems, with a particular focus on exploring UNINTENDED consequences. The participants are asked to consider the possible trade-offs, synergies and conflicts between the suggested policies.
15:00 – 15:15	Coffee break	Facilitators analyse results and prepare for next steps.
15:15 – 16:45	Continue exploring policies.	
16:45 – 17:00	Wraps-up of the session.	Printout will be provided throughout when reaching milestones in the workshop

Time	Script
20:00	Ristorante SS.Quattro (Via Dei SS Quattro)

DAY 3: FEBRUARY 24TH, 2016

Venue: la Casa della Città (Piazza Giovanni da Verrazzano, 7)

Participants: All

Time	Script	Description
08:30 – 09:00	Welcome/Coffee	
	Overall introduction to the project	The participants are introduced to the project
	Participants' self-presentations	
	Introduction to the objectives, rough agenda, and time allocations for the day.	
<i>Stage 1: Consolidation of policies</i>		
09:00 – 09:45	Consolidation of policies	Work in small groups.
09:45 – 10:30	Plenary presentation of policies/actions	Plenary session.
10:30 – 10:45	Coffee break	.
<i>Stage 2: Temporal order of policies</i>		
10:45 – 11:30	Temporal order of policies	Work in small groups.
11:30 – 12:15	Plenary presentation of temporal order of policies	Plenary session.
12:15 – 12:30	Stage 1 and 2 Wrap up	.
12:30 – 13:30	Lunch	
<i>Stage 3: Definition of SMART stages</i>		
13:30 – 14:15	Definition of SMART stages	Work in small groups
15:00 – 15:15	Plenary presentation of definition of SMART stages	Plenary session
15:15 – 15:30	Coffee break.	
<i>Stage 4: Indicators: amount of policies, results, resilience indicators, benchmark</i>		
15:30 – 16:15	Indicators: amount of policies, results, resilience indicators, benchmark	Work in small groups

16:15 – 17:00 Plenary presentation of *Indicators: amount of policies, results, resilience indicators, benchmark* Plenary session

17:00 – 17:15 Final wrap up.

Time	Script
20:00	Ristorante TramJazz (Piazza di Porta Maggiore)

DAY 4: FEBRUARY 25TH, 2016

Venue: la Casa della Città (Piazza Giovanni da Verrazzano, 7)

Participants: All

Time	Script	Description
09:30	Welcome	
09:30 – 10:15	Workshop debrief Responsible: Tecnun Attendants: All	Debrief about the workshop
10:15 - 11:00	Steering committee Responsible: WP leaders Attendants: All	Steering Committee meeting. Analysis of WP evolution
11:00 - 11:15	Coffee break	
11:15 - 11:45	WP6 session Responsible: DIN Attendants: All	
11:45 – 12:30	WP4 & WP5 session Responsible: CIEM and ICLEI Attendants: All	Explanation of the survey carried out in WP4 (CIEM, Tecnun, ICLEI) Explanation of Kick Off meeting in Kristiansand (ICLEI)
12:30– 13:00	WP1 session Responsible: LiU & TECNUN Attendants: All	Explanation of next activities of WP1 and Delphi process
13:00	Lunch to eat or take away (for those heading off earlier).	

ANNEX VI EVALUATION QUESTIONNAIRE (GROUP MODEL BUILDING SESSION) WORKSHOP IN ROME: DAY 3 QUESTIONNAIRE

Please answer the follow questions about the workshop. Please evaluate from 0 to 5, 0 being not at all and 5 very good.

Please, select one of the following options based on your role at the workshop

☐

City representative

☐

Academic representative

Evaluate from 0 to 5...	Not at all very					
	0	1	2	3	4	5
1. How good were the clarity of the explanations of the exercises provided by the facilitators of the workshop?						
2. How helpful or useful was the support provided by the small group facilitators?						
3. Was the given time enough to develop the exercises?						
4. How useful was preparing the exercises in advance?						
5. How useful was exercise 1 (consolidation of policies)?						
6. How easy was exercise 1 (consolidation of policies)?						

7. How useful was exercise 2 (temporal order of policies)?						
8. How easy was exercise 2 (temporal order of policies)?						
9. How useful was exercise 3 (definition of SMART stages)?						
10. How easy was exercise 3 (definition of SMART stages)?						
11. How useful was exercise 4 (Indicators: amount of policies, results, resilience indicators, benchmark)?						
12. How easy was exercise 4 (Indicators: amount of policies, results, resilience indicators, benchmark)?						
13. How useful were the small group exercises?						
14. How useful were the plenary exercises?						
15. How would you rate the overall methodology?						

Comments:

ANNEX VII SUMMARY OF THE ANSWERS OBTAINED IN THE QUESTIONNAIRE (GROUP MODEL BUILDING SESSION)

Questions	Average	St deviation
1. How good were the clarity of the explanations of the exercises provided by the facilitators of the workshop?	3,27272727	1,19087439
2. How helpful or useful was the support provided by the small group facilitators?	3,81818182	0,75075719
3. Was the given time enough to develop the exercises?	3,27272727	1,27207776
4. How useful was preparing the exercises in advance?	3,45454545	1,21355975
5. How useful was exercise 1 (consolidation of policies)?	2,36363636	1,12006493
6. How easy was exercise 1 (consolidation of policies)?	2,36363636	1,28629136
7. How useful was exercise 2 (temporal order of policies)?	2,81818182	1,07871978
8. How easy was exercise 2 (temporal order of policies)?	2,81818182	1,07871978
9. How useful was exercise 3 (definition of SMART stages)?	3,27272727	1,27207776
10. How easy was exercise 3 (definition of SMART stages)?	3,18181818	1,25045446
11. How useful was exercise 4 (Indicators: amount of policies, results, resilience indicators, benchmark)?	4,09090909	0,70064905
12. How easy was exercise 4 (Indicators: amount of policies, results, resilience indicators, benchmark)?	3,54545455	1,12815215
13. How useful were the small group exercises?	3,63636364	0,92441628
14. How useful were the plenary exercises?	3,72727273	0,78624539
15. How would you rate the overall methodology?	3,54545455	0,82019953

Comments	
Comment 1	The first part was unstructured and not very clear.

Comment 2	I'm sure you are aware of the problems with the morning exercise and will adapt accordingly.
Comment 3	Consolidation of the policies needed much more time. I dont think we have the right policies and would like to explane and more or less agree thus more time is needed. Moreover, more time is also needed to share current best practices among cities.
Comment 4	Some exercises try to do 2 steps in one. It is needed to do a filtering first to remove inaccuracies. Still doesnt have a sense on how all work fit together. Timeline for leeding Bristol's expertise into key stages.

ANNEX VIII EVALUATION QUESTIONNAIRE (GROUP EXPLORER SESSION)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
1. The facilitators appropriately communicated what was expected from the participants at each stage of the session.					
2. The facilitators provided an appropriate amount of support throughout the session.					
3. The pace of the session was appropriate to the purpose.					
4. I had a good opportunity to express my own views so that they could be seen by all others present.					
5. It was useful to see my views in the context of the views of others.					

6. It was useful to see the causal network gradually developing on the screen.					
7. Anonymity between contributor teams was useful.					
8. The workshop allowed for the creation of knowledge by the group. New insights were developed through the linking of perspectives.					
9. The workshop helped me to change my understanding of the resilience issues in relation to social problems.					
10. The workshop made an appropriate contribution to the development of the H2020 project objectives .					
11. It was helpful to get copies of a record of the workshop (the network of contributions) as we progressed and on request at the end.					
12. The overall format of the session was useful to me in my organizational role .					

Please add here some additional comments:

Figure 16: Participant questionnaire

ANNEX IX EVALUATION QUESTIONNAIRE (GROUP EXPLORER SESSION)

Table 12: Participant questionnaire results - part 1

Questions	Participants													
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14
Q1 The facilitators appropriately communicated what was expected from the participants at each stage of the session.	4	4	4	3	4	4	4	4	4	4	4	4	5	4
Q2 The facilitators provided an appropriate amount of support throughout the session.	4	4	4	4	4	4	5	4	4	5	4	4	5	5
Q3 The pace of the session was appropriate to the purpose.	4	4	4	3	4	4	4	4	4	4	5	4	5	4
Q4 I had a good opportunity to express my own views so that they could be seen by all others present.	4	4	4	3	4	5	5	4	4	5	5	5	5	4
Q5 It was useful to see see my views in the context of the views of others.	5	5	5	5	4	5	5	3	4	4	4	5	5	5
Q6 it was useful to see the causal network gradually developing on the screen.	5	4	4	4	4	4	5	4	4	5	4	5	5	5
Q7 Anonymity between contributor teams was useful.	4	3	3	2	4	5	5	3	4	4	2	3	3	5
Q8 The workshop allowed for the creation of knowledge by the group. New insights were developed through the linking	3	4	3	3	4	4	4	2	4	3	3	4	5	4
Q9 The workshop helped me to change my understanding of the resilience issues in relation to social problems.	3	4	3	2	4	3	4	2	3	2	2	4	4	3
Q10 The workshop made an appropriate contribution to the development of the H2020 project objectives.	4	4	4		4	4	4	3	4		4	5	5	5
Q11 It was helpful to get copies of a record of the workshop (the network of contributions) as we progressed.	4	4	4	5	4	3	4	4	3	5	3	4	3	4
Q12 The overall format of the session was useful to me in my organization role.	4	5	4	4	4	4	4	4	4	5	5	4	5	3
Average (individual participants)	4.00	4.08	3.83	3.45	4.00	4.08	4.42	3.42	3.83	4.18	3.75	4.25	4.58	4.25
St dev.	0.60	0.51	0.58	1.04	0.00	0.67	0.51	0.79	0.39	0.98	1.06	0.62	0.79	0.75

Comments

- Participant 7: Validation of insights generated in workshops needed appropriate experts - assume this function of RSQ?

- Participant 8: The last session didn't work as well as the previous stages. I think more time might have been spent giving people to talk through their policy/strategy ideas with the rest of the group.
- Participant 9: The session is a good exercise. However the group became tired towards the end + possibly did not explore the policies as much as we could. As policies are very important it would have been good to spend longer on this section (possibly tomorrow).
- Participant 10: Very interesting day - well paced and structured - final result does however identify a lack of understanding of the realities of austerity with which we work - I hope to be able to explore this in day 4.
- Participant 11: Good.

**Table 13: Participant questionnaire results - part 2**

	Rome - results	
	Average (overall questions)	St dev.
Q1	4.00	0.39
Q2	4.29	0.47
Q3	4.07	0.47
Q4	4.36	0.63
Q5	4.57	0.65
Q6	4.43	0.51
Q7	3.57	1.02
Q8	3.57	0.76
Q9	3.07	0.83
Q10	4.17	0.58
Q11	3.86	0.66
Q12	4.21	0.58

ANNEX X: RESULTS OF PREFERENCING ACTIVITY 1

Preferencing 1: assessing key resilience themes	
green blobs = city preparedness	total
happiness and good quality of life	7
access to free, quality, education	7
under employment and short term '0 hour' contracts	6
lack of educational offers	5
increasing crime	5
poor access to affordable housing	4
youth unemployment	3
uncontrolled immigration	3
disempowerment of citizens	3
ageing population	2
welfare system under pressure	1
urban poverty	1
high rising inequalities	1
loneliness and isolation	0
increasing issues relating to mental health	0
digitalization and the risk of marginalization	0
red blobs = significance of the themes	total
ageing population	11
loneliness and isolation	8
increasing issues relating to mental health	6
welfare system under pressure	5
poor access to affordable housing	3
digitalization and the risk of marginalization	3
youth unemployment	3
high rising inequalities	3
under employment and short term '0 hour' contracts	3
uncontrolled immigration	2
urban poverty	2
disempowerment of citizens	1
happiness and good quality of life	1
increasing crime	0
lack of educational offers	0
access to free, quality, education	0

ANNEX XI: RESULTS OF RATING ACTIVITY

1

Rating 1: what are the most challenging risks?	average	st dev
high rising inequalities	80.00	24.66
increasing issues relating to mental health	72.14	14.68
loneliness and isolation among all people	65.71	32.71
refugees lacking social relations	62.14	23.07
challenge of reducing social cohesion and integration o	55.00	32.27
alcohol and drug abuse	55.00	21.79
youth unemployment	53.43	33.48
burnout	51.43	31.05
decreased productivity and sickens from work	48.57	19.73
loss of neighbourhood feeling	43.57	24.95
digitalization and the risk of marginalization	40.00	35.94
increased pharma prescribing	39.29	25.89
bullying	35.00	21.98
gang culture	13.57	17.01

ANNEX XII: RESULTS OF RATING

ACTIVITY 2

Rating 2: what's the probability of impact increasing significantly?	average	st dev
challenge of reducing social cohesion and integration of communities	78.57	23.58
loneliness and isolation among all people	70.00	23.98
high rising inequalities	65.71	29.36
alcohol and drug abuse	62.00	27.07
increased pharma prescribing	59.29	17.90
digitalization and the risk of marginalization	54.29	21.68
increasing issues relating to mental health	53.57	23.93
loss of neighbourhood feeling	51.43	32.24
decreased productivity and sickness from work	49.29	24.74
bullying	43.57	18.64
burnout	40.00	26.61
refugees lacking social relations	39.29	37.58
youth unemployment	37.86	32.39
gang culture	25.00	35.71

ANNEX XIII: ASSESSING IMPACT X PROBABILITY BASED ON RATING ACTIVITY RESULTS

Rating activity: assessing impact x probability	score
high rising inequalities	5257
loneliness and isolation among all people	4600
challenge of reducing social cohesion and integration of communities	4321
increasing issues relating to mental health	3865
alcohol and drug abuse	3410
refugees lacking social relations	2441
decreased productivity and sickens from work	2394
increased pharma prescribing	2329
loss of neighbourhood feeling	2241
digitalization and the risk of marginalization	2171
burnout	2057
youth unemployment	2023
bullying	1525
gang culture	339

ANNEX XIV: ASSESSING THE RESILIENCE STRATEGIES – PRACTICALITY

Assessing the resilience strategies - practicality	
<i>green blobs = practical strategies (practical world)</i>	total
support lots of local citizen initiatives	4
build up local networks between citizens, companies and public authorities	3
creative fund raising strategies to support community-social initiatives	3
pilot different models for affordable living	3
map all municipal functions to make better and more cost effective choices	2
everyday home rehabilitation for + 65	2
30 hour week to increase employment opportunities and reduce stress	2
promote proactive health actions	2
collaborative budgeting across public agencies	2
promote money flow surveillance	1
simplify taxation system to avoid holes	1
public action to regulate the access to dwellings	1
empower women pension funds	1
devolution and meaningful local tax raising powers	1
microcredit to fight poverty	1
coordination of voluntarily organizations towards municipal goals	1
public strategies to build an urban environment where economic activities flourish	1
personalized approaches instead of 1 size fits it all	1
perpetual beta solution approach	1
public support and assistance in business creation and their maintenance	1
focus on a culture of knowledge and respect of the different	1
forbid rental contracts	0
forbid to exit the public health system	0
train up volunteer counsellors	0
build up trust	0
peer to peer lending within communities	0
encourage participation of women to development of social micro enterprises	0
help volunteers with resources	0
early stage crime prevention	0
control property by taxation (against the super-rich)	0
increased competence to the public to prevent inequalities	0
less (or no) taxation of poor and middle class	0
invest in key services and infrastructure to save in longer-term	0
decrease legislation on business creation	0
public sector services	0

ANNEX XV: ASSESSING THE RESILIENCE STRATEGIES – LEVERAGE

Assessing the resilience strategies - leverage	
<i>blue blobs = leverage (ideal world)</i>	total
support lots of local citizen initiatives	3
build up trust	3
map all municipal functions to make better and more cost effective co	2
build up local networks between citizens, companies and public auth	2
creative fund raising strategies to support community-social initiative	2
everyday home rehabilitation for + 65	2
coordination of volentarily organnizationa towards municipal goals	2
less (or no) taxation of poor and middle class	2
decrease legislation on business creation	2
forbid rental contracts	1
forbid to exit the public health system	1
train up volunteer counsellors	1
devolution and meaningful local tax raising powers	1
peer to peer lending within communities	1
encourage participation of women to development of social micro an	1
early stage crime prevention	1
control property by taxation (against the super-rich)	1
30 hour week to increase emplyment opps nand reduce stress	1
personalized approaches instead of 1 size fits it all	1
pepetual beta solution approach	1
public support and assistance in business creation and their mainten	1
invest in key services and infrastructure to save in longer-term	1
collabortive budgeting across public agencies	1
focus on a culture of knowledge and respect of the diferent	1
promote money flow surveillance	0
simplify taxation system to avoid holes	0
publicaction to regulate the access to dwellings	0
empower women pension funds	0
help volunteers with resources	0
microcredit to fight poverty	0
public strategies to built an urban environment where economic activ	0
promote proactive health actions	0
pilot different models for affordable living	0
increased competence to the public to prevent inequalities	0
public sector services	0