TeRRIFICA

Territorial RRI Fostering Innovative Climate Action

Guide on engagement and co-creation

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Analysis of case studies on effective practices in community-academia partnerships and their success factors.

Free download is available on our project website!

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FIRST WORDS

1. FIRST WORDS

1.1 TeRRIFICA – fostering co-creation to tackle climate change

TeRRIFICA, standing for Territorial Responsible Research and Innovation Fostering Innovative Climate Action, is a European project aiming at developing Innovative Climate Action through stakeholder engagement and co-creation.

In detail, TeRRIFICA's goal is to identify and develop innovative actions to mitigate or adapt to climate change. For this, a variety of actors from politics, science, businesses, education and civil society organizations will take part in developing action plans at local levels. Finally, the results will be transferred to other regions in Europe, while different formats ensure to broaden the experience by involving a wide range of stakeholders.

The TeRRIFICA method is to develop co-creation processes in six European pilot regions[1]: scientists, civil society organizations, policy-makers, education actors and businesses are working together to co-design, co-create knowledge, and co-experiment solutions addressing experienced climate change effects. The pilot regions are seen as "living labs", as the thinking and experiences are continually evolving.

Stakeholders' engagement and co-creation are at the heart of TeRRIFICA, as we believe involving people who are directly affected will not only foster multiple innovative formats, but will also ensure sustainable and transferable results.

1.2 Why a guide on engagement and co-creation for climate mitigation and adaptation measures?

Multi-stakeholder engagement processes and co-creation activities have major advantages: they produce results that are truly adapted to the reality of concerned people and thus allow more sustainable changes.

Involving stakeholders to develop innovative climate mitigation and adaptation actions is even more relevant as climate change is obviously global, but also highly contextualized, local and often requires changes in the society[2].

However, co-creation between various stakeholders is not an easy path. The literature already identifies many barriers to advanced multi-stakeholder collaboration[3]. And addressing the topic of climate change may also add to the complexity – for example, the belief that climate change may seem too big to get involved. Thus, TeRRIFICA focuses on involving stakeholders via their own experience with climate change effects as an approach to break down the complex topic.

The guide therefore aims to:

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[1] In Belarus, France, Germany, Poland, Serbia and Spain.

[2] Gardner, J, Dowd, A-M., Mason, C. and Ashworth, P. (2009). *A framework for stakeholder engagement on climate adaptation.* CSIRO Climate Adaptation Flagship Working Paper No.3. http://www.csiro.au/resources/CAF-working-papers.html.

[3] See for instance: Sciences Citoyennes, « La recherche participative comme mode de production de savoirs. Un état des lieux des pratiques en France », *report coordinated by* STORUP Bérangère, 2016, 94p. https://sciencescitoyennes.org/wp-content/uploads/2013/05/FSC-recherche_participative-FdF.pdf

- Foster stakeholders' engagement and co-creation within the context of climate mitigation and adaptation.
- Provide some (non-)prescriptive ideas, recommendations and methodologies – they are a "starting point" to help stakeholder engagement and co-creation processes within climate change policy-making in the pilot regions.
- Disseminate "good practices", i.e. some methodologies and experimentations that may be transferable to other regions in Europe to co-create measures tackling climate change.

1.3 What is engagement? What is co-creation?

In TeRRIFICA, Responsible Research and Innovation (RRI) is seen as a tool to adapt to and mitigate the effects of climate change. To be exact, TeRRIFICA works to include a more inclusive Responsible Research and Innovation environment to society, involvement of citizens in agenda-setting processes corresponding to climate challenges at the level of the pilot regions, creation of new tools for governance innovation and decision-making processes for climate change.

"*RRI seeks to bring issues related to research and innovation into the open, to anticipate their consequences, and to involve society in discussing how science and technology can help create the kind of world and society we want for generations to come*[4]." RRI includes five "building blocks": public engagement, open access, gender equality, ethics, and science education. A sixth block, governance, is seen as an umbrella.

Co-creation is definitely a crucial way for implementing RRI as "*people increasingly acknowledge that local, experiential or applied knowledge can enrich the quality and impact of investigations. The work is more responsive, socially relevant and connected to affected communities*[5]".

In this guide, we follow the definition of stakeholders' engagement proposed by Gardner *et al.* (2009): "*the expression* "stakeholder" *is used to describe anyone with an interest in a particular decision. (…) The term* "stakeholder engagement*" is used to describe any process that involves stakeholders in some form of collaborative effort directed towards a decision, which might involve future planning and/or behaviour change*[6]."

Although stakeholders' engagement implies some form of participation, co-creation refers to a higher degree of stakeholders' involvement in the process of producing knowledge, defining and implementing activities, solutions or projects.

As Tandon *et al.* (2016) explain: "*Engagement is the process of building relationships with people and putting those relationships to work to accomplish shared goals, i.e. involving those who are at the heart of the change we wish to see. Achievement of excellence in such engagement practices can be through a high quality of work in conducting research,*

Stakeholder engagement means "*any process that involves stakeholders in some form of collaborative effort directed towards a decision, which might involve future planning and/or behaviour change.*" GARDNER et al. (2018)

[4] https://www.rri-tools.eu
[5] Durose C., Perry P., Richardson L., « Craft metrics to value co-production », *Nature,* vol. 562, Oct. 2018, p.33
[6] Gardner, J, Dowd, A-M., Mason, C. and Ashworth, P. (2009). *A framework for stakeholder engagement on climate adaptation*. CSIRO Climate Adaptation Flagship Working Paper No.3. http://www.csiro.au/resources/CAF-working-papers.html.

building partnerships, and co-constructing and mobilising knowledge for achieving sound impact[7]."

Indeed, stakeholders may be engaged through communication, consultation, but also through more participatory means: the co-creation of research and innovation, which includes the co-production of knowledge at each steps of the research process, or even the co-decision of policies.

FIGURE 2   *Eight Rungs on a Ladder of Citizen Participation*
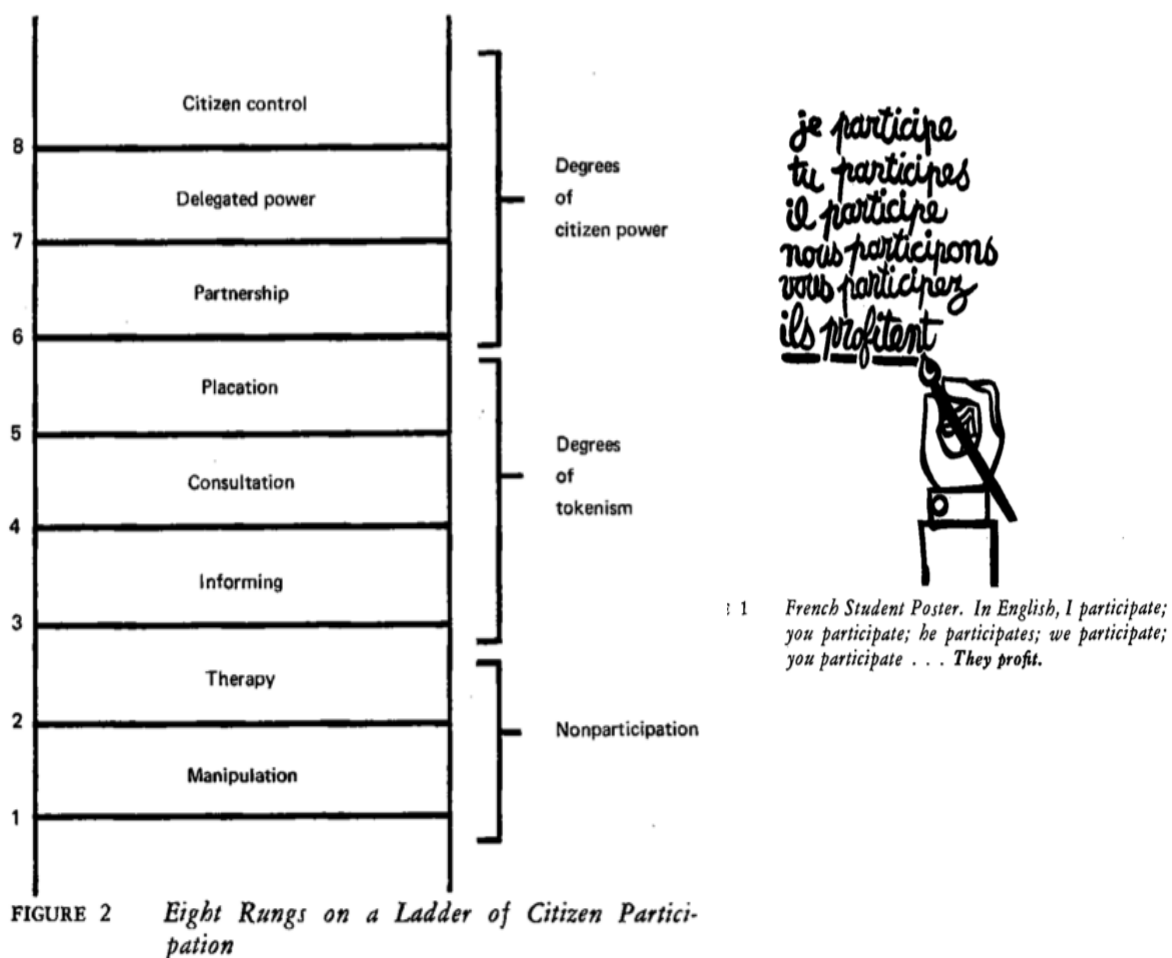
Figure 1: Arnstein, *A ladder of participation,* 1969. Arnstein categorised different participatory processes regarding the degree of participation and citizen power: "*My answer to the critical* what *question is simply that citizen participation is a categorical term for citizen power.*" […] "*There is a critical difference between going through the empty ritual of participation and having the real power needed to affect the outcome of the process.*"

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[7] Tandon R., Singh W., Clover D., Hall B., *Knowledge Democracy and Excellence in Engagement*, IDS Bulletin Vol. 47 No. 6 December 2016: 'Engaged Excellence'; DOI: http://dx.doi.org/10.19088/1968-2016.197

The degree of participation is a criterion that allows classifying different models of citizens' participation in science, on the model of citizens' participation in democracy classification such as the Arnstein ladder of political participation[8]. Arnstein describes a first symbolic participation degree – informing or consulting – that could be compared to citizen science approaches where citizens participate in a pre-defined and designed
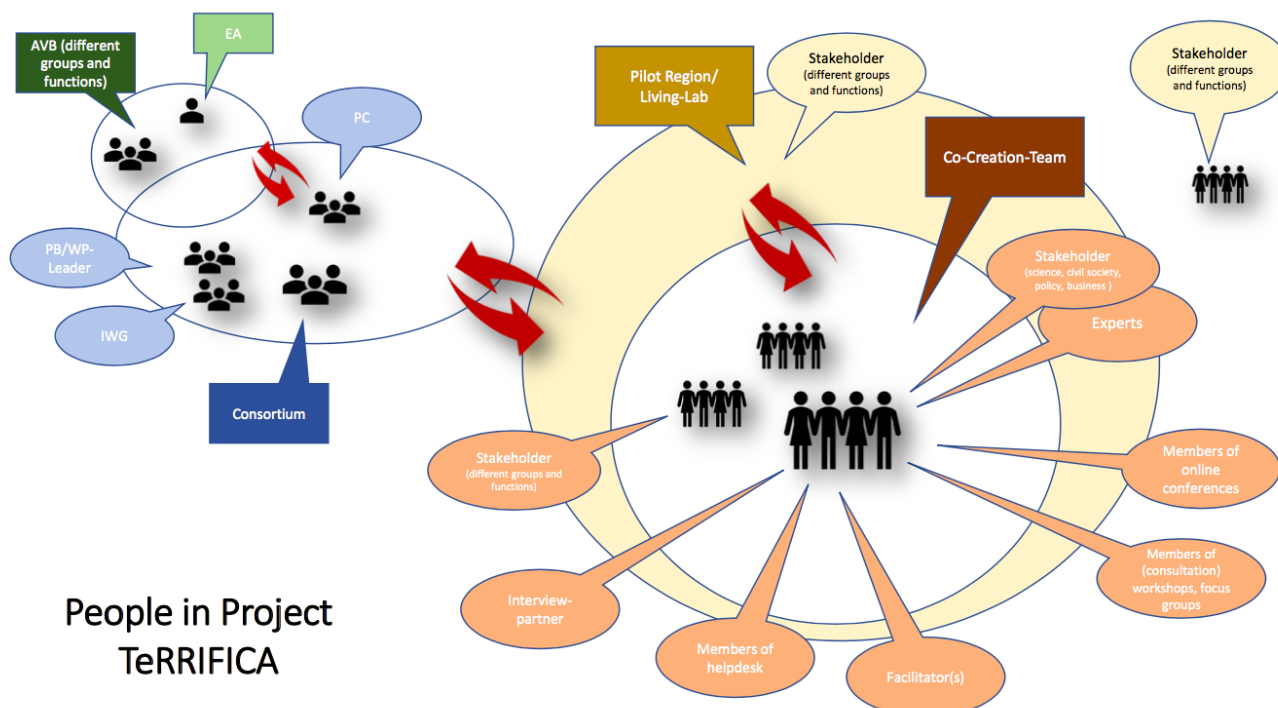

Figure 2: TeRRIFICA organization among different kinds of stakeholders and partners. *AVB: Advisory and Valorisation Board; EA: Ethic Advisor; PC: Project Coordinator; PB/WP Leader: Project Board/Work Package Leader; IWG: Innovation Working Group*

model. Higher levels of participation correspond to power delegation or citizen control, which tends to match with co-creation of knowledge that implies a power shared between stakeholders – whether there are researchers, NGOs employees, inhabitants or students – from the very beginning of the project and at every step.

For a more recent approach, co-production of research is described by Coldham (2018) as "*research in which the decision-making is jointly owned by both researchers and the public, who work together to achieve a shared understanding. That might mean deciding what the actual research is about, but also understanding that we have positions of power because of the jobs we have or don't have. It's about getting everybody around the table so you're valuing the knowledge everybody has[9]*".

In the context of a research, a project, an activity, a policy making process, co-creation is a process in which all stakeholders share the same level of decision-power from the beginning of the process, at every steps and until the end.

[8] Arnstein, Sherry R. (1969) « A Ladder Of Citizen Participation, Journal of the American Planning », *Association*, 35: 4, 216 — 224
[9] Jack Leeming, « Meet the co-pro maestro », *Nature,* Oct. 2018 https://www.nature.com/articles/d41586-018-06926-9 03 October 2018

TeRRIFICA is about engaging stakeholders in order to reach a high degree of citizen participation into science, that is to say co-create, in order to tackle climate change. However, behind these concepts, there is a huge diversity of practices and realities.

1.4 Stakeholder involvement and co-creation at the heart of TeRRIFICA Project

Within TeRRIFICA, different means of stakeholders' involvement can be considered: for example, the co-creation core group consists in stakeholders directly involved; other stakeholders are participating through consultation workshops, trainings or are involved as "experts"; a wider public is targeted through crowd mapping and summer schools.

TeRRIFICA partners were aware of the specific challenges of stakeholder engagement and co-creation. Therefore, the project put in place structures to help pilot regions in their co-creation activities (see Figure 2).

Pilot regions are seen as living labs: In TeRRIFICA a Living Lab is understood as a pilot region where stakeholders – science and academia, education, civil society, policy makers and business – are working together to develop and experiment co-created activities addressing experienced climate change.

A "helpdesk" to allow a feedback loop: A Living Lab is "living" because it experiences and further develops methodologies evolving thanks to feedback loop processes. The co-creation team and other stakeholders send their feedbacks to the helpdesk members; they reflect on best practices and suggest updated methodologies; after experimenting new methodologies, the co-creation team send their feedbacks and suggestions to the helpdesk.

A facilitator to bring reflexivity and ensure the co-creation process: A facilitator is either an individual or a group, who is an interface between the co-creation team and external actors. The facilitator does not intervene in the project activities themselves, but ensures the collaboration between partners – from the definition of the objectives and the distribution of roles, to the production and usage of results.

1.5 Pilot regions – living labs of stakeholders' engagement and co-creation to foster climate mitigation and adaptation action

Figure 3: Main TeRRIFICA active regions

The six pilot regions - in Belarus, France, Germany, Poland, Serbia and Spain (see Figure 3) - play a very special role in this process, because they are the ones who initially test and evaluate the climate adaptation measures directly with local citizens.

The pilot regions have been carefully chosen to compose a significant panorama of the future adaptability of the results, measures, actions, recommendations and any output from the TeRRIFICA project. Each region or city has its own characteristics and features, facing

different climate change challenges and stakeholders configurations.

TeRRIFICA operates in a metropolitan area like Barcelona, in capital and major cities like Belgrade, Minsk, Paris and Poznan, in the agricultural region of Vechta and Cloppenburg, and rural regions like Brittany, Normandy and Pays de la Loire with certain similarities in geography and climate (Spain-Serbia, Poland-Belarus, France-Germany). There are differences in the countries in terms of scientific potential, infrastructure and different stages of transformation – these differences will influence TeRRIFICA's activities. TeRRIFICA will benefit from the exchange between different cultures and their values.

Belarus – Minsk Pilot region

Minsk is the tenth most populated city (excluding the suburbs) in Europe and the largest industrial city of Belarus. It is located at the intersection of transport corridors linking Russia with Poland and Ukraine with the Baltic states. The hydro-meteorologists say that transport is the largest harmful emissions source in the city. But along it there are significant emissions from housing and production of electricity. The most polluted areas of the city of Minsk are primarily the Zavodskoy and Partizansky districts, and the Shabany microdistrict, where most of the factories are located. More than 35% of the territory of Minsk is in "grey" zones. And by unfavorable weather conditions, rainfalls scarcity or heat waves, the impact of pollution on the health of inhabitants is increasing.

At the moment the Minsk City Executive Committee with the support of the European Bank for Reconstruction and Development as well as Belarusian expert NGO "Interaczija" are developing a climate-neutral city strategy "Green plan", which has to be approved by the end of 2019.

France – Brittany, Normandy and Pays de la Loire Pilot regions

The French pilot regions of Brittany, Normandy and Pays de la Loire are particularly vulnerable to some climate change effects due to several specificities, including the urbanized and touristy littoral, the Loire River Valley and the weight of maritime and farming activities in the economy of the region.

The coastal location of the regions is putting the regions at risk of sea rise, coastal erosion, but also marine pollution (e.g. alga proliferation in Brittany) or fishing resources depletion. Climate Change may also provoke flooding or very low water levels during drought periods around the Loire River valley. Farming activities may be particularly impacted by climate change mainly because of droughts or weather deregulations or due to parasites and biodiversity depletion, whilst hedgerows and trees around farms have been declining since the 1950's and organic farming is not yet very developed in the regions. Meanwhile, urbanized areas are vulnerable to sanitary crises, especially due to heat waves and air pollution.

At the national level, several plans are meant to tackle climate change:

- The National Plan for Climate Change Adaptation. The second version has been released in December 2018 for the period 2018-2022;
- The National Strategy Low Carbon, has been adopted in 2015. Through this strategy, France has committed to decrease by 75% its Greenhouse Gas Emissions by 2050 compared to 1990 levels. The

strategy is currently revised, the second version is supposed to be adopted in 2019 and will aim for carbon neutrality in 2050.

- The Climate Plan introduces the vision and actions program of the current Government.

There are other national strategies indirectly linked to climate change mitigation or adaptation that may be important for pilot regions activities, such as the Plan for the development of Agroforestry.

At the local level, there are different institutional frameworks for transition regarding climate change: for instance at the inter-communal levels, local authorities had to develop by 2016 or 2018 Territorial Energy Air and Climate Plans, including objectives of climate mitigation and adaptation, objectives for renewable energies and reduction of pollution.

Germany – South Oldenburg: Vechta and Cloppenburg Pilot region

In the rural area of the Oldenburger Muensterland agriculture is one of the most important economic sectors. Thus, the extreme heat waves as well as intense rainfalls are the key climate challenges in the region. Consequently, the farmers but also all other inhabitants suffer from serious droughts but also from floods in certain areas. The region consists in two counties with several cities and municipalities. Every county has its own county council. On city and municipality level there are also councils. In several cities and municipalities but also at the level of the two county councils climate protection strategies have already been developed or are on the way to be developed. Right now, the implementation of actions and projects is intensified. This is supported by the fact that the issue of climate change is figuring more prominently on the agendas, especially of the political parties.

Poland – The Poznań agglomeration Pilot region

Poznan agglomeration is comprised of Poznań and the 17 neighbouring communes forming a system of two rings surrounding the city and is characterised by a highly urban character of outlying areas, huge demographic potential, dynamic economy, established transportation network and a high level of attractiveness for tourism.

In climate policy, the most important documents are the Urban Climate Adaptation Plan, Low-carbon Economy Plans and partially Environmental Protection Programmes. Present challenges in the context of climate change mitigation and adaptation are the following:

- high concentrations of PM10 and PM 2,5[10] and harmful effects of smog (air quality);
- rainwater and meltwater management;
- spatial planning - supporting investments in green infrastructure.

The following actions are planned to reduce the negative effects of climate change and to adapt to them:

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[10] "PM stands for particulate matter (also called particle pollution): the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope. Particle pollution includes:
- PM_{10} : inhalable particles, with diameters that are generally 10 micrometers and smaller; and
- $PM_{2.5}$: fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller." https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM

- reducing CO$_2$ emissions in Poznan Agglomeration, improving air quality, implementing of a low-emission economy;
- information and education activities aimed at raising the climate change awareness among citizens;
- establishing cooperation between stakeholders involved in climate actions;
- new investments in developing/protecting green areas or "grey" solutions;
- implementation of nature-based solutions (NBS) into urban planning.

Serbia – Belgrade Pilot region

The Republic of Serbia is a party to the UN Framework Convention on Climate Change and the Kyoto Protocol (the law ratifying the Kyoto Protocol to the United Nations Framework Convention on Climate Change – Official Gazette of RS, 88/07) with the status of a "Non- Annex I Party". The Republic of Serbia is developing the Third National Communication. At the same time, the procedure for drafting the Climate Change Law and the "Climate Strategy and Action Plan[11]" are underway.

In full awareness of these national policy, the City of Belgrade developed "Climate Change Adaptation Action Plan with Vulnerability Assessment" as a document which has been adopted by the Belgrade City Assembly and published in the official Gazette of the City of Belgrade, No. 65/15 issued on October 26, 2015.

This is a key document guiding the City of Belgrade's climate change policy. Since then, the city has been carrying out certain activities identified in this document, the highest priority being given to flood protection, and green infrastructure. According to some surveys (developed with more than 1,000 respondents participating so far, just to assess the level of knowledge about climate change and to hear the needs of future implementation), more than 70% of the respondents have identified the need to raise awareness as one of the activities which has to be implemented. High priority is given to water resources (construction of retention ponds, drainage, saving and reuse of water) and heat island in the city centre.

Spain – The Metropolitan Area of Barcelona[12]

The metropolitan area of Barcelona, with an area of 636 km2 and more than 3.2 million inhabitants, is one of the largest metropolitan areas in Europe and occupies an important place in the Mediterranean area. This region generates half of the GDP of Catalonia.

The Àrea Metropolitana de Barcelona (AMB) is the public administration of the metropolitan area of Barcelona,

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[11] http://www.serbiaclimatestrategy.eu/

[12] Although the "region" we have chosen for this pilot is the Metropolitan Area of Barcelona, it cannot be fully understood without taking into account the policies and strategies existing at the regional level, i.e. the Autonomous Community of Catalonia. We have therefore considered information that goes beyond the pilot region.

a large urban conurbation made up with 36 municipalities.

The **Third report on Climate Change in Catalonia** identifies and foresees several (geological, socio-natural, meteorological) challenges from climate change in Catalonia:

- Heat waves, cold waves, snow and frost
- Extreme rainfall
- Flooding
- Drought
- Forest Fires
- Landslides
- Avalanches

These challenges have direct and indirect effects on the biodiversity of the region as well as on the lives of the population of Catalonia and the Barcelona metropolitan area.

The AMB identifies, as in the rest of the major contemporary urban agglomerations, several environmental challenges, both global and local, derived from its own operation. It is in the large metropolis where most of the planet's natural resources (energy, water, materials) are consumed and where a large part of greenhouse gas emissions (main responsible for climate change) and waste (urban solids, wastewater) are generated.

In this context, during the lasts years, the AMB has been working to improve the urban environment by including sustainability as a transversal element of the policies and services of the metropolitan administration. The overall aim is to reinforce and guarantee the sustainability and resilience of the metropolitan territory.

This objective, which informs all the actions of the Environment Department, has been put into practice by actions such as:

- The improvement of the protection of natural resources and the metropolitan green infrastructure.
- The continuous improvement of efficiency in the use of basic resources, like water and energy
- The application of the principles of the circular economy in the management of municipal waste
- The fight against climate change and its adaptation to its effects and in the promotion of sustainable economic activities that must lead to the improvement of innovation
- The creation of jobs and the promotion of inclusive sustainable forms of development.

Stakeholders in this region collaborate with each other very frequently for climate action initiatives. However, these collaborations are not structured and do not follow specific co-creation methodologies (there are exceptions in some isolated cases) but are rather intuitive collaborations that stem from a closely bound regions with scarce resources for initiatives in this domain. The cooperation between stakeholders occurs mainly with the academic sector (higher education institutions) and public administration. Despite the aforementioned, collaboration between sectors and actors is key, climate challenges have to be confronted with the involvement of all sectors and citizens.

1.6 Methodology

This guide has been developed through semi-guided interviews and/or questionnaires interviews of different stakeholders of the quadruple helix in each pilot region. In total, 56 stakeholders have answered to our questions on co-creation. Expertise, knowledge and experience in co-creation processes from each TeRRIFICA partners and facilitators have also been included. In order to protect personal data, data of interviewed persons have been anonymized.

Therefore, this guide is not exhaustive or the result of a scientific study, but rather a "photography" at the time of writing these co-creation and engagement recommendations that each pilot regions wants to share with their partners and all readers interested in co-creation processes. The methodologies and recommendations might be experimented in the TeRRIFICA living labs and evolve depending on the results from the feedback loop process.

One common interview grid was provided to pilot region leaders to conduct the consultation of stakeholders, but the interview grid has been freely translated and modified by pilot leaders in order to better fit the local context. The list of the interviews and the interview grid can be found below and in annex 2.

Interview grid template

- *Questions to identify key conflicts amongst key local or regional actors in the climate policy making context and recommendations:*
    - *What is your involvement in the climate policymaking context?*
    - *Who are, according to you, the key actors at local/regional level who are involved in the climate policymaking?*
    - *What are the divergences of opinions/objectives/interests amongst those key actors?*
    - *Have you already experienced some conflicts when working/volunteering on tackling climate change? If yes, could you describe the context, the conflict and how it ended?*
    - *What are the specificities of conflicts in the context of climate change policymaking?*
    - *What are the potential solutions and methodologies to avoid conflicts to occur? And could you explain with an example?*
    - *What are the potential solutions and methodologies to manage conflicts? And could you explain with an example?*

- *Questions to identify challenges in engaging stakeholders for climate mitigation and adaptation and recommendations:*
    - *What is your experience of stakeholders' engagement, and particularly in the climate policymaking context?*
    - *What are your own constraints that hinder your participation in meetings, conferences and other involvements on climate change?*
    - *What are the barriers you have identified when you conducted activities to engage stakeholders?*
    - *What are, according to you, the important aspects to pay attention to when communicating on climate mitigation and adaptation actions in order to better involve stakeholders?*
    - *Could you describe methodologies and their results you experienced to engage with multiple stakeholders? Are the methodologies different depending on the profile of the stakeholders? If yes, which one?*

- *Questions to identify challenges in co-creating for climate mitigation and adaptation and recommendations:*
  - *What is your vision/definition of co-creation?*
  - *What is your experience of co-creation, and particularly co-creation in the context of climate policymaking?*
  - *What are, according to your experience, challenges and barriers to co-create with multiple stakeholders? In which context have you identified these challenges/barriers? Do they arise from the stakeholders or their nature, from the context, from what is at stake, from anything else?*
  - *Could you describe methodologies and their results you experienced to foster or smooth the co-creation process? How did these methodologies help solving the barriers previously described?*

The analysis of answers is split in three big sections: the first section introduces the recommendations or good ideas from stakeholders to engage and co-create with multi-stakeholders, the second the methodologies that can help this process; and finally a third section exposing the challenges linked to co-creation and stakeholder management in climate-change projects, that may allow to better understand why we introduced the previous recommendations.

As an illustration, specific examples from the pilot regions context are exposed along the general observations on challenges. A more detailed case study explaining how previous co-creation projects between communities and academia overcame obstacles and identifying success factors are available in D3.2 report.

RECOMMENDATIONS

2. HOW TO BETTER ENGAGE AND CO-CREATE? RECOMMENDATIONS AND IDEAS

This guide identifies the challenge in engaging and co-creating with multiple stakeholders in order to tackle these challenges. This chapter gives recommendations and ideas that emerged from discussions with stakeholders and partners' previous experiences.

As an illustration, specific examples from the pilot regions context are exposed along the general arguments. More detailed case studies explaining how previous co-creation projects between communities and academia overcame obstacles and identifying success factors are available in D3.2 report.

2.1 Recommendations to overcome potential future conflicts and past conflicts on climate change policy-making

2.1.1 Using existing data or assessing impacts

Using existing data or assessing impacts of policies may help reduce divergences between administrations and politicians

Vechta pilot region example:
1/ Impact assessment of political decisions

Several stakeholders emphasized the issue that political decisions do not take into account the actual impact of the decision. This leads to problems in the implementation of the decisions made by the policy makers. It is most probable that an intensive impact assessment in advance of the final decision can help in a way the persons who actually have to work or deal with the consequences.

"It is important to increase impact assessments of political decisions. […] Right now, it is all based on the trial and error approach. […] Politic cannot work like this."

2/ Verification of the problem by using already existing data material

Visual support of certain problems/challenges can also be done by using the high amount of already existing data material (such as risk-conflict-maps, maps showing the climatic change over time). They must only be processed/appropriately prepared for the respective region.

"It is not necessary to always work with scenarios and future visions, the issues of climate change can also be well illustrated and documented by using existing measured data. […] In my opinion, it is also an important aspect for policy makers that the problems are visually tangible and vivid."

2.1.2 Better integration of climate change issues in policy-making process

If the topic climate change and all related issues become an integrative part of planning and decision making processes even in the municipal councils this can help to reduce conflicts in policy making processes.

Poznan pilot region example: Including climate action in education curricula

How to overcome such challenges? *There are no simple solutions but I guess the easiest way is to include climate action in the education programme or a school strategy/mission. We believe the system of funding is also necessary for example; we wanted to have in each classroom recycle trash bins and it was quite a financial burden for a school.*

Vechta pilot region example: Climate change aspect becomes integrative part of planning and decision processes

"This is a central approach that climate adaptation issues are seen as an integrative part of planning and decision processes. It should not be seen as an additional aspect to be considered but as an integrative part of these processes."

2.1.3   More concrete actions

According to stakeholders from some regions, climate change is already well integrated in policies – they are plans and strategies to tackle the issue. The problem rather lies at the stage of implementing concrete actions. This seems to be the case in Barcelona and French pilot regions.

French pilot region example: A huge gap between communication and actions and ideological block

There is a gap between the solicitations from the society to implement more and more ambitious actions to develop agroforestry, but the number of employees dedicated to this issue in public institution is very low.

As another example, at the local level, implementing renewable energy projects led to political struggle even though the communication is favourable towards climate change actions. Stakeholders analyse this blockage also as an ideological one:

"The implementation is variable. […] We have very tangible examples around us: there is the politician's discourse, but in the reality for the implementation, there is no one. […] As soon as they must pay to implement a project, namely a wood fuelled heater, they say it is too expensive and they will use photovoltaic technology. They don't implement concrete projects, except three square-meters on the school rooftop. […] We may know some elected representatives who are truly motivated, who will conduct projects, but they will spend much energy on struggling with their own municipality council or community council, in which one part are against. […] There have been many conferences on climate, conferences on sustainable development, circular economy, etc., but for the implementation, the number of projects is very low."

2.1.4   Link to adequate funding

A solution to a conflict between local and central authorities may be bringing some support to municipalities by informing on the level of state funding and helping in the search for co-financing.

Poznan pilot region example: Supporting the municipalities by providing advice on the scope of support and preparation the application for co-financing

As a part of the Clean Air program, the Polish government co-finances activities to reduce air pollution. The Ministry of the Environment recommended municipalities to engage in implementation of the program without providing adequate funding for this purpose. This leads to a situation when municipalities have to carry out additional tasks (belonging to other institutions) at the expense of their current tasks. Poznań Metropolis Association supports the municipalities belonging to the Association by providing advice on the scope of support and preparation of the application for co-financing.

Besides the precedent general recommendations to overcome conflicts in climate policy-making, engaging with stakeholders (3.2) and co-creating with stakeholders (3.3) are necessary to prevent conflicts.

F O R   M O R E   I N F O

What tools to use?

2.3.3.1 Avoiding conflicts (having a facilitator to avoid conflicts) – see on page 32

Why these recommendations?

4.1.1 A lack of CSOs and citizens' involvement may lead to open conflicts – see on page 52

4.1.2 Conflicts within public institutions or between public authorities' levels may hinder co-creative climate action – see on page 54

4.1.3 Tension between general and economic interests – "money VS environment" – see on page 57

4.1.4 Conflicts due to different interests and visions on how to tackle climate change – see on page 59

4.1.5 Conflicts over fake science and public communication manipulation – see on page 60

4.1.6 A lack of ambitions of climate actions – see on page 61

2.2 Recommendations to engage multiple stakeholders

2.2.1   Need for a higher degree of participation

More co-creation seems to be a mean to help with existing conflicts between policy-makers; whilst more participation may reduce conflicts between citizens and public authorities but also CSO, business and other stakeholders.

2.2.1.1 Joint preparation of political decisions by administration and politics

The problem is that politicians often cannot comprehend the background why the administration proposed a certain thing and not something else because there is no interaction in the developmental process. Thus, there must be ways to really engage the politicians in the decision process which proposal is forwarded to the city council.

Vechta pilot region example: Joint preparation of political decisions by administration and politics

"We [the administration] do the textual preparation and propose it to the politicians and they, finally, can only say 'yes' or 'no' without really having deeper knowledge on the topic. In my opinion, it would be nicer if we can prepare that together […]."

2.2.1.2 Including citizens in the planning process

Citizens should be involved in the planning of the local community development, from the very beginning, thus, they would be more likely to support a decision. Indeed, the best way to manage conflicts is including public participation (i.e. in the form of citizen panels) in every possible way and listening to each other by stakeholders. It is a long-term process, which should be applied at the initial, conceptual level of considered activity, and not at the level of implementation.

Barcelona pilot region example:

In Barcelona, participatory process has been used to identify issues for the Climate Summit in Paris in 2015, but at the same time to identify small projects that have been financed and incorporated into the planning of the City Council.

Poznan pilot region example: Improving a public participation

The example has been implemented in the Kalisz-Ostrow Agglomeration (wielkopolskie voivodship, Poland). Involved stakeholders were: Poznan Science and Technology Park, students, seniors, local self-government representatives, entrepreneurs and social activists.

Each of stakeholders had different transport needs and habits - from car drivers, bike users, bus and train passengers to pedestrians who request special architectural facilities. The challenge was to create common solutions for public transport.

Stakeholder's representatives worked together in mixed groups to build a futuristic vision of better transportation in Ostrów and Kalisz area. During this first PE4Trans[13] workshop, citizens were invited to think big and outside the box, not only about their own neighbourhood as it is today, but also about the future of the entire region. They talked about hopes and fears, shared dreams and fantasies and created technological ideas which now may seem unrealistic or bizarre.

That methodology gives participants a chance to open their minds and take a step further beyond today's limitations. And it also may be a great tool for policy makers to draw far-reaching strategies.
The methodology assumes to conduct more than one citizen panel (it is long term process). It is of crucial importance to provide presence of the same persons during next workshops. It gives a real chance for evaluating, whether created solutions go in the right direction.
The project is innovative in the context of used methodology in the region and has not specifically been replicated.

Belgrade pilot region example:
1/ Including citizens in the planning process

Citizens could gather at the local, community meetings where different issues would be discussed. Then each community can appoint a representative for municipality meetings, to further discuss proposed issues. Next level is to have one municipality representative present at debates and meetings at governmental level. Citizens can be perceived as indicators of problems, but strengths as well.
This was proposed by an interviewed stakeholder as a recommendation, which they also gave in their book on citizen engagement. However, it hasn't been tested so far.
Other stakeholder stated similarly, that greater decision power should be given to municipalities, which could work with citizens on finding solutions for their local problems.

2/ Implementation of participatory models in every legal procedure related to urban planning

Implementation of participatory models in every legal procedure related to urban planning from the beginning, since this is only done when plans have already been set. This method has to be legal and mandatory.

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[13] https://www.interregeurope.eu/pe4trans/

2.2.1.3 Transparency of policy-making process

Transparency of policy-making is crucial to avoid corruption and malversation but also for implementing a participatory process.

Transparency of the process and openness to discussions is favorable: the challenge is to create a friendly space for public discussion and openness to problem solving. This discussion should be preceded by substantive preparation consisting of gathering reliable and credible arguments. In addition, transparency of actions taken, honesty and reliability in determining the essence of problem problems are important. Another challenge is to build a discussion culture of listening to, willingness to consider arguments and to avoid conflicts.

2.2.1.4 Including citizens inputs, results of participation

Adequate actions should be taken following a proposal from citizens or an association.
Indeed, one key difficulty identified to co-create with citizens was that citizens would not feel their "participation" would have any influence. Thus, it seems that a key for a co-creation process is to ensure – and say it clearly – that citizens' and other stakeholders' inputs will be systematically taken into account and their participation will have an impact.

Belgrade pilot region example: Appreciation of good ideas

Several years ago, the local administration of the City of Belgrade invited citizens and associations to participate in the selection of sites for landscaping small green spaces (urban pockets).
First, the citizens submitted proposals for sites, and then they were surveyed regarding the content that was of high priority for them (sports, vacations, recreation, pleasant environment for a rest or for a children 's playground… these were just some of the possibilities). After consultation with citizens, the most appropriate solution was selected. Consultation process was led by NGOs. After that, the design and then the realization began. Citizens' attitudes towards landscaped areas were significantly more responsible and intimate. They had a sense of involvement in the whole process and behaved much more responsibly towards those spaces than to spaces that the city had arranged but without their participation.

Poznan pilot region example: Bottom-Up Approach and conflict-sensitive adaptation[14]

Bottom-Up Approach: Preparing for climate change is not a one size fits all process. Community consultation can help to combine different needs (ecological, ethical and political) by engaging in a process stakeholders (those people, institutions, and groups that have an interest in the proposed problem), who may express their views and concerns.

Conflict-sensitive adaptation should allow planners and decision-makers to address current weak points and development priorities while aiming to ensure long-term sustainability and peace through a basic understanding of future projections. Improve what is already being done (development, environmental management, Deming process), aims higher than just seeking the prevention of conflicts.

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[14] The entry below should be considered rather as thoughts from the interview showing the general way to support co-creation process (on the basis of the conflict resulted from the termination of brown coal extraction in the eastern part of Wielkopolskie voivodeship (Region of Greater Poland, Poland).

2.2.2 Involvement of all stakeholders from the start of the process

2.2.2.1 Strengthening existing collaborations

The use of existing critical mass: Respondents highlighted the existence of a relational density that could lead to the existence of a network of various entities, working all of them in a "related" way in the field of climate change. We cannot know the type of relationship that is established (collaboration or competition, hierarchical or horizontal, dominant or balanced), but there is a potential ecosystem of actors linked to climate change.

2.2.2.2 Involving all stakeholders from the start

It is very important to identify all the stakeholders, and to think outside the box when including and inviting stakeholders.
When you start analysing possible stakeholders for a certain issue, you have to consider and identify what is a link of every stakeholder to join the process, thus you would share interests.
Co-creation Research and Innovation allows for R&I to be more in line with society demands and needs and consequently to implement actions that will be sustainable in the time. Stakeholders have stressed that if all the key stakeholders are involved from the beginning in the co-creation process, higher the chances will be that the project will be sustainable and last.

Belgrade pilot region example:

1/ Early involvement of opposed stakeholders
Interviewed stakeholder stated that when working on some actions plans in one of the city municipalities, related to environmental protection, besides including representatives of leading parties, they tried to include also representatives of opposing parties in a working group. They included them from the beginning, so there were present throughout the whole process. Although, opposing parties are not allowed to vote positively for an issue that leading party proposes, they promised to stay neutral.

2/ Identification of all stakeholders
For example, while preparing plans for a new park in Belgrade, we identified as one of the stakeholders Association of blind people that have their premises nearby future park, meaning that many blind people visit this area, so we included them in the planning process, in order to make a specific section of the park tailored for their needs.
Also, state government has to acknowledge all the stakeholders as equally important.

French pilot region example: Involving all stakeholders in the co-creation is a key factor of success and sustainability of the project/actions implemented.

As an example, one policy-maker stakeholder underlined the development of new programs at French and European levels that promote agro-ecological innovations developed by farmers on their fields. *"We try to look for hopeful innovations, because we absolutely need – and very rapidly – how to carry the agro-ecology [transition]. We could trust the classical research system, but we enlarge the possibilities by giving a voice to farmers, but with a framework with scientists, as they also have things to say."*
Another stakeholder explained how important it was to have the three types of key stakeholders included in the project, and even in one cooperative structure, to successfully achieve the project and make it last. The cooperative is a particular legal status: it must gather all the supply chain, i.e. farmers producing, local authorities buying, individual consumers and associations. In the stakeholder experience, when local authorities carried a wood boiler project by themselves, there was not enough wood offered, as farmers were not engaged. In the opposite, a farmers-only initiative is not necessarily sustainable, as buyers (individuals and local authorities) remain to be convinced.

Poznan pilot region example: Participation of the local community in co-creation is extremely important

Climate Change Adaptation Plan and Revitalisation Plans were implemented in Poznan Agglomeration. Various stakeholders were engaged: local governments, scientific institution, central government organisation, NGOs, local activists, citizens and private companies.
Implementation of Climate Change Adaptation Plan is a response for not sufficient level of safety linked to climate change dangers and strong need to protect from negative climate change results.
The implementation of the plan will really change the everyday lives of city dwellers. Modernized flood protection systems, effective water resource management schemes or the development of information and warning systems for threats will make residents feel safer.

A number of consultative meetings were held with various stakeholders (i.e. public authorities, inhabitants and experts): it allowed to identify the four sectors most sensitive to the effects of climate change, verify indicators and specifying the list of adaptation activities for Poznań.

Similar Climate Change Adaptation Plans (and methodologies) were created and implemented in 44 cities in Poland, which population exceed 100 000 inhabitants. The success factor was the high level of environmental awareness among stakeholders and their willingness to participation. Local communities have unique knowledge about the everyday functioning of the city, its problems and local specificity.

2/ Need for involvement at the very beginning, including for selecting the format

One example is that there were events in the climate change context organized for the youth in one city in the pilot region. The interest among the target group was very small. One problem might have been that in the development of the events, no representatives of the respective target group were included.

2.2.2 Tangible tips for engaging multiple stakeholders

2.2.2.1 Directly inviting people

Often people do not feel addressed by general invitations to workshops or events. A good practice in this context is to directly invite specific target groups to respective events (for example via personalized e-mails). In this way, it is also possible to specifically point out their personal benefit.

Minsk pilot region example: Mind the invitation to stakeholders

All appeals should emphasize the importance of stakeholder participation in climate change adaptation and mitigation activities, contain references to the guiding directives or programmes, signed at high level meetings about obligations of the country to the global and national climate policy, as well as to the implementation of SDGs (incl. SDG #13). When the invitation is supported by the lead government body or scheduled as an assignment order from the relevant Ministry, it will be accepted with more benevolence.

2.2.2.2 Designing different and attractive participatory formats

Use of diverse communication forms (verbal communication including word-of-mouth communication, telephone calls, meetings and workshops, printed leaflets and posters, e-communication including e-mail, social media, blogs, internet forum, other) at each level of implementation of a given project/action enhances the engagement process by reaching (with proper information) multiple stakeholders. This inclusive practice helps sustain transparency of actions and give chance to involve different groups of people - with different age, knowledge, skills, social status.

Debilitating/ destructive factors for co-creation are negative attitudes of current and potential stakeholders described by the statements "I can't do anything" or "I have no influence on it". This point of view can be changed by showing and positioning the success actions / projects as well as giving detailed examples of what can be done by individuals to improve undesirable state by co-creating with others.

Poznan pilot region example: Diverse communication forms

In the context of the conflict on road modernisation and cut of trees (see example mentioned above), Ekologiczne Puszczykowo Association has engaged local community (residents, entrepreneurs, other activists) by communicating them benefits providing by trees, especially their role in air purification, and the consequences of cutting them down. This has been done by organizing meetings, printing thematic leaflets, posting information on social media, organizing petition campaign - collecting signatures, and finally involving commercial TV station.

This diversity of communication forms implemented brought positive effects: mobilization of local and regional community (petition signed by more than 1000 people, positive comments posted by residents in social media) and reduction of trees to be cut down by almost half.

For enhancing engagement of stakeholders, communication with them should be systematic and continued throughout the duration of the activity. Messages should be formulated in a transparent and rational manner. The questions from potential stakeholders shouldn't be left unanswered.
It is of crucial importance to provide presence of the same persons (leaders) during different phases of consultation. Leaders can stimulate engagement of other stakeholders by motivating them to the action,

especially during long-term interventions.
explanation of the effect of scale with real life examples of successfully accomplished actions).

For engaging different stakeholder groups it is important to highlight the regional concernment. This means the big topic of climate change, climate adaptation and mitigation has to be broken down to the regional level and made specific and tangible for the citizens.

Vechta pilot region example: Highlighting the regional/personal concernment

In one interview, the method of Sustainable Business Model Canvas was mentioned since this is a direct way to guarantee a high connectivity to established methods and models in the respective sector. The Sustainable Business Model Canvas approach, for example, has a great connectivity to the start-up sector.

Engaging "multi-actor game" tools may be for instance a way to grow interest of participants, but also to demonstrate the need for co-creation between multiple stakeholders.

French pilot region example: Multi-actor modeling 'game'
One stakeholder expressed its positive experience to engage stakeholders through a multi-actor model. The model is a "game" that involves an elected representative, an inhabitant and an economic actor of a local territory – each player must manage the territory around the question of water flows and flooding. *"That's why I believe the multi-actor modelling is useful, it allows to link different scales, between the local scale and the global functioning of the territory." "At the beginning we don't intervene much, we leave them play […] and very soon, the idea is that they see that if they don't talk to each other it won't work […]".*

The arguments underlined in the communication with stakeholders have to be identified and selected depending on the stakeholders to foster stakeholder engagement.

Since different stakeholders do not see their role in climate change process, it would be beneficial to approach them separately and educate them about the issues, and explain their potential role in the process of adaptation or mitigation to climate change.

Belgrade pilot region example: Educate stakeholders on all levels

Interviewed stakeholder said that as an expert on climate change, he has been called several times in Serbian Chamber of Commerce, where different business representatives were willing to learn more on climate change and how they could adapt their business in the future to changes that climate change would bring. This was especially important for agricultural sector.
We should use every opportunity to educate different stakeholders on how they can join climate action, and how they can adapt in the future, so they are able to understand the process of climate change.
We should not be chewing information and just giving it to stakeholders, we should engage them to understand and so they could give us insights on what could be done from their fields in order to adapt or to mitigate climate change effects.

The organisers of a co-creation process should make sure to design an attractive process for the participants. If they take great care, this will lead to a higher sense of well-being among the participants and can be seen as a motivation criterion: the participants will be motivated to further take part in the process.

2.2.2.1 Adapting existing structures to stakeholders constraints

One of the biggest challenges with engaging with stakeholders is reaching out and involving stakeholders who are not usually involved in such projects, or are less yet convinced by the issue, or the project/activity proposed. One solution to reach out to those stakeholders and potentially involving them may be to integrate the structure they are already participating in, or favouring structure with their peers.

Besides the "classical" workshops with fixed time slots it is recommendable to include more flexible intervention points to get in touch or to support engagement of stakeholders. The intervention points serve as opportunities to critically self-reflect if the target groups have been reached or a different way of getting in touch with them is needed. Thus, the intervention format can vary dependent on what is supportive in the specific situation. One important consideration is to also meet people where they are anyway instead of asking them to come to a certain place, which costs much more time. This can be understood as "visiting participation" formats.

efficient, farmers are more listening to their peers than to technician consultant or outsiders. This is because of the trust, the history, the relationship between them, so they will support each others and more easily dare to tell to each other's if there is an issue".

FOR MORE INFO

What tools to use?

3.1.1 Crowd-mapping (geCrowd-mapping (geo-questionnaire) – see on page 37

3.2.1 Lego (Opener - warming up the participants, a team building exercise) – see on page 39

3.2.2 Workshop Stories and History (Atelier Petite Histoire – Grande Histoire) – see on page 40

3.2.3 Joint poster (Opener - method for starting a workshop and warming up the participants) – see on page 40

Why these recommendations?

4.2.1 Technical difficulties: lack of time, funding, and increased solicitations – see on page 63

4.2.2 Difficulties to communicate on Climate Change – see on page 65

4.2.3 Specificities of the policy maker – citizens' relationship – see on page 68

4.2.4 The challenge of engaging new or unconvinced stakeholders – see on page 69

2.3 Recommendations to co-create

2.3.1 Development of a joint vision as a starting point

2.3.1.1 Trust and value sharing

There seems to be an emphasis on interpersonal relationships and especially on developing trust with co-creation partners; and also sharing – to some extend – some values. However, building trustful relationships takes time, and the turnover of employees during the period of the project may put at risks the co-creation process. Furthermore, even though there seems to be a consensus on the need for value sharing, the question "What level of disagreement can we handle?" is difficult.

Barcelona pilot region example: Common and shared starting point

There is some agreement about the importance of a shared context which to work from, and the people surveyed mention that it exists in this pilot region. In other words, there are information systems and technical capabilities, a metropolitan legal and strategic framework based on the European agenda, local plans and projects (Climate Plans) and public participation spaces that can be used to engage with different stakeholders and generate of innovative ideas for climate action.

2.3.1.2 Finding common objectives

In order to really work together on issues regarding climate action, it is important that all persons involved in the policy making processes jointly develop and agree on a vision, so that everyone truly believes that work goes hand in hand and into the same direction. For climate issues it would be much more helpful if the stakeholders jointly plan the next important steps for the upcoming years.

Identifying some issues, ideas, projects that are beneficial for all, thus different parties representatives would not be divided about them.

Vechta pilot region example: Development of a joint big vision

"Policy makers and administration have to work together and decide on 'that is what we want to implement for our city in the next 20 years and we do that all together'."

Minsk pilot region example: Search for alternatives to high-technology modernization solutions: finding mutually beneficial solutions

"The main skeptical argument that we came across when demonstrating international examples of climate-resilient areas was unbelief: "this is not possible with us", "it is too expensive", "no one will buy". The solution is to focus on the search for inter-sectorality, agreed mutually beneficial solutions, to raise the question "How can this solution be possible with us?" […]."

2.3.1.3 Identification of specific stakeholders' interests

If a stakeholder is approached through a specific issue of his interest, addressed with language that is understandable for them, it is much more likely that he would get involved and support the project, rather if he is asked to work just for the greater good or public interest.

According to stakeholders, collaboration on adaptation to climate change seems easier than mitigation, since adaptation is in everybody's interest.

It is important to show people what benefits they can get, mainly economic benefits.

People should also know that their opinions and ideas do really matter and can change the reality by solving a given, well-specified problem.

Belgrade co-creation example: Collaborate on specific projects related to adaptation to climate change

There was a project related to grape sorts cultivation in Serbia that give specific wines of great quality. Theoretical projections of climate change in coming years, that were performed from interviewed stakeholder, helped small and medium business in this field, together with scientists coming from the field of agriculture to find better grape varieties that could still give wine of the best quality, with increased temperatures on a specific location. This was also supported by the local government, because it was in everybody's interest.

Poznan pilot region:
1/ To show benefices for participants, including economical

Educational Anti-Smog Network project were implemented in all communes of the Poznań Metropolitan Area. There was a limited knowledge among the society about the importance of clean air for health and the impact of daily activities on its quality. So the objective was: Education of children, adolescents, their parents and providing tools for teachers in the area of air quality protection, with particular emphasis on the issue of smog: causes of its formation, impact on health, and possible actions that allow reducing air pollution.

Residents have been informed through the following tools: posters in urban space, information on websites of municipalities, information on social networks, other information channels used by municipalities (e.g. text messages to residents). In addition, teachers informed parents in parent-teacher meetings in schools and through electronic journals.

In the case of involving schools and teachers in the project, there were organized meetings with the School Directors and the Mayors of every municipality. In each school, teachers were selected who were responsible for conducting classes with children on anti-smog issues.

The result was an increasing the level of knowledge among the society about the importance of clean air.
The project will be replicated: Educational Anti-Smog Network is implemented in schools located in most polluted Polish communes. In 2019, it is planned to connect 300 schools within the Network.

The success factors were: Proper promotion of the project and strong engagement of teachers, who are at the same time, the local activists interested in environmental pollution issues and volunteered for the program.

2/ Improving the level of sense of agency among stakeholders

P4Trans[15] - a project on sustainable transportation – partners adopted the approach "for the people, by the people and with the people" as a guiding principle for the possible policy improvements.
The goal was to engage possible many persons (stakeholders) and to stay with them in touch during each stage of project implementation. The methods used were personal contacts (phone calls, e-mail, direct conversations), using the contacts of NGO's, which previously collaborated with Poznan Science and Technology Park. The methodology allowed the engagement different groups of stakeholders: students, seniors, local self-government representatives, entrepreneurs and social activists.

It has been replicated successfully in several contexts in other Poznan Science and Technology Park projects focused on i.e. developing a methodological framework for assessing and managing sustainable innovation through wider public engagement (CASI project).

Patience and consequence of the project coordinators who were responsible for personal stakeholders' encouraging were the success factors.

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[15] https://www.interregeurope.eu/pe4trans/

Belgrade pilot region example: Identify specific interest that each stakeholder has

One interviewed stakeholder gave an example of a specific investor that has built many buildings in a specific area of Belgrade, which is rich in geothermal springs. At first, the investor did not understand why he should change his plans and switch from using electrical heating to geothermal heating in his buildings, since that would at first mean that he had to invest more money in the project and in the construction. However, when he was thoroughly explained what are all the benefits of introducing geothermal heating, meaning that his tenants would pay much less for heating, which would make living in this building quite favourable in comparison to other buildings in the neighbourhood, he was convinced to start using alternative energy sources.

2.3.2 Respect for everyone's importance and knowledge, equal inclusion of stakeholders

In order to engage stakeholders, we have to define roles of all stakeholders, so they feel comfortable in their role, and that they can fully contribute their knowledge, experience and position. It is also important that they perceive their role as beneficial and that their involvement makes a difference.

In a co-creation process, it is highly important to treat all stakeholders with respect and importance is one of the crucial factors for success in co-creation process.

Belgrade pilot region example:
1/ Emphasize strengths from each of stakeholders
An interviewed stakeholder said that some of the most successful projects that were implemented by local government were actually coming directly on citizen's initiatives. For e.g. urban pockets project commenced when citizens initiated revitalization of some of the green surfaces in their neighbourhood. Citizens through their neighbourhood communities expressed what are their needs for some specific green surfaces in their neighbourhoods, and they were involved in the project from the very beginning. Thus, they perceived this project as their own.

2/ Give due respect and importance to all stakeholders
The Multisectoral Working Group for Defining Adaptation Measures for the City of Belgrade prepared the Adaptation Action Plan for Belgrade. The goal of the whole process was to develop the plan using a participatory methodology, where a large task force led by experts defined the measures[16]. The discussions and whole process provided an opportunity for all members to make their suggestions. Relevant experts in a particular field were respected but all members were treated equally: for instance, the proposals for water measures were not only defined by hydrologists but also by other experts, such as those involved in public health pointed to the priority of floods as they cause a potential risk of spreading infectious diseases.

The result of the whole process is a document that truly reflects the common views of all participants.
This methodology will work on action plans for other local governments in Serbia. Giving due respect and importance to all participants is reason for success.

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[16] The vulnerability assessment and adaptation action plan for the city of Belgrade are based on the methodology of the FUTURE CITIES Adaptation Compass, developed within the framework of the EU project FUTURE CITIES (FC, 2013).

2.3.3 The role of a facilitator – a "guardian" of co-creation

2.3.3.1 Avoiding conflicts

The collaboration between multiple and diverse stakeholders may lead to divergences and potentially conflicts. Sometimes, a facilitator who is outside the project community may help to avoid open conflicts by raising the issues before they become too problematic, or by being the person to talk to about issues, truly find the reason of the conflict and reflect on potential solutions. The facilitator may listen to all stakeholders participating in the project during individual interviews, but also through participating to collective times and detect discrete signals that an issue may raise. The facilitator may then alarm the group but do not necessarily prescribe a ready-to-implement solution/methodology.

In conflict situation that suspends further cooperation or prevents compromise solutions, an external facilitator (mediator) can be involved as a person unrelated to a network of relationships with either party, accepted and respected by all stakeholders. The facilitator, taking into account the rational arguments of each party, supports building a dialog by identifying and communicating shared values and goals.

French pilot region example: An outsider/facilitator may allow to avoid conflicts

Farmers and academia researchers who were collaborating into a participatory research called a facilitator because of a raising conflict: there was an emerging gap between the understanding of the research object by the researchers, and the need of knowledge from the farmers. The facilitator had some exchanges and participated in some meetings in order to understand both sides and understanding and proposed a solution. The facilitator's intervention allowed changing the project direction to satisfy both farmers and researchers, and therefore continue the research project.

Poznan pilot region example: Involvement of external facilitator/mediator

Ekologiczne Puszczykowo Association together with other local activist and a part of residents opposed the plan to cut 50 trees in the framework of a road modernisation project. The objective was to change the project to rebuild the road in such a way that will not proceed to cut down the valuable old trees. Stakeholders were involved in the consultation process by participating in meetings with representatives of local self-government, submitting documents, posting information on social media, organizing petition campaign - collecting signatures. Eventually, the tree protection stakeholders asked one of the main commercial televisions in Poland for help. TV station collected information from both groups of stakeholders and facilitated the dialog.

The long-term conflict between two main groups of stakeholders in this example was overcome only partially - mainly thanks to involving external facilitator (commercial TV station) and gathering positive feedback from the local and regional society (petition - more than 1000 signatures collected). Finally, it was decided to reduce the number of trees to be cut by almost half.

Ekologiczne Puszczykowo Association has used this solution (commercial TV station as a facilitator) only one time. Nevertheless, this way of acting is quite common in dealing with thematically diverse issues, especially in deep-conflict situations, where "soft solutions" are not sufficient and effective.

It is of crucial importance to provide presence of the same persons (leaders) during different phases of consultation. Leaders can stimulate engagement of other stakeholders by motivating them to the action, especially during long-term interventions.

2.3.3.2 Moderating and being a "driving force"

Facilitators or the "driving forces" in the region can be a powerful role to support the co-creation process since they have a different link to other stakeholders. These facilitators should be willing to actively support the process. It is important to ensure to have a highly qualified moderation for co-creation processes that is able to keep all participants on the track and to motivate and inspire them.

Academia-research representatives could be involved as mediators/facilitators in co-creation activities, since they are perceived as objective, competent and educated people, who should be listened to. However, other experiences show that other "profiles" may be very relevant for the position. Important competences include having experienced co-creation projects and knowing the functioning of different stakeholders, especially researchers and CSOs.

Belgrade pilot region example: Involve academia representatives as mediators

One stakeholder coming from academia was involved in mediating conflict aroused in one of the small towns, where mini power plant has just started to be constructed.
Firstly, they have organized a conference in the local community, where all stakeholders were invited (except business), where they analysed the problem on an academic level, taking into account all interests and opinions, and taking neutral perspective. As representatives of Faculty, they were perceived as a kind of authority, and someone who is objective, and thus they were listened to, from both, local government and citizens, while they tried to give alternative solutions for local economy development, in this case - rural tourism, for which preserving pristine rivers would be of the utmost importance.
Researchers should propose alternative solutions with beneficial impact, as a contra balance to business that have a negative impact on sustainable development. Also, they worked with local community, and helped them raise funds and renovate their local cultural centre, where they could regularly meet and discuss future plans for local development, in order to empower local citizens.

2.3.4 Ensuring co-creation

The facilitator may have a role to ensure a co-creative process all along the project. The facilitator, thanks to its outsider position, may check that there are opportunities for all to participate in the process and to share the decision-power all along the project. For instance, it may include ensuring that the final results of the co-creation R&I process will end up with effective knowledge or results for the researchers and the communities. All along the project, the facilitator may ensure the balance between scientific and societal needs.
Stakeholders have different interests, constraints, habits, cultures, and most of the time, languages. If the facilitator is confortable in various communities, such as the research communities and the CSO communities, he may facilitate the communication and ensure a common understanding.

French pilot region example:
1/ Having a facilitator to ensure co-creation
For instance, one stakeholder mentioned as the main success factor of a participatory research a key person who brought together stakeholders from association and the research sector, whilst paying attention that the research would bring usable results to the community: [the success is due to] *" trust relationships of the three key persons from the three networks [...] and one person who linked the three [...] who was clever to be able to properly form the questions, look for the right persons, write properly the project, and pull [...] back the*

researcher into the line when he would go into 100% research things" whereas there were also expecting technical and operational results and answers.

As another illustration, the RESP'HAIES project on sustainable hedgerow management gathers, amongst others, education professionals and researchers. That is why, through the co-creation process and facilitation, in the first steps of the project, there are the objectives of producing "teachable" instead of "deliverables" in order to ensure that materials will be usable by teachers.

2/ The facilitator may help common understanding between communities.
At the very beginning of the process, a CSO organisation and technician consultants were interested to submit a participatory research because they were interested in scientists' knowledge and methods. However, some negative experience and different codes, but also the feeling of a lack of legitimacy used to be obstacles for these actors to begin a participatory research. The facilitator has therefore helped the group with finding and communicating with researchers partners. This role of linking different worlds may last all along the project, as language differences may happen at any time.

2.3.4.1 Guaranteeing reflexivity and a long term perspective

A facilitator, and/or an external comity allow the co-creation team to reflect on their activities in a feedback loop process. Thus reflexivity may increase the quality of the collaboration and the co-creation process but also help stakeholders keeping in mind the bigger perspective. As research and targeted issues are often on a longer time scale than a few years project, it is important to embed the project into a more global picture.

French pilot region example: Reflexivity and long-term perspective

At the beginning of the REP'HAIES project on sustainable management of hedgerows, the facilitator, together with the co-creation group, wanted to add reflexivity to the activities, and especially involve other stakeholders who could not be part of the project, such as farmers or students.

This is why, the consortium developed the idea of an inter-profession comity, which would meet every few months to give their feedbacks on the development of the activities: is the research answering to the needs? Is there an important missing perspective from one type of stakeholder in the co-creation process?

Finally, the partners and the facilitator identified the need to replace the project into a longer-term perspective: what is the place of RESP'HAIES in the global goals of hedgerows development? Reflecting on the bigger perspective seems important to the partners to overcome the issue of the short project timeline and the project legacy.

F O R   M O R E   I N F O

What tools to use?

3.3.1 Scenario Workshop – see on page 41

3.4.1 World café – see on page 42

3.4.2 Future Scenario (in the phase of ideation to work on identified topics) – see on page 43

3.5.1 Avatar (phase of designing concrete ideas) – see on page 44

3.5.2 Prototyping – see on page 45

2.4 Need for more success factors and concrete examples?

TeRRIFICA team conducted in parallel a case studies' analysis to identify success factors for co-creating with multiple stakeholders. This analysis comes to validate and complement this guide, by identifying similar success factors: the importance of trust, of strategic thinking and planning, of targeting the appropriate groups, the crucial role of bidirectional knowledge transfer, of paying attention to the communication and the different perceptions, and of accepting that co-creation requires time.

The TeRRIFICA Case Study report is a source of short co-creation examples shedding a new light on these recommendations and that can help communities and organisation to build their co-creation activities.

METHODOLOGIES

3. PARTICIPATORY METHODOLOGIES

This part aims at giving concrete methodologies that can be used to foster the participation and co-creation during activities with multiple stakeholders. This is not an exhaustive list but methodologies that TeRRIFICA partners have already experienced and feel they would be useful to others.

Many of these methodologies are used during workshops. Organising workshop requires good and adapted participatory methodologies but also many other organisational aspects. A blue print of a two-days workshop is in annexe 1.

Each methodology has a description of their advantages and potential drawbacks, also on how to adapt the methodology depending on the context, in order that readers can easily pick up ideas and inspiration and tweak the model to best fit their objectives.

3.1 Engaging – reaching out to stakeholders

3.1.1 Crowd-mapping (geo-questionnaire)[17]

Geo-questionnaire is mostly considered as an online questionnaire coupled with an interactive map facilitating collection of answers together with their spatial references. In geo-questionnaire, the geographical features (important places, points of interests etc.) are sketched by participants or selected from an interactive map. The features may be sketched as points, lines, or polygons. Depending on the geo-questionnaire design, sketching or selecting a geographical feature may trigger one or more questions pertinent to feature's location. Crowd-mapping is a method of crowdsourcing strictly related to the themes of public participation in Geographic Information Systems and Web Mapping (for more information please see Goodchild et al. 2010, See et al. 2016, Czepkiewicz et al. 2018, Rzeszewski and Kotus 2019).

Pros and Cons
Pros:
- possibility to work with large group of stakeholders;

- possibility to identify local key actors;
- use of tool can initiate stakeholders engagement and process of co-creation;
- possibility to incorporate a "learning by doing" model;
- inclusive approach (accessibility);
- enthusiasm for using and interacting with web mapping tools;
- possibility to use free/open tools and background maps;
- broad spectrum of uses;
- possibility to collect not only geographical data but also information without an explicit spatial reference (descriptive information).

Cons:
- issues of trust and data quality and usability (e.g. inaccurate locations) which can be partially overcome or managed by proper design of tool including a well-prepared tutorial, clear interface, check questions, conducting a pilot study, other (use of methodological guidelines described in the literature);
- digital exclusion;
- challenging introduction of map editing tools (they change browser experience and require accessing spatial knowledge, which is a cognitively demanding task, especially for older people);
- costs of tool licenses, maps and server renting (especially if the tool will be used for commercial purposes);
- in case of design a new tool the workforce with technical skills is needed (IT/programming).

In which particular situation the tool/methodology has been useful?

Depending on the tool design and programmed options crowd-mapping tools (geo-questionnaires) are useful in citizen knowledge gathering and simultaneously identification of stakeholders and key players in the given thematic context. They can initiate stakeholders engagement and co-creation processes. Below a couple of real-life examples are presented.

- Poznan Barrier Map is a project of Adam Mickiewicz University in Poznań spatial management students, in which the issues of unequal accessibility to the city space for all its users were addressed, with particular emphasis on people with disabilities. The project involves identification and mapping (in the urban space) of different categories of barriers that prevent free movement in the city (obstacles on the road, unsuitable surface of pavement, unsuitable stairs, unsuitable footbridge, unsuitable pedestrian crossing, unsuitable bus/tram/rail stop, other barriers). Identified barriers are located on the map by volunteers (students, residents). Googlemaps software was used to develop the map (http://akngp.home.amu.edu.pl/projekty/aktualne/poznanska-mapa-barier/);
- GEOPLAN - a project that aims to build an online geographical information system (geoportal) supporting social participation in spatial planning along with the methodology of its application (http://geoplan.amu.edu.pl/). Deployments:
- Geo-questionnaire for public consultations regarding the local spatial development plan for the center of Rokietnica (Poznań Agglomeration);
- Map of local needs of Poznań city center (Poznań Agglomeration);
- Geo-questionnaire supporting social consultations on renovation direction of the Lazarski Market in Poznań (Poznań Agglomeration);
- Geo-questionnaire on sustainable public transport in Łodz (Poland).
- Crowd-mapping Geneva Canton's Soundscape - Android users who visit or live in Geneva Canton were asked to record the sounds around them with a special app. The data gathered was used to create a sound map that provides researchers with information on the quality of life (https://actu.epfl.ch/news/crowd-mapping-geneva-canton-s-soundscape-2/).

Time frame. How much time is needed to work with this methodology?

Variable.

3.2 Communication - starting the discussion

3.2.1   Lego (Opener - warming up the participants, a team building exercise)[18]

A team-building activity in which groups must work together to build a structure out of Lego bricks, but each individual has a secret "assignment" which makes the collaborative process more challenging. It emphasizes group communication, leadership dynamics, conflict, cooperation, patience and problem solving strategy.

In the first step, you organize participants into groups of 5 - 7. Each group sits around a table with a box of Lego. Without speaking, they will then have to build a structure with the Legos together. Each participant gets an "assignment". The participants are not allowed to show their assignment to anyone else. Examples of the assignments: You are the only one allowed to build (put bricks together) in the first 3 layers of the building. Or: You must make sure that layers 3 and 4 only consist of yellow bricks. Or: You have to make sure that layers 2 and 6 consist of exactly eight bricks. Or: You are the only one allowed to build (put bricks together) in rows 5 and 6 of the building. After 20 minutes, the building process ends and the participants are invited to guess the "assignments" of the other members of their group. They may now share their secret assignments with each other. As a final step, the activity will be debriefed by reflecting on how the groups worked together.

Examples of reflection questions: What happened during the task? How did we work as a group? How did the experience make me feel?

Pros and Cons

This method helps to identify first common grounds about communication within the group, but also to identify individualities. Its goal is to exercise collaboration, action, change, participatory learning, leadership and performance in innovative processes.

Clear instructions beforehand to the group and a reflection afterwards are important.

In which particular situation the tool/methodology has been useful?

"Lego" is a method for starting a workshop and warming up the participants.

The method shows very clearly that an effective cooperation needs very good communication and an exchange over the individual goals. Even if the overall goal is clear to all stakeholders, each participant brings in her/his rules and own intermediate goals.

Lego helps participants "feel" the need for transparency and clear communication in a well running co-creation process.

Time frame. How much time is needed to work with this methodology?

30 minutes

3.2.2   Workshop Stories and History (Atelier Petite Histoire – Grande Histoire)[19]

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[18] **Source of the tool:**
https://toolbox.hyperisland.com/lego-challenge
https://bloom.zsi.at/moodle/pluginfile.php/478/mod_resource/content/1/D3%203_Guidebook%20on%20engagement%20and%20co-creation%20methods_final.pdf
[19] **Source of the tool:**
http://www.scoplepave.org/petite-histoire-grande-histoire

The workshop Stories and History is a methodology to invite participants to share anecdotes from their life stories and what they believe to be the major points of the general History on one particular topic.

Participants are drawing a timeline, starting from the birth of the oldest participant till today. Decades by decades, participants share with the group one key element they consider to be significant regarding the chosen topic, related to their personal history and the great history.

There are many possible variations of the methodologies, especially to adapt it to the group size, the need, the time of the meeting.

Pros and Cons

This methodology may be only an icebreaker, to allow participants to know each other. The methodology may also help participants reflecting on the long time history of a topic and complement each other's vision of the history with different perspectives.

The methodology does not require any preparation. However, a proper facilitation may be require in order to keep the time and ensure each participants have the opportunity to share their experience.

The methodology is very much adaptable, so the results will depend deeply on the objectives. For example, it could be possible to merge this tool on the past with a prospective timeline at the launch of the project to start the project programing.

In which particular situation the tool/methodology has been useful?

Sciences Citoyennes proposed this methodology during the first workshop of the pilot region with stakeholders – researchers from different fields, NGO representative, technical consultants, business representatives and education experts. The timeline allowed participants to develop a history on hedgerows with complementary perspectives, but also to directly place the project into a bigger perspective, so that the project activities are though in a longer timeframe than the 3-year project. Furthermore, the methodology brought unforeseen outputs: replying to a knowledge need on the history of hedgerows. The timeline draft drawn by participants is currently shared with other stakeholders in order to continue the work and gather other perspectives.

Time frame. How much time is needed to work with this methodology?

The time frame will depend a lot on the variation chosen: the minimum time needed seems to be 1 hour, however, if each participant tell a story for each decade, it may take few hours.

3.2.3   Joint poster (Opener - method for starting a workshop and warming up the participants)[20]

Small groups of 4 to 5 people find together and create a poster highlighting the commonalities and individualities on private and professional level. At the end of the session the groups give a short presentation of their posters (1 – 2 min each). All posters should be placed clearly visible in the room.

Pros and Cons

Collaboratively creating a poster, which highlights the commonalities, but also individualities of each small break out group.

It is also tool for sparking creative thinking and helping to quickly gather a large number of ideas. As organizer one can state the issue to be ideastormed. People to call out all their ideas as fast as possible and write them

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down on a flipchart/poster – without censoring them. Impractical ideas are welcome – they can spark more possibilities.

It is important to make sure there is no discussion or comment on others' ideas. Structured thinking and organising can come afterwards.

Good for exploring common ground for the coming discussions in a workshop. Also helps with identifying fields of expertise in the groups.

A variation could be to provide a set of pictures / photos related to the topic of the workshop and ask people to choose the two pictures they think to be the most important ones to represent the chosen topic.

The posters should remain visible throughout the workshop.

In which particular situation the tool/methodology has been useful?
Can be used as a helpful opener to co-creation workshops.

Time frame. How much time is needed to work with this methodology?
10-30 minutes

3.3 Co-creation - Building together a joint vision and first actions steps

3.3.1 Scenario Workshop[21]

A scenario workshop enables the exchange of knowledge, opinions, wishes, doubts, criticisms and suggestions on a particular problem among different actors, whether they are researchers, practitioners, policy makers or mediators. The proposed methodology stimulates constructive discussions and subsequent involvement in the context of a collectively defined objective and whose very first steps have been identified and their implementation distributed among the participants.

The main goals of a scenario workshop are:
- Specify a concrete project
- Define together all desirable prospects
- Develop visions, plans and actions to achieve the objective
- Become aware of upcoming problems or obstacles;
- Identify the differences and similarities of perception, by different groups of participants, of problems and solutions.

Pros and Cons

A scenario workshop can help to develop a shared vision for a project and it can also enable the planning of the early stages of a plan, that are feasible in the short term. The workshop can allow a longer- term action plan to be considered. It is crucial to implement the first stages of solutions proposed by the participants in the workshop that are collectively negotiated and accepted, in order to 'ignite' the collaborative process.

The prerequisite for success is that commitment to the implementation of a solution is strong and shared by all and that each of these actors has practical means of intervention in their own do- main, hence the need to concentrate a lot of effort in the process of identifying participants and presenting the process and its goals.

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[21] **Source of the tool:**
https://www.livingknowledge.org/fileadmin/Dateien-Living-Knowledge/Library/Project_reports/PERARES_Guide_to_organize_scenario_workshops_to_develop_partnerships_between_reseachers_and_CSOsD3.1.pdf

The major advantage of this type of process is to allow collective work between actors with very different position, distinct initial objectives and different views of a project and in a very limited time and with very limited resources.

In which particular situation the tool/methodology has been useful?
Sciences Citoyennes adapted and used this methodology several times (see link below) to help different stakeholders (institutions, researchers, students, practitioners and CSOs) wishing to develop participatory research projects or dynamics to build a concrete roadmap. It eased dialogue, co-construction and commitment of potential partners with very different profiles. It helped each one of them to present its vision and its expertise so as to highlight its drive and constraint. The negotiation eventually leaded to a common action plan fostering its sustainability.
The methodology was initially designed to help multi-stakeholders working together in many contexts and fiels. We refined it to focus on science and society issues.

Time frame. How much time is needed to work with this methodology?
The scenario workshop takes one full day but it is better to include a good break in between, i.e. twice half a day or two evenings.

3.4 Ideation – small groups exchanges to find a common ground

3.4.1   World café[22]

The world café is a method to enter a topic and works well in larger groups. It aims at gathering the collective knowledge. This method can be applied for different goals, such as getting to know each other and networking (this would be as an opener), but also to exchange views, ideas and expectations, or to collect solution approaches or to reflect on something. The world café setting needs space. Tables for small groups of 4 – 6 persons are prepared. All tables work on the same question. The tables are covered with paper and provide sufficient pens for the participants to write with. There can also be snacks or drinks provided to make a good atmosphere.
There are 3 rounds for exchange, lasting at least 15 minutes per round. Participants exchange and note their ideas and thoughts on the paper. After the first round all participants but one change the table to discuss the same question with other participants. The one person staying at the table has the role of the host and takes care of reminding the others to note their ideas and thoughts and always repeats to the new group what before was discussed at this particular table. This process is repeated a second time. Ensure that the question is clearly formulated and that people who know each other are sitting on different tables.

Pros and Cons
World Café methodology is a simple, effective, and flexible format for hosting large groups.
The right questions are a key success factor for a World Café. The questions should arouse interest. They are simply formulated, open, have an inviting character and are intended to make the dialogue curious.
Moderation is necessary for the implementation of the World Café. The tasks are the accompaniment and timing of the process. Especially important in the method is to provide a relaxed atmosphere, so that the participants can freely engage in conversation.

In which particular situation the tool/methodology has been useful?
This method can be useful to explore pressing issues within the participants and can be used to take a first deep dive into the topic of the workshop.

Time frame. How much time is needed to work with this methodology?
Two hours up to a full day

3.4.2   Future Scenario (in the phase of ideation to work on identified topics)[23]

The future scenario technique reminds of the Scenario Workshop methodology but should not be mixed up. It works well to pick up specific challenges or topics to address and to work on first suggestions for solutions and on concrete measures in a much shorter time frame. The questions are based on the specific content of the workshop.
1. How do you perceive the current state of the art?
2. What are the reasons for that?
3. Which suggestions for solutions are there to improve the situation?
4. Which concrete measures can be quickly implemented?
This method can be done with all kind of different questions as long as they always go from "problem talking" to "solution talking".

Pros and Cons
Future scenario technique works well in small groups. Results can be easily visualised. Two rounds can build the core of a full day workshop and 'problem talking' can build the basis for the second round of 'solution talking'
Flip charts that clearly show the questions and the process should be prepared before the session starts.
In which particular situation the tool/methodology has been useful?
The future scenario technique works well to pick up specific challenges or topics to address and to work on first suggestions for solutions and on concrete measures. The questions are based on the specific content of the workshop.

Time frame. How much time is needed to work with this methodology?
60-120 minutes per round

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[23] **Source of the tool:**
https://bloom.zsi.at/moodle/pluginfile.php/478/mod_resource/content/1/D3%203_Guidebook%20on%20engagement%20and%20co-creation%20methods_final.pdf

3.5 Co-designing – developing concrete ideas

3.5.1 Avatar (phase of designing concrete ideas)[24]

The Avatar method helps addressing aspects for specific target groups.

As an inspiration in ideation persona development is a method to enter the phase of understanding. Personas are the descriptions of archetypal users or stakeholders. Each persona description is based on a fictitious character whose profile represents the characteristics of an existing social group. It describes social and demographic characteristics, needs, desires, habits and cultural backgrounds (Graz READER 2016).The goals of persona development include: Giving space to other perspectives and maintaining the distance to one's own perspective through empathy-understanding and enabling perspectives in the process. In a workshop session with persona development, the group discusses which persona should be dealt – e. g. representatives from ministry, promoter science, business or university. The participants agree on basis of the existing expertise on a representative of a particular stakeholder group.

Defining personas helps the team to have a shared understanding of the real users in terms of their goals, capabilities, and contexts. Personas also help prevent "self-referential design" when the designer or developer may unconsciously project their own mental models on the product design which may be very different from that of the target user population. Personas also provide a reality check by helping designers keep the focus of the design on cases that are most likely to be encountered for the target users and not on edge cases which usually won't happen for the target population.

Characteristics of a good persona
A quick checklist of what makes a good persona.
The persona
- reflects patterns observed in research
- focuses on the current state, not the future
- is realistic, not idealized
- helps you understand your target group

Moreover you think about the context, behaviour, attitude, needs, challenges, motivation and goals of our chosen persona.

Create your own persona:
- Choose a persona of a stakeholder group where you see certain barriers to approach them.
- Give a realistic name to create a real relationship between your group and the persona
- Draw a picture of your persona
- Demographic information such as age, origin, marital status, ..
- Occupation and tasks of his/her profession
- Goals, expectations, wishes and / or needs (with regard to the question)
- Likes and dislikes that can influence a decision
- Recreational activities of the Persona
- A quote to better express the character or desirable aspect of the persona

It is quite common to see a page or two of documentation written for each persona.

Pros and Cons

The goal is to bring your users to life by developing personas with real names, personalities, motivations, and often even a photo. In other words, a good persona is highly personalized. The created personas will be presented to the whole group.

In which particular situation the tool/methodology has been useful?
The Avatar method is to design concrete ideas and helps addressing aspects for specific target groups. This method is a core piece of the co-creation workshop and needs a proper introduction and moderation. Participants not being used to creative methods might show a negative attitude at fist which needs to be addressed, intercepted and solved. Usually participants start to open up and successfully participate through this method, particularly when they are given sufficient time to get adjusted and when they are well guided by the moderators.

Time frame. How much time is needed to work with this methodology?
60 minutes plus time for presentation

3.5.2   Prototyping[25]

This technique comes from Design Thinking Processes and is meant for generating ideas for very concrete tools, materials and activities which (in our case) the project partners from TeRRIFICA but also other stakeholders can use to raise knowledge on climate change adaptation.
The brainstorming activities such as the above mentioned future scenarios aim for a maximum quantity of ideas, without considering the practicality of the tool in the first instance. In this step, the most promising idea is built as a prototype. This could either be a model, a theatre scene or even an interactive game or other form of demonstration to make the idea tangible and for others immediately and easy to understand. Characteristics of this prototype have to be carried out in details, so that main questions such as, if the tool is applied at individual or institutional level, voluntary – mandatory, online – offline, multi stakeholder or single stakeholder use etc. are already addressed.
To do so, participants are provided with a variety of materials starting from pens and coloured cards, through cords, pins, and placing pieces, to other creative materials such as play dough. These materials support a creative out of the box thinking and support participants in visualising places, activities, stakeholders and also processes.
As the methods name already let us assume, the result of this method is a first prototype, which should be tested afterwards.
The prototyping is usually done in small break out groups. It is important to allocate sufficient time for this task, as not all participants might feel comfortable in using these materials from the early beginning on. Experience shows, that as soon as one person starts to model something other join and the process runs its course.
When the first prototyping work is done it is useful when each group gets feedback from the other groups. Therefore a feedback loop is applied, where one person per group stays at the table while the others split up and visit other groups. The person staying at the table explains each detail to the visitors and gathers their feedback and ideas. After this process, each group has another 15 minutes to adapt or add ideas to their prototype.

Pros and Cons

This method is the core piece of the co-creation workshop and needs a proper introduction and moderation. Participants not being used to creative methods might show a negative attitude at fist which needs to be addressed, intercepted and solved. Usually participants start to open up and successfully participate through these methods, particularly when they are given sufficient time to get adjusted and when they are well guided by the moderators.

In which particular situation the tool/methodology has been useful?
The prototyping method is supporting a visualisation of concrete actions or ideas. It helps to creatively come up with innovative ideas on how to reach an identified goal.
It should be added, that prototyping does not only refer to design prototypes of products, but can also be useful to design processes and new activities.

Time frame. How much time is needed to work with this methodology?
120 minutes plus time for presentation

3.5.3   Co-making[26]

Co-making means co-creation in hands on approach. This approach comes from the maker movement. The movement includes combining technology, arts, crafts and do it yourself principles in collaborative work. By making together, by creating changes in physical reality we can deal with almost any issue that needs to be addressed. From creating prototypes to constructing fully developed solutions making is playing with serious results. In this playful atmosphere people get to know each other more closely and join in reaching a common goal.
Co-making can be around simple thing where outcome is predefined and with instructions. Which is good to develop a sense of togetherness and openness. But it can also be completely open. It usually includes transdisciplinary and transgenerational teams since diverse aspects of mental and physical activities are supposed to be implemented.
Philosophy of this approach comes from learning by doing theory, it is not problems but solutions oriented approach. This can be critically important for the long term projects balance of practice and theory. We might have a problem completely defined within the group but solution is addressed and put into practice within an open ended making context. If topic is air pollution then making the system of sensors for one neighbourhood or town by diverse stakeholders at the same time can bring deep understanding and closer cooperation.

Plus and Cons
Advantages of this approach are:
- big potentiality for learning,
- motivation for participation is high because we are involving entire body into process,
- innovation is boosted due to environment where multiple perspectives are combined
Disadvantages of this approach are:
- some people are not used to be involved in hands on activities
- very abstract problems are hard to be addressed in this approach.

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[26] **Source of the tool:**
Dougherty, D. (2013). The maker mindset. In M. Honey & D.E. Kanter (Eds.), Design, make, play: Growing the next generation of STEM innovators. New York, NY: Routledge.

In which particular situation the tool/methodology has been useful?
In our organization, we have used it in prolonged activities such as makers camps. Where during several days transdisciplinary and transgenerational teams cocreate own projects from the problem to a solution. Other format that we have used is Makaton where in a precisely defined shorter period of time specific project brings a solution to a given problem.
Comaking can be useful in all stages in climate change projects, from the starting point - as an icebreaker or at more complex stages of cocreation.

3.6 Co-producing science

3.6.1   Community-based participatory research (with university students and regional partners)[27]

"Community-based participatory research (CBPR) is a partnership approach to research that equitably involves community members, organizational representatives, researchers, and others in all aspects of the research process, with all partners in the process contributing expertise and sharing in the decision-making and ownership. The aim of CBPR is to increase knowledge and understanding of a given phenomenon and to integrate the knowledge gained with interventions for policy or social change benefiting the community members. There are many ways CBPR can be used to engage in the public sphere and a range of approaches that can encompass the process of engagement. There is some consensus in the way in which practitioners engage communities. This can range from initial engagement of the public to the empowering of communities that can lead to collective goals and social change. Engagement can include lower to higher levels of inclusion. CBPR emphasizes the public engagement end of this spectrum in many cases[28]."

Pros and Cons
University students doing community-based participatory research with local, non-academic partners (NGOs, public entities,…) learn to analyze complex real-world issues and to communicate to non-academic partners and to collaborate with them. Partners get answers to their questions and information that can help them to improve their work.
It is important to choose the regional partners quite well and to communicate the possible results and expected outcomes openly. It is very helpful to select research topics fitting to the research interests of the students and aiming at societal challenges to get the students even more motivated to work on the projects. The lecturers have to guide the students intensively in doing their research and communicating with the partners.

In which particular situation the tool/methodology has been useful?
University of Vechta offers a course called "Out of the Box – Participatory Research with People from the Region". The course focuses on participatory research projects in student groups with local actors. The course is open to all students from different study programs and with different disciplinary backgrounds, as it belongs to

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[27] **Source of the tool:**
https://www.livingknowledge.org/fileadmin/Dateien-Living-Knowledge/Dokumente_Dateien/EnRRICH/EnRRICH_case_study_UoV_Out_of_the_Box.pdf
https://www.livingknowledge.org/fileadmin/Dateien-Living-Knowledge/Dokumente_Dateien/EnRRICH/case_study_poster_A3__UNISS_.pdf
https://www.livingknowledge.org/fileadmin/Dateien-Living-Knowledge/Dokumente_Dateien/EnRRICH/case_study_poster_A3__UCC__1_.pdf
[28] https://en.wikipedia.org/wiki/Community-based_participatory_research

the special profile module/key competence module (General Studies), and is transdisciplinary and interdisciplinary. The target audience is undergraduate and master students. After having been introduced to the concepts of RRI, participatory research, science shops and sustainability, students develop and run participatory research projects together with local regional partners. The partners contribute their ideas and questions, on the basis of which the research projects are then developed. The course runs for 14 weeks with 4 hours per week.

Time frame. How much time is needed to work with this methodology?
As mentioned above this approach needs several months with a regular number of hours per week.

3.6.2 Co-research[29]

This approach democratizes the process for all people involved. We start from the research question, which is co-created among diverse stakeholders. Once we agree that we are all asking the same question then we develop methodologies to answer it. Then we do the research together, it is similar to participatory action research but it does not have to include action itself, it can be used only for situation analysis and only in next steps actions can be implemented. It is an important approach because it provides co ownership among participants from the beginning - from the research of the problem. It includes very important field of citizen science.

Plus and Cons
Advantages of this approach are:
- democratization of the research processes
- co ownership of the process
- comprehensiveness of the research approach
- long term impact

Disadvantages of this approach are:
- it takes a lot of time
- it is hard to provide equal participation and influence of diverse stakeholders

In which particular situation the tool/methodology has been useful?
If we want to explore children play and its connection to climate change we can do it together with children as co researchers who will observe and track down diverse parameters and then report and analyze the data.

3.6.3 Service Learning[30]

Service-learning engages students in active, relevant, and collaborative learning and is characterized by its equal focus on both the service being provided and the learning that is occurring. Bringle and Hatcher (1995, 112) define service-learning as "a seminar-based, credit-bearing, educational experience in which students (a)

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[29] **Source of the tool:**
West, A. (1998). Different questions, different ideas: Child-led research and other participation. In V. Johnson, E. Ivan-Smith, G. Gordon, P. Pridmore & P. Scott (Eds), Stepping forward: Children and young people participation in the development process (pp. 271–278). London: Intermediate technology publication

[30] **Source of the tool:**
https://www.case-ka.eu/index.html%3Fp=974.html

participate in an organized service activity that meets identified community needs and (b) reflect on the service activity in such a way to gain further understanding of seminar content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility."

Sigmon (1997) emphasizes the two-way process of learning, which is between those who provide the service and those who receive it, as an experiential education approach that is premised on reciprocal learning. Accordingly, service-learning occurs when there is a balance between learning goals and service outcomes.

Pros and Cons

Engaging students in meaningful projects contributes to deep learning by combining theoretical with practical knowledge and providing them with fundamental concepts. Service-learning programs have an academic context and are designed in such a way that the service aspect enhances learning and the learning process enhances service in an integrated way, rather than as merely a supplementary activity.

A significant advantage of service-learning is its combination of formal learning (in the classroom) and informal learning during project work with a partner organization. Both types of learning must be related to one another through reflection. A service-learning project comprises a circle of defining, planning, conducting, and evaluating a project. All steps must be completed by the students in collaboration with their service-partners.

Service-learning enables students to gain new knowledge and develop sustainability competencies in an experiential learning process as active service providers on one hand, and on the other hand, it facilitates organizational changes toward sustainability in the service-partner's institution.

It is very important to select the partners well and define well the expected outcomes for them (service). Otherwise it can be very frustrating for all involved if the students are not able to meet the expectations of the partners.

In which particular situation the tool/methodology has been useful?

Since 2014, the University of Vechta has implemented project-based service-learning courses on topics of sustainable development. The courses are offered in the Profilierungsbereich (profiling area) of the Bachelor programs at the University of Vechta. The Profilierungsbereich includes various courses that are offered for different undergraduate study programs (General Studies), which facilitate the development of professional, methodological, social, and action competencies.

One of the sustainability modules is Module PB-14 Sustainable Development. In this module, different service-learning courses were offered. The course "Corporate Sustainability Communication" was offered twice: in the summer term of 2015 in cooperation with the enterprise Lebensbaum, a company that produces organic and partly fair-traded spices, tea, and coffee, and in the winter term of 2015/16 with the enterprise Piepenbrock, a company that offers building cleaning, facility management, maintenance, and security. To engage students in active, relevant, and collaborative learning, the course was divided into three phases: (1) theoretical input and reflection, (2) project work, and (3) presentation and reflection. During the six-week theoretical input and reflection phase, special emphasis was given to the clarification of the concepts of sustainability, sustainability communication, and sustainability communication in enterprises in particular. These concepts were presented to the students, and based on inputs and text reading, students had to discuss and critically reflect on the concepts. During the six-week service-learning oriented project work phase, student groups developed projects for and in cooperation with the service-partners (Lebensbaum and Piepenbrock) supervised by their teacher. The student projects were informed and guided by the theoretical considerations of the input phase. All projects were conceptualized to explore how the sustainability communication of enterprises can be enhanced and improved. This engagement with the "real world" called for close collaboration between students, teachers, and service partners facilitated by weekly meetings of the project groups and a regular dialogue with the service partners as well as teachers. While some student groups communicated more regularly with the service partners, others had more sporadic contact. During the two-week presentation and reflection phase, students presented the results of their projects to the service partners and the teacher (during an excursion to the enterprise) and reflected on the entire process. The course concluded with written project reports that describe

the theoretical background and the project results. The oral presentation, including feedback from the service partners and the teacher, and the report writing within the project group provided the opportunity for critically reflecting on experiences gained during the project work.

Time frame. How much time is needed to work with this methodology?
This process takes several months with a regular number of hours per week.

CHALLENGES

4. CHALLENGES TO ENGAGE AND CO-CREATE WITH MULTIPLE STAKEHOLDERS

4.1 Potential future conflicts or past conflicts

Where there is an intention to make progress regarding climate issues, there might be some past conflicts or potential future conflicts. It is important to being aware of the sources of conflicts on climate change policies and activities that could happen between key stakeholders, in order to better intervene to foster co-creation and manage the conflicts.

In the TeRRIFICA pilot regions, all regions mostly share the following sources of conflicts identified:
- A lack of citizens' involvement in public policy-making;
- Existing conflicts within policy-making institutions;
- Tension between economic interest and general interest and climate action;
- Different visions and interests on climate change actions;
- Conflicts on the public communication and expertise on climate change;
- A lack of ambition of climate actions.

4.1.1 A lack of CSOs and citizens' involvement may lead to open conflicts

Some pilot regions observe a lack of involvement or information sharing of decision-makers with CSOs. If citizens are not included in the planning and decision-making process, then it is likely that a conflict will emerge between public authorities and the public concerned and that citizens will oppose strongly as their only solution left is protesting.

In other pilot regions, some formal mechanisms of citizen participation are almost systematically taking place for local or regional climate plans. However, these mechanisms are often seen as insufficient by CSOs, due to several reasons: some participatory mechanisms are only giving information; other include citizens consultation but without any accountability on the impacts of the consultation on the policy making process; mechanisms reaching only a small volume of people or only 'experts' etc.

Belgrade pilot region example: Citizens are not included in the planning and decision-making process

Over the last year in Serbia, and in the region (Albania, Bosnia and Herzegovina, Croatia) the issue of the usage of pristine rivers in protected areas to build mini hydro power plants, as a source of clean energy in Serbia, has emerged. Agreements, which Serbia signed, as a part of the accession process to the EU, obliged the country to increase the energy coming from renewable energy sources in the total share of energy production. One of the renewable energy sources, for which Serbia gives subventions in order to stimulate the process, are mini power plants.

Citizens were not involved in the planning of mini power plants construction in their local environments, and mini power plant construction affects the local community from many perspectives. Decisions are made behind closed doors, with mostly state and local government and business representatives involved. Even if citizens' involvement occurred, it was mostly after the action plan was already made. At that point, citizens are left with

no deciding power, leaving them with protesting as the only solution.

One of the numerous protests was organized by the initiative that an interviewed stakeholder presented: "*The aim of this particular action was to bring interested citizens, mostly activists and journalists to visit the construction site of mini power plants in order to raise awareness to the negative sides of these projects. They encountered a contra protest (citizens with direct interests in mini power plants and party members who support these projects, due to personal material interest), who tried to undermine the protest, by stating that NGOs are paid by foreign money, working for foreign interests...*"

Minsk pilot region example:

1/ The access of the research institutes and NGOs to the data, collecting by National Research Center "Ecologiya" is restricted due to bureaucratic issues

The only institute in the Republic of Belarus collecting data about emissions from all enterprises is Belarusian Research Center "Ecologiya" of the Ministry of Natural Resources. Accordingly, this Center has access to the project documentation of all enterprises in the country. The Institute of Environmental Management studies polluting emissions. The task is to assess the situation, calculate forecasts, consider all possible measures and offer the most optimal opportunities for achieving indicators according to the international standards. But the institute does not have any control or impact instruments. They cannot require the information from the Research Center "Ecologiya", therefore, they have to communicate with companies for investigation purposes directly. They have to write inquiries and face a lot of paper work to allow their employees to enter enterprises, just to measure emissions, not to detect problems at the enterprise, but to give advice or, rather, get information.

"*Enterprises are too skeptical of the work of the Institute on emissions research, considering our work as some kind of obstacle to the implementation of further activities.*"

2/ Experts from the key organizations dealing with urban planning are involved in national and regional climate change projects, whereas their organizations do not participate in developing climate policy

The climate policy is mostly developed by representatives of Ministries and Minsk City Executive Committee. The partners involved in developing the climate policies are investors or international experts, whereas the local key expert organizations – which are important stakeholders – are not involved.

"*Until now, Republican unitary enterprise "Belarusian Research Institute for Urban Planning", as an enterprise, was not offered to participate in the development of climate policy. Nevertheless, we are a key organization in Belarus, developing the main guidelines of territorial development and the urban development policy of the country as a whole for five years, territorial development schemes for regions, administrative districts, master plans for cities of the Republic of Belarus, taking into account SDGs*".

3/ The main impact instrument concerning the CO_2 emissions is within the power of Ministry of Natural Resources and Environmental Protection

The main institutes dealing with CO_2 emissions in the country are Ministry of Natural Resources and Environmental Protection, Belarusian Research Center "Ecologiya" and Institute of Nature Management of the National Academy of Sciences of Belarus. The Ministry of Natural Resources has a direct impact instrument, as

it issues permits to enterprises for emissions. Accordingly, the task of the Ministry of Natural Resources is to reduce emissions, but since they give permissions for emissions, they have instruments of influence.

4.1.2 Conflicts within public institutions or between public authorities' levels may hinder co-creative climate action

Interviews with stakeholders in the pilot regions allowed to identify several key conflicts within the "decision-maker" sector of the quadruple helix: there are conflicts within public institutions, for instance between administrative staff and elected representatives, or between institutional levels, for instance between national and local levels.

These conflicts may be contextualized: different views on energy transition, or a new repartition of competences between authorities in the context of lack of funding from central authorities for instance.

Difficulties may be also more structural: in some pilot regions, we observe a lack of coordination and communication between governmental levels – for instance in the same territory, the city council, the metropolis area and the regional level may not be aware that they are conducting similar plans and activities. In other pilot regions, the forms of communication between public institutions are one cause of conflicts.

Belgrade pilot region example:

1/ Conflict of interest between different governmental institutions

The conflict exists among policy makers, for example between two Ministries, Ministry of Energy, Transport and Mining and Ministry of Environmental Protection, raising the question of higher priorities on state agenda. Government has to protect their natural wealth, but also has to develop their economy.

Moreover, there is a problem of jurisdiction of governmental bodies, especially regarding protected natural areas. A Problem in Serbia is that governmental institution has jurisdiction over certain problems/issues/areas that is not clear and transparent enough.

Mostly when we talk about adaptation, there is no conflict of interest among policy makers. However, when we talk about mitigation, conflict rises.

There is a conflict emerging on what should be the path that Serbia should follow, which is in accordance with EU standards, related to mitigation of the effects of greenhouse gas (GHG), which is stated in the strategy of the Republic of Serbia on mitigation of GHG. For example, Serbian Ministry of Energy has sharp, negative comments and remarks on this document, since their view is quite opposing to this strategy, and coming from the fact that Serbia is still mostly producing energy from coal. Along with Ministry of Energy, there are big companies working in the field of energy production, operating in Serbia, that gain profit from coal mining.

Since our country is still oriented towards coal industry, it is hard to change this paradigm, and there has to be someone outside to lead this change. Because people do not see easy alternative to coal mining, since we are a poor country, it is hard to change the energy policy. At the same time, financial subsidies for the production of renewable energy are very rare.

2/ Defined policies at the official level and the capacity of the administration to implement that policy

In order to reach EU policy standards, many laws have been implemented, but unfortunately, the local administration lacks the capacity to follow. Implementation options are still not recognized in the field of climate change. The national level recognizes a clear policy in the field of climate change, but at the local level only Belgrade has an Action plan for adaptation to climate change. Other local policies very sporadically recognize these activities and implementation of adaptation measures is slow.

3/ Regionalisation is a kind of a meso level, where decision power does not exist. Decision making process is rather left on the level of local or state government.

Regions, or specific territories are really important to be defined as territorial unit (which is not the case in Serbia) and given decision power, especially in the context of protected areas, which quite often are divided by several municipalities, making it quite difficult to create policies and make decisions for the local level and by locals. Thus, decisions often go back to state government, which mostly has no insights on what is favourable to be done locally and they are not that effective as local government would be.

Thus, local communities come into conflict, since someone higher on the ladder is deciding for them.

French pilot region example: Conflicts between public institutions making the collaboration between stakeholders complex and slowing down climate action

They are some conflicts between the public institutions at local or regional levels due to historic or new distribution of competences, particularly important in the framework of decreasing state allocation of funds to decentralized institutions.

In the context of the French agriculture policies, there is a competition for the public funds allocated to historical agricultural institutes and emerging organizations working on specific agricultural themes, such as new ONVAR (Organisme National à Vocation Agricole et Rurale, National Organization with Agricultural and Rural mission).

As another example, the 2015 national law on the New Territorial Organization of the Republic (NOTRE) has modified the territorial organization at regional and local levels. For instance, some towns have merged into one organization and competences of the various levels have changed. These changes in the territorial administration have sometimes brought conflicts that are slowing down the implementation of public actions on climate change.

"There has been the territorial reform, the NOTRE law, which merged municipalities into communities of municipalities, and municipalities are still stuck in their fights of ego, either between elected representatives, or between administration services. Thus, there has not really been a program of action implemented in the three or four last years. They kept working on structural things for them, such as urban development of downtowns […] but there has not been strong structuring project at the scale of the territory. There have been many conferences on climate, conferences on sustainable development, circular economy, etc., but regarding the implementation, the number of projects is very limited".

Vechta pilot region example: Regulations regarding the communication between administrative staff and local politicians

The "strict" ways of communication sometimes lead to mutual incomprehension, which further triggers conflicts since the administration and the politicians are dependent from each other:
"The politicians are more or less laypersons. They only receive the written elaborations from us and we cannot directly discuss or talk to them to easily answer possible questions or issues. Consequently, the politicians sometimes make decisions that are not practicable since they just do not know if it is possible or not. But we cannot directly talk to them. Sometimes it would be helpful in preparation of committee meetings [of the local council] to directly talk to each other since we are more or less the professionals in the different fields. In addition, we could then further explain why we propose certain things so they gain a deeper understanding."

Poznan pilot region example: Conflict between local and central authorities due to financial issues

As a part of the Clean Air program, the Polish government co-finances activities to reduce air pollution. National and Provincial Funds for Environmental Protection and Water Management are responsible for the implementation of the program. However, in 2019, the Ministry of the Environment recommended municipalities to engage in implementation of the program without providing adequate funding for this purpose. This leads to a situation when municipalities have to carry out additional tasks (belonging to other institutions) at the expense of their current tasks.

These conflicts very often take place on a political dimension and result from a lack of cooperation and

agreement between the central government and local government. Another important feature of such misunderstandings is the lack of awareness regarding the distribution of tasks and responsibilities in the area of climate action between different institutions. In addition, the lack of a separate unit strictly responsible for climate policy within the structures of city and commune offices increases the problem.

Minsk pilot region example:

1/ The dominance of the sectorial approach
Different policymakers, experts and other stakeholders consider a problem just from their perspective and sectorial needs. There are many declarations, but few real attempts and extra-sectorial support to create integrated sustainable urban solutions, for example, urban neighborhoods adapted to climate change, which would act as drivers of the country's sustainable development. In cities, there are no administrative units responsible for climate policy.

"There is no clear understanding of why Belarus needs to reduce CO_2 emissions. Belarus is a country with low CO_2 emissions per capita (almost at the level of Sweden), therefore, I think the main ideological argument against further reduction will be the economic factor: 'We already have low emissions so that they are even lower, we need to modernize the main polluting industries and enterprises with high-tech equipment, but this requires money that is not there. There are no resources to pay salaries to people. Leave it as it is.'".

4.1.3 Tension between general and economic interests – "money VS environment"

Pilot regions stakeholders pointed out a conflict between public and economic interests, which can be summarized as a "money VS environment" conflict. Conflict exists between investors/businesses on one side, who have kind of short-term perspectives and represent private interests, and on the other side the local governments, which are in charge of environmental protection, have broader perspectives and represent public interests.

Several pilot regions' stakeholders also noticed that the economic interests – thus the companies and actors representing these interests – are rather absent from collaborative spaces for climate action initiatives.

Belgrade pilot region example: Conflict between public and private interest

For example, an investor would like to construct a building that covers the largest possible surface area, bringing him the highest possible profit. Thus, the investor would like to remove all the trees and green spaces from the construction area. Since trees are a very important adaptation measure, it is in the public interest to be preserved, so an expert committee appointed by the local governmental body in charge of environmental protection is there to assess whether it is possible to preserve trees. Moreover, they assign a value to those trees, so if the investor still wants to remove those trees, they have to pay a special contribution to the budget of the local government.

However, most of political decisions are based on arguments of "economic efficiency". In the fields of climate protection, it is hard to argue if economic efficiency is always the most important argument. There is still no stringent way that climate related consequences are considered with a high or ideally with the highest priority in each decision-making process. Furthermore, this appreciation of the economic efficiency has a very short-term focus, as we know that climate change effects are now and will to be very costly.

Vechta pilot region example: The image of climate protection vs. economic efficiency (in the short term)

New installation of water fountains in the administrative buildings. The usage of water cups made from recycled paper or which are compostable is too expensive so finally plastic cups will be provided.

"An issue that is basically always present in all decisions related to climate protection is the economic efficiency, if specific actions are economically efficient. This is because emissions just do not have a quantifiable value, so that we could say that if we make this decision it is less expensive for now but the consequences also have to be considered. […] The problem is that the argument 'This is too expensive' is a killer argument. […] At the moment, it is my feeling, that climate protection is still only a good image topic. And image things are joined until a certain degree but […] if it is really a matter of costs the policy makers have difficulties with it, since they do not see direct negative effects if they decide for the not really climate-friendly alternative."

The "money argument" against climate action often emphasizes the social impact of job losses due to the energy transition.

Poznan pilot region example: Termination of brown coal extraction in the eastern part of Wielkopolskie voivodeship (Region of Greater Poland) – "money vs. environment"

The decision to discontinue brown-coal mining (using open-cast method) in the Konin-Turek Basin was made for ecological and economic reasons. Ecological aspects result from the need to reduce CO_2 emissions in Poland. Economic aspects result from the decreasing profitability of brown coal processing and energy production as a result of its combustion. An increase in profitability would require large technological investments. The brown-coal industry generates a lot of jobs, which is another important economic and social aspect of this conflict.

The decision results in a conflict of interests. The main claim group is formed by former employees of mines and plants and firms associated with the brown-coal industry. They expect their employment will be continued without changing their qualifications. Local authorities try to prove that continuation of coal mining in this region will lead to stagnation and recession. On the one hand, residents protest against the loss of their sources of income, and on the other hand, they praise the improvement of the quality of the environment. Other stakeholders are individual eco-activists and NGOs acting for environment protection by the liquidation of brown-coal mines. Regional government intervenes by supporting the Konin Area of Strategic Intervention, developing renewable energy technologies and focusing energy management on hydrogen processing.

4.1.4 Conflicts due to different interests and visions on how to tackle climate change

Climate change policies and implementation projects may divide stakeholders, mainly because different groups have different interests or visions of what should be done to tackle climate change. This difference often leads to different ambitions, from the most ambitious on meeting climate change mitigation or adaptation objectives to simple "greenwashing" strategies with low impact. This place on this scale is often related to the private interest of each stakeholder.

French pilot region example: Competitions between organizations over the implementation of public policies linked to expertise legitimacy and ambition visions

The reduction of State spending led ministries to edict policies and let partner organizations becoming suppliers leading the actions and implementing the policies. Thus, new public policies linked to climate change led, and may lead in the future to competitions between stakeholders. The competition is a race for funding, but not only. The race is also mostly about the recognition of who is a recognized expert and legitimate in some specific field, and which approach is going to be implemented between an ambitious one and minimalist one.

A competition and divergence of visions may also occur now in the context of the revision of the Low Carbon National Strategy and the development of future Low Carbon Labels. As one stakeholder said *"The divergence will be the content: I believe there will be approaches least demanding, meaning 'we communicate, we implement a control but not too far, and we achieve the objectives in terms of numbers to show, we reached a certain number of farmers' […]. And there is a second approach: we want real content, checking the sourcing even if it means having less people, but we believe that after all that will allow a real societal recognition, because it will not have been only greenwashing."*

Poznan pilot region example: Conflict of interest resulting from road modernization plan

The construction of a bicycle path as part of the development of sustainable transport[31] has become an excuse for the local authorities to modernize the national road. Improving the technical conditions of the road and its broadening will allow to introduce the transport of lorries and increase speed. The authorities' argument is that it needs access to a nearby hospital. Among the residents, the largest objection is cutting down 50 trees; they want to protect the city's natural values, all the more because it is located in the buffer zone of a national park. Residents protest against air pollution and noise associated with more intense traffic. In their opinion, the character of the city will change, it will become a transit place for neighbouring towns. Residents argued also that the EU subsidies in the implementation of such a road modernization plan would be used contrarily to its purpose. Local authorities ignore the problems, which is the reason for the escalation of the conflict.
The conflict results from divergent interests between the local government bodies (Puszczykowo Town Hall and Poznań County Office) and non-governmental organizations (e.g. Ekologiczne Puszczykowo Association), residents, entrepreneurs and other local activists.

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[31] The project of county road modernization will be co-founded from EU in the framework of a bigger concept "Poznań Metropolitan Railway". Its goals should be a part of the action to reduce CO_2 and improve air quality. The project will achieve this aim by creating a bicycle path, but at the same time assumed broadening the road and cutting down 50 trees to form a compact alley along the road. Ecological Puszczykowo Association together with residents objected to this plan. Their aim was to protect the trees from cutting down and not allow to increase air pollution due to more intensive car traffic.

4.1.5 Conflicts over fake science and public communication manipulation

The conflict exists between climate sceptics, who try to undermine all the scientific facts coming from academia, which are addressed to increase awareness to the importance of citizens' involvement in climate action.

Belgrade pilot region example: Disagreement between climate sceptics and experts

One of our interviewed stakeholders from academia had several experiences with climate sceptics, who by using pseudo-scientific evidence, try to undermine his and other scientists' authority in the public. This is leading to the decrease in the impact that the experts would have on the public.
Also, when some companies working in fuel industry found out what are the speeches of our stakeholder about, they excluded him from a conference that they supported, stating that the panel he was supposed to talk on was cancelled.

Many political decisions seem to be made without considering knowledge from expert input provided during the process. For experts, it seems that emotions or specific unwanted consequences are more important in policy making than scientific facts.

Vechta pilot region example: Emotions vs. facts in policy making and the powerlessness of the opposition

"Doing politics is more often based on emotions; this peaks in sentences such as 'In a professional way you are right, but in politics we are not able to get this through at the moment. This brings oneself to the limits and demotivates extremely. […] Politic is often arbitrary."

For different stakeholders, the press represents a very powerful means to influence the public. Conflicts can occur when certain issues are not presented in all their complexity (only using black and white terms). It also happens that a misuse of data can occur. So, if circumstances are presented in a wrong way, it leads to an incorrect perception and understanding for citizens. Since newspaper readers often do not have time to read all articles completely, headlines have to be as catchy as possible, but this might distort the real message.

Vechta pilot region example: Local press is a key stakeholder with its own objectives and big impact on local opinion formation

"In the public, and especially in the press, things are often presented in black and white terms[32]."

An experience made by a person from one of the smaller opposition parties in the pilot region is that the press does not report on topics offside the regional mainstream (e.g. new ways of thinking about the whole 'transformation process'). This has a huge impact on on-going processes and the press can somehow be used as a control system.

"The two parts (political work and the press) are inoperative regarding a system change. And since the press does not provide space for thoughts about a necessary radical change, it functions as a strong brake of a promising transformation process."

4.1.6   A lack of ambitions of climate actions

Some pilot regions' stakeholders highlighted the insufficient commitments towards climate action and the excessive modesty of the actions taking place.

Several stakeholders mentioned also the gap between discourses on climate change and action. There seems to be a lot of communication, conferences and media coverage of this issue, but funds and concrete actions are more difficult to implement. Some stakeholders consider that this is due to an ideological block of elected representatives or administrative personal in governmental institutions.

Barcelona pilot region example:

1/ Insufficient commitment towards climate action

There is still not enough social commitment nor sufficient political leadership. This is essential to carry out the drastic measures demanded by the fight against climate change (adaptation and mitigation). The urgency and the political prioritization are still conditions not present enough. Much remains to be done in the area of public awareness as well. All of this results in the lack of long-term planning and short-term capacity for action.

2/ Excessive modesty of the actions

Scarce resources destined to the fight against climate change and, therefore, difficulty to translate the intentions into concrete actions. As stated in one of the interviews, *"we have a legal and strategic framework, but we must accompany the energy [transition] emergency situation with tangible and sustained actions over time"*.

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[32] In order to protect personal data, data of interviewed persons have been anonymized

Minsk pilot region example: lack of awareness about Climate Change issues by decision-makers

The importance of climate policy in Belarus on different government levels is underestimated. There is a lack of a broad dialogue and a clear understanding of the urgency of the problem, as well as a lack of determination to act together, to change something upon broad agreement.

For example, the key actors on climate adaptation and mitigation on governmental level in Minsk city is the Ministry of Natural Resources and Environment Protection and the subordinated Minsk City Committee on Environment Protection, whereas there are some agencies like National Research Institute "Ecologiya", Belarusian Hydrometeorological Center and some other state organizations, which take up an official position, that Belarus has very low level of CO_2 emissions (like in Sweden) and there is no need to undertake some structural transformations. Yet the individual experts and NGOs offer a different opinion and talk about the need to change the attitude to the topic not just within community but also on higher levels.

There is a slight change in the mind-set for climate action. Although we find them in a planning level more than on the action level, we detect some changes in the current model are already taking place. In this regard, references to new energy models, a revision of consumerism, sustainable mobility or efficient water management are becoming more frequent.

Barcelona pilot region example: Concrete small-scale initiatives

There is a growing number of specific small scale initiatives in the Barcelona metropolitan area such as: the super-islands ("super illes") or low-emission zones in Barcelona, the implementation of new waste collection systems, hybrid dunes and the recovery of the Llobregat and Besos rivers, climate refuges/shelters and urban gardens, experiences of green walling, new energy operators, the first local experiences of circular economics, the promotion of the use of bicycles or the decrease in the use of plastics just to name a few. Most of the networks are collaborative in nature, but without being structurally collaborative and using specific collaborative methodologies.

4.2 Difficulties to engage multiple stakeholders

Engaging with stakeholders is the first step to start a co-creation process. However, public engagement is challenging, especially on climate change, which may be frightening or sensitive, or seen as too big to tackle.

Identifying these challenges is a good starting point for any co-creation process. Within TeRRIFICA pilot regions, the challenges for engagement identified are:
- Difficulties due to the format proposed, especially regarding time and money;
- A difficult communication on the specific issue of climate change;
- Some mistrust or too trustful relation to public bodies and policy-makers;
- The common challenge of engaging new stakeholder groups that are not necessarily yet convinced by the issue.

4.2.1 Technical difficulties: lack of time, funding, and increased solicitations

▪ **Constraints of time and money**

One common obstacle to stakeholder engagement pointed out is a technical obstacle linked to everyone's constraints.
Stakeholders may have different constraints to engage in co-creation activities. Are they paid if they participate into a co-creation seminar? Can they participate within their working time or leisure time? Are the activities organized in the capital city or in rural areas? When is the right time to organize a workshop?

Yet, projects and activities are often structured in a way that encourage the participation of the "usual" stakeholders and hinders the participation of others, less easily reached by these participatory activities.

The main constraints identified are the **lack of time** and the **voluntary involvement.** Citizens often lack time and have limited attention to be easily involved in climate change issues and actions. The same issue goes with policy-makers: public bodies are often understaffed and civil servants are more and more invited to participate to co-creation activities. Many interviewers have stated, that they would participate at multi-stakeholder meetings on climate issues, but just due to other priorities, too much workload or logistics issues, they prefer not to be involved.

In a more structural perspective, there is also a gap between the time for research and for projects. Research is a long-term process, which is not always compatible with the timeline of a 3 years project. Thus, **the challenge is to embed the project into a longer-term process.** As a consequence, researchers may have more time to implement high quality methodologies to gather data or to participate in seminars, whilst other actors may have different constraints that hinder their participation.

Therefore, people would be even less willing to engage and use some of their limited time and money if they do not see that their **participation has a real impact** and that their view is properly taken into account.

Belgrade pilot region example:
1/ Lack of time and limited attention of the citizens

Challenge regarding involving citizens is that they often lack time. In Serbia, there are a lot of people that have to work on more than one job in order to support their families, so they do not have enough time and will to participate in public debates.
People have limited attention, and they are not ready to give their free time in vain. They want to be assured that if they contribute, it will be meaningful and their involvement will have eventually some tangible effect, which is mostly not the case in Serbia.
Moreover, there are a lot of actions going on, and climate change is something that is not easily getting people into action, because it is a thing that is going on for years, and people cannot easily relate to it emotionally.

2/ Understaffed public bodies

Governmental bodies are understaffed, due to the ban on employment in public institutions that started five years ago in Serbia.
Moreover, there is an increase in the number of events, conferences, projects going on related to climate change, and too few people working in the local government on this topic.
However, this demand cannot be met due to the low number of people working in local government, which is a consequence of the ban on employment in public bodies lasting more than five years in Serbia.

Moreover, this is a problem in all public bodies, so representatives from other public institutions due to shortage of staff don't have people appointed for climate change, and don't see that as a priority.

Minsk pilot region example: lack of support from the local and regional authorities

The local authorities do not show concern with climate issues on the local level. Their representatives from high level (mayors or their deputies) mostly ignore the invitations to the workshops and trainings organized by NGOs or partners consortia, because of policy reasons – the problem of climate change is not indicated as a crucial one in the directives from the lead government departments and as a matter of fact, neither local authorities employees, no other local state organizations representatives get travel allowances from their organizations for participation in the workshops at regional level.

Also, there is a *"Lack of initiative by local authorities. The problem of logistics. It is difficult for participants to get from administrative regions to regional cities. The banal lack of travel allowance. Key persons at the level of mayors or deputy mayors may ignore meetings for one reason or another[33]. "*

Poznan pilot region example: Involvement of schools (teachers and pupils) in climate actions in the region

A challenge identified in the region regards the sector of education and to be specific elementary schools. As stated by a representative of one of non-public school:
This is very difficult for us to plan such activities for a few reasons: one is limited funding and the need to look for additional resources. The second one is lack of time. You need to be aware that if you want to organise e.g. climate strike you need to decide which class you have to devote/dedicate to such actions. In other words, you need to choose between history lessons or ecological event. These are not easy decisions especially for a school management, as we are obliged to realise first of all the obligatory programme. Another dilemma is to decide how many pupils/teachers you need to involve. Children are usually very well motivated and do not need additional incentives, but with teachers, it is another story, as it is always done on the costs of private life or free time.

French pilot region example: Funding and projects' logistics are not adapted to various stakeholders.

For instance, funds allocated to co-creation activities often do not include budget for paying stakeholders participation. This structure does not necessarily hinder the participation of researchers or public institutions representatives. However, engaging for example farmers is then challenging as they are not only unpaid for the time spent on those activities, but the work that has to be done in the field is not. Several stakeholders mentioned the importance of planning funds for farmers' replacement if there is the will to engage with farmers.

- **The importance of the design/format of engagement activities**

Furthermore, some stakeholders experienced a way of **workshop-tiredness** since there are so many workshops being organized with a similar set-up in different societal relevant fields. It might also be a problem that they do not see direct outcomes or even impacts of the workshops since quite often the emphasis of the workshops is on discussion rounds.

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[33] In order to protect personal data, data of interviewed persons have been anonymized

The selection of the format is tricky: problems in the co-creation process can occur when the format is not adapted to the target group. This also includes if there is no flexibility in the format or the workshop/event is planned too theoretically for the participants.

Vechta pilot region example: Number of offered workshops in all the different societal relevant fields

"No one is happy anymore about invitations to workshops since in all sectors, the social sector, the environmental sector, workshops are offered."

Barcelona pilot region example:

In Catalonia there is a long and prolific experience in processes and spaces of citizen participation. An experience, however, that has often not been completely positive and many participants have experienced frustration. This has generated "participatory fatigue".

In addition to unsatisfactory results, the very proliferation of spaces and processes has also generated tiresome participation. Lots of these spaces overlap. An example is Barcelona where the Sustainable Barcelona Network co-exists, without knowing it, with an inclusive Barcelona Network. Both are related, but work separately and without meeting points.

4.2.2   Difficulties to communicate on Climate Change

▪ **Climate change appears as a very broad issue**

Climate change appears as a very broad issue so it is difficult to show personal benefits to engage for climate change. Climate change is just a big topic, so that it can be difficult for people to see and/or understand the relation to them. They do not see the consequences for them and/or what they could contribute to this topic. So, talking about climate adaptation or climate mitigation is not specific enough. Besides, for many people participation seems to be directly linked with an incentive. If they do not see this incentive or at least a personal benefit they will not engage.

Vechta pilot region example: Topic is sometimes not clear enough, lack of personal benefit

"My feeling is that the topic [climate change] has not really reached the citizens, yet."
Another interview: "For many people topics like climate change, climate adaptation […] do not really mean much for them in their everyday life or they cannot see the connection to their own region or their own 'little cosmos'. They ask themselves what does that mean for us – climate change and climate adaptation. Often, this very wide topic leads to the feeling 'Well, what can I do about this? I cannot stop the climate change by myself anyway. "

▪ **Weak and contradictory messages**

Some of the respondents of the survey refer to the contrast between the strength of certain pressure groups interested in minimizing the impacts of climate change with the diffuse perception of a major part of citizens regarding this situation. If we add to this circumstance both the low media coverage and the frequent contradictions in the institutional messages, the result is a loss of power of the message and urgency for action, and, consequently, the potential of participation by the various actors and the citizens as a whole.

▪ **A lack of awareness on the importance of climate change**

Two pilot regions identified a need for shaping awareness on climate change, how much it is important and is impacting both humans and the environment. They observe that stakeholders and citizens are more and more getting interested in the topic of climate change, however it is mostly on a very superficial level. They are not educated enough through formal channels, and if they are educated informally, mostly it is superficial.

Poznan pilot region example: Shaping awareness of the importance of climate change and its impact on humans and the environment

Shaping awareness is based on three elements: knowledge, motivations to take action and skills.
In each of the groups of stakeholders involved in the conflict related to the road modernization plans, the awareness of the risks arising from its implementation was low. Particularly visible were the gaps in ecological knowledge about the benefits for humans, the environment, and climate that result from the functioning of trees, and what risks are associated with cutting them down. The deficiencies also apply to ignorance of laws and regulations. This results in the marginalization of the problem by the authorities, and the involvement of only the Ecological Puszczykowo Association and a small group of local activists to counteract adverse plans. Lack of knowledge about the significance of the problem does not stimulate motivation to take action.

For the main stakeholder determined to modernize the road[34], the arguments about the need to protect trees, their natural and aesthetic values, and their importance for the landscape were irrelevant. The plans did not take into account the principles of nature protection and ignored good practices. In the discussion with opponents, weak arguments were used that the trees along the road pose a danger to drivers and could be removed by the road manager (which is against the law). In the respondent's opinion, this was largely due to the lack of awareness, and in particular to the lack of comprehensive knowledge. On the authorities side, however, there was no will to use expert knowledge and look for alternative solutions. Similarly, on the part of residents, the misunderstanding of the risks associated with cutting down trees and the increase in pollution caused by heavy traffic, caused a lack of willingness to get involved, sometimes perceiving the activities the association and activists as strange and exaggerated.

▪ **Complex or unclear language**

According to some stakeholders from pilot regions, citizens do not understand the complex language related to climate change issues, which presents an important barrier in citizens' involvement. As a citizen, you would have to be well informed and prepared in advance if you want to join a public debate, which is rather complicated for many citizens (see time and money constraints described above).

Minsk pilot region example: The information about climate change for broader public should be thoroughly prepared and presented in clear and transparent language

While working with various stakeholders, there should be paid attention on proper reporting and processing information. In particular, citizens do not need to understand the topic in very detail, but it is important for them to understand why they collect information and how it will be further investigated and what results will be expected.

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[34] See example mentionned above.

4.2.3   Specificities of the policy maker – citizens' relationship

Pilot regions identified difficulties to engage with citizens due to historical relationships between the general public and public authorities:

- **Not enough proximity to the public**

The public does not see the administration as a supportive institution. Most of the citizens do not use direct contact to responsible administrative staff (e.g. climate protection officers). So, their individual problems or ideas do not get to the persons who could work on or with them. However, for a working overall system, the administration is dependent on this information.

Vechta pilot region example: Not enough proximity to the public

"We are here and we could do things, but for certain target groups we probably would not offer the right things. So, for this it is very difficult that there is no way to get together. […] In my opinion, this is still the case: In the administration, we do not appear people-oriented. It does not happen that citizens just drop in and tell us a specific idea and ask for a cooperation."

- **The socialist legacy**

Citizens had full confidence in the government and general notion was that all decisions made were oriented towards public interest.

Belgrade pilot region example: Socialist legacy

Serbia is in the process of transition towards democratic society, however some citizens still retained their mind-set deriving from socialist regime, where they had full confidence in the state making the decisions, and where everything was in the public property, and thus all the decisions were perceived as in the public interest. Our interviewed stakeholder believes that today this leads to the fact that citizens are sometimes apathetic. Also, this is a problem from entrepreneurial perspective of a democratic society.

- **Lack of sense of agency among society**

One main challenge is to create among society the sense of agency (sense of control). People should know that their opinions and ideas do really matter and can change the reality.

Poznan pilot region example: Lack of sense of agency among society
According to some stakeholders, in Poland exists the serious problem in this context, what seems to be one of the most serious challenge and barrier to involve stakeholders. Civil society is still under construction and people are not active because of the sense that nobody from public authority's side listens to them. Society is not aware of possibilities of impact on policy-makers decisions.

The conclusion about low level of sense of agency among society is the result of general activity of Poznan Science and Technology Park and its participation in many projects (i.e. P4Trans, CASI, CIRCE2020), which included goals referring to public participation and co-creation. Within these projects, the citizen panels were organized in different countries (i.e. Poland, Spain and Great Britain). The problem of low level of people's activity was observed in each country, especially in Great Britain, where people were paid for attendance to workshops.

One of the most important factors of the low level of sense of agency in Poland is lack of public engagement

traditions (historical reasons) and limited time resources (especially possessed by entrepreneurs). Respondents pointed out also, that one of the main reasons is the wrong way of understanding the term "participation". It cannot be just a listening to the people without giving them proofs, that their opinions will be surely included in real actions.

4.2.4 The challenge of engaging new or unconvinced stakeholders

One important challenge is to engage with different types of audiences and "unconvinced stakeholders". Several interviewed stakeholders identified this difficulty. Co-creation projects often involved "already convinced" stakeholders and existing networks of actors.

Several stakeholders explain their difficulties to engage with new stakeholders by a lack of understanding of their subject, or even prejudice and false ideas on the subjects.

Therefore, co-creation experiences tend to be elitist or biased, because they generally involve only the most active actors of the sector and some types of actors are not at all participating.

French pilot region: Difficulties of engaging with new stakeholders when the subject is not easily understood

For example, a CSO working on agroforestry would like to work more with national organisations and networks working on generalist environmental issues or specialised in the climate change issue. However, an interviewer identified that one of the difficulty to engage with those partners is to explain the subject of agroforestry: environmentalist organisations may misunderstand the topic or believe that agroforestry is non-essential and a detail in the larger issue of climate change.

Minsk pilot region example: the enterprises don't have an experience on developing climate change adaptation plans

The companies have no experience in developing plans for adapting to climate change and reducing the consequences of these changes as separate types of planning documents. However, climate sustainability issues are indirectly studied in each section of the year plans. The main practice is the organization of regional training seminars on improving territorial planning and showcasing real international cases in the field of climate resilience for local authorities, public organizations and business representatives. But they are provided mostly within certain international project activities and are not accessible for everyone.

"Theoretically nothing hinder my participation in meetings, conferences and other involvements on climate change, practically – the everyday workload."

4.3 Difficulties to co-create

Co-creation is an ambitious program: it requires ensuring the horizontality of all stakeholders, a shared decision power and the opportunity for all to participate in the co-creation process at any time. It is not surprising that there are many challenges:

- Working together with different languages, values, objectives and interests is an important barrier;
- There is a lack of culture and habit of the co-creation process for many stakeholders;
- Linked to this point, there may be a resistance to change;
- The societal hierarchies are easily reproduced in a co-creation process.

4.3.1 Working together with different languages, values, objectives and interests

One important co-creation challenge identified by several TeRRIFICA stakeholders is that co-creation requires working and co-developing a project/activity/vision with people who may have different professional languages, different values, and potentially partly divergent objectives and interests.

- **Differences of culture and language may accentuate divergences**

Organizations and institutions may have different cultures and differences of languages that may add to deeper divergences of visions, and thus leading to open conflicts and slower / more difficult discussions.

- **Differences in values, visions and commitment to climate change**

The general approach is that climate action requires multi-stakeholder action, and therefore, collaboration between actors is a must. However, the perception of the level of commitment for climate actions differs widely between sectors. Academia and higher education institutions are considered the most active, while the private sector and media are seen as having a medium-low commitment to the cause.

Several stakeholders are convinced that having similar or compatible values is a condition to co-create. Stakeholders noticed an increase of big companies solicitations in the field of climate change. If there are historical collaborations and even co-creation processes between science, policy-making and CSOs, stakeholders seem less comfortable with big companies due to a lack of habit and a certain suspicion of different values and even greenwashing strategies.

French pilot region example: Differences of values and visions
For instance, on value divergence: *"I find it difficult to work with people, who probably have the same ideas and objectives as I have, but who are plagued with some scandals, as I sometime say. For example, there still are amongst our partners willing to develop agro-ecology in a general sense, people would strongly believe that we will do it thanks to glyphosate." […] "And there is another value conflict, which is more questionable: […] for example, what to do with the structures […] which have objectively a part of their activity dedicated to build with concrete and monopolize agricultural lands? "*

- **Differences of objectives and interests**

A barrier to co-create on climate change is the different objectives and interests of stakeholder groups.

Belgrade pilot region example: Mini hydro power plants construction example:

There are different interests of policymakers, government, business and NGOs.
Business stakeholders are mostly interested in profit that they could get from mini power plants, and government is supporting them, because it complies with the agenda that they have to fulfil regarding going towards clean energy. Policy makers have to meet the EU requirement for clean energy, and they are blindly following the number stated in the Strategy, saying that 2% of the energy that should derive from mini power plants. However, both business and government representatives, have not thoroughly studied issues that might come along with mini power plants construction, such as nature devastation, that would actually make larger impact on climate change, that mini power plants would bring good.
On the other side, citizens are left, whose interest is to preserve nature, to use their rivers, in the way they used to (e.g. to feed cattle, etc).

Specificity of the conflict in climate change comes from the fact that citizens themselves are also not united, and some of them might see only personal interests, for e.g. why should we save the forest for all, when we can get the money from wood today.

▪ **Trust**

Divergent interests can add to **a lack of trust between some stakeholders**, whilst trust is a core condition for co-creation.

> **Poznan pilot region example: Lack of trust between partners and divergence of interests**
>
> The main barrier at the very beginning of cooperation is the lack of trust between partners and divergence of interests. Poznań Metropolis Association identified these barriers in implemented projects involving many partners e.g. within the project the Educational Anti-Smog Network or Poznan Metropolitan Railway. In the first case there was many partners representing different interests (local governments, scientific institution, central government organization, NGOs, local activists, citizens and private companies - contractors). The aim was to fight for the improvement of air quality in Poland. Multiple and diversity of partners was a big challenge and caused that it was hard to ensure shared understanding.

▪ **The divergence of interests and concrete challenges**

Claiming that a process is a co-creation one is not enough: the co-creation is possible if we can ensure that all stakeholders' interests and constraints are taken into account. Particularly, grant calls are often not adapted to co-creation as they do not leave enough time to partners to form a group and co-create. Co-creation also requires methodologies to foster the success of the partnership.

> **French pilot region example: Forgetting stakeholders interests and constraints, the example of open data**
>
> As an example, open data may be challenging when having a different expertise and literature resources and data are an added value of an organisation. Thus, data sharing is possible if there are counterparts: *"[…] we need to keep our legitimacy which comes from the fact that we have resources and expertise. […] Furthermore, […] I am ok to fill in the database but there must be three weeks of work. […] who is going to pay us for that? […] I find it very well to have a database on a global website, with everybody contributing, but there must be counterparts and a very clear partnership framework."*

4.3.2   Lack of co-creation culture

▪ **Variable culture of co-creation and lack of knowledge on the co-creation method**

Co-creation is not common within policy-making institutions, business, CSOs and scientific institutions. Several stakeholders noticed the difficulty to co-create with actors who do not have the "culture" of co-creation. There is also a lack of knowledge regarding the co-creation method: for many people collaborating methods are completely new to work with and they do not have any knowledge or experience with it.

> **French pilot region example: Variable culture of co-creation**
>
> For example, a CSO representative explained how they must have raised their voice for a governmental institution to recognise their important place in their field – only the technician consultant of the traditional public institution were mentioned whereas the CSO included more of them. The interviewer explained this foresight by a lack of habit to consider CSOs as legitimate actors and stakeholders.

▪ **Stakeholders may have difficulties finding their place regarding the climate change issue**

Various stakeholders do not see their role in climate change, since they are not educated enough on this topic.

Belgrade pilot region example: Stakeholders don't see their role in climate change adaptation and regulation
Interviewed stakeholder was involved as an expert a few times in writing important strategies related to climate change for the Republic of Serbia. He states that it is a challenge to find experts from various fields (health, transport, biodiversity, etc.) from academia and from government to get involved with this topic, since they do not see their exact role in the process.
Moreover, they do not know how to put their job in the context of climate change, but rather they continue their "story", meaning that they stay confined in their specific job. This is noted among all stakeholders.

Vechta pilot region example: People do not feel competent enough to take part in co-creation processes

For many people in our region, the work in co-creation processes is completely new. Thus, the expectations towards them and their role in the process might not be clear for these people, which lead to discomfort. In addition, they might not see their own competence to join such a process or they just do not feel comfortable at all with discussion / interactive formats.

One stakeholder stated: *"If we have events e.g. regarding the renovation of houses many people come. […] The need for information is there. But if the focus is on exchange, declaring their own opinion or discussions, I have the feeling people do not dare to join."*

Another said: *"In participation and co-creation processes a focus is on discussions and talking with each other. And it must be said quite clearly, that it is not everyone's cup of tea to have such a culture of discussion or to feel comfortable to work in groups."*

And a third one*: "All these topics assume knowledge among the participants. […] It also calls the persons in a way. […] We need to think about, how we can empower the persons from our profession in a way so that they are able to take part in these discussions."*

- ▪ **There is a lack of willingness and institutional mechanisms for involving citizens**

Mostly citizen's opinion is taken into account only through elections, and after that, citizens are rarely observed as a real stakeholder, thus government does not perceive as a necessary step to include citizens in decision making process.

Belgrade pilot region example:
1/ Government and business does not always recognize need for citizens involvement

Regarding especially strategic interests for the country, such as mini hydro power plants construction, decision is in the hands of the state, and not in the hands of local government. Thus, citizens do not have easy ways to be included. Moreover, citizens are not aware of the problem, and thus wake up only when decisions are already made, and implementation of the project started.
Also, businesses are not aware that citizens are stakeholders in this process, because the government does not present them as stakeholders in decision-making process. Thus, the government can neglect their needs completely.

2/ Mechanisms for participation and negotiation are practically inexistent

Respondents also refer to some operational deficits, such as the lack of effective participation and negotiation mechanisms. There have been many initiatives but the methodologies to involve citizens do not generate the expected results (i.e. engage a sufficient number of stakeholders or citizens – critical mass).

4.3.3 Resistance to change

▪ **Resistance to change regarding climate change issue**

There is a resistance to change with respect to the dominant model, with references both to the socio-economic model and to the mobility or energy model. New patterns of consumption, new mobility models and supporting the circular economy are required. However, resistance is explained by the lack of awareness and general sense of urgency regarding the intensity and crucial need for action to face climate change by the different sectors, but also by the comfort of "business as usual" for most actors.

In this direction, for example, it is considered that media coverage of this issue is not adequate to create/motivate both civic involvement and change in the political agenda.

Poznan pilot region example: Lack of residents willingness to change their behaviour and habits in the field of reduction of air pollutants emission

As part of the Educational Anti-Smog Network project, a series of workshops were held for residents in all communes of the Poznań Metropolitan Area. The main goal of the workshops was to change the awareness of the residents regarding air quality issues and to persuade them to take actions to reduce emissions of air pollutants. Unfortunately, the workshops were not very popular, which could be caused by the lack of willingness of residents to change their behaviour and habits in this field. The second reason could be the lack of financial resources to change these behaviours ("energy poverty"- in 2018, 17% of Poles had problems with maintaining a warm home or apartment).

The Clean Air Program aroused great hopes among the society, and de facto the requirements set by subsidiaries meant that it is no longer so attractive. The formalities to be fulfilled by the person submitting the application mean that the average resident is not able to meet these requirements alone and very often resigns from applying for support and even from the implementation of the investment. Poorly set access criteria and financial thresholds determining the level of co-financing, and at the same time high technical requirements for co-financed projects, make the program available only to a small part of the society or provide limited financial support to the citizen.

▪ **Difficulties to adapt new postures for co-creation**

Working together is made difficult when involved people have the strong belief that suggestions from others are criticism of their own work. So, collaborations are more or less seen as a way that 'the others want to tell me what to do'. An effective joint working atmosphere is hard to set up or even impossible. Furthermore, many people are not open for new methods or different opinions

Vechta pilot region example: People stick to their familiar way of thinking

"Every new request from the politicians is seen as criticism of the administration and not as a support and help."

4.3.4 The challenge of not reproducing hierarchies between stakeholders

One starting point of co-creation is to acknowledge all stakeholders knowledge and to state and ensure an equally shared decision-power amongst co-creation partners.

However, it is challenging not reproducing the existing power hierarchies between stakeholders, whether these hierarchy relationships are objectives or in terms of symbols.

- **The lack of respect towards other partners knowledge**

It is an issue because in some situations while working together, project partners look at issues from their perspective without trying to understand others perspectives

Belgrade pilot region example: Lack of respect for partners

Green infrastructure experts do not regard water experts with sufficient respect and do not respect the fact that without adequate irrigation and sufficient quantities of water, there is no survival of the plants. And vice versa hydrologists, dealing with the available amount of water, very often see only the aspect of water supply to humans, neglect the needs of plants and animals.

- **The challenge of existing relationships and dependencies between stakeholders**

Maybe especially in a region with smaller cities and more or less rural areas, it is highly probable that the participants know each other from a different context or that there is a dependency between them. Even though, it is pointed out at the beginning of the workshop that these hierarchies do not play any role in the process, for some participants it might be difficult to not consider the existing dependencies when engaging in the process.

Vechta pilot region example: Existing dependencies between the stakeholders, group dynamic processes

"People try to not have the existing hierarchies in mind, but when we are together and I still think about that this is the mayor and this person is a local CEO and I am only a citizen. It is important to regularly emphasize that all opinions are equally considered and hierarchies do not play any role in the process."

The lack of independence, or more generally, the suspicion of the lack of independence towards funders may hinder the co-creation by creating a lack of trust between partners. For instance, the facilitator may be seen as an evaluator working for the funders. The researcher might be seen as a "consultant" for the funder.

French pilot region example: The issue of the independence towards funders

One stakeholder mentioned that there was a conflict between a company and a public municipality over the construction of a damn. The researcher was funded by the public institution and felt that he was considered as a consultant office who would have to write complaisant conclusions. The researcher felt very quickly the situation and decided not to study this specific field of investigation. However, he identified a suspicion from some stakeholders of a lack of independence towards the financing public institution.

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Annex 1 – Organizing a workshop – blueprint for a 2-days workshop from BLOOM project.
This blueprint intends to help partners to organize co-creation workshops: not only to pick the methodologies that fit the purpose but also to think of all organizational details for a smooth workshop.

Start	End	Duration	Topic	Goal of the subtopic	Details	Method	Who?	Materials needed
Day 1								
09:00	09:15	00:15	Welcome		Host welcomes participants and introduces the goals and not-goals of the workshop and the agenda. Brief introduction of project.	presentation	Host	Projector for presentation, or prepared flip charts.
09:15	09:35	00:20	Getting to know each other	**People know each other, and break the ice between them**	Participants position in the room according to questions: - Where are you from (European map) - Stand in a row according to first letter of first name - Stand in a row according to size/shoe size/ .. - How much pre-knowledge do you have about climate chanbe adaptation? (theoretical and practical in two steps)* - How experienced are you in science communication? * Facilitator asks some of the participants, why they stand there, what they do, examples, and who of them undertakes outreach activities.	Sociometry	facilitator	Enough space in the room. Can also be outside. Put tables and chairs on the side.

Start	End	Duration	Topic	Goal of the subtopic	Details	Method	Who?	Materials needed
09:35	10:00	00:25	Finding commons	**People know each other, and break the ice between them**	3 min: introduction in the process 20 min: Visualise commons and individualities 3 min: 1 min elevator pitch per group Participants build groups of 4-5 people (if there are people who already know each other, they should split in different groups). Each group has a poster and should visualize what they have in common but also what are their individual skills/characteristics/background	Joint poster		3-4 Flip Charts (for each group one), Flip Chart pens in different colours
10:00	10:30	00:30	Introduc-tion round	**Each participant know everybody's professional background and reason why to be here**	In circle of chairs all participants take place. With the help of talking object which is passed around in the circle, everybody has the room to introduce his/herself. They should introduce: - their name - Background and affiliation - Why they are here	Dialogue in a circle		Sufficient room for a chairs circle. Talking object.

Start	End	Duration	Topic	Goal of the subtopic	Details	Method	Who?	Materials needed
Day 1								
10:30	10:50	00:20	Coffee break					
10:50	11:20	00:30	Defining Climate chanbe adaptation	**Entering the topic. Open the thoughts.**	Groups of 4, maximum stakeholder mix. Each group discusses the following question: *What does climate chanbe adaptation contain?* (Blue cards)	Discussion in break out groups		Sufficient blue and red cards for 4 groups. Sufficient pens.

					What does climate chanbe adaptation not contain? (Red cards) and notes the single aspects on the cards accordingly. Only one aspect per card! Note: no definitions, but single elements/activities/aspects (Blue card: e.g. plastic made out of bio-based materials; red card: e.g. vegane nutrition)			
11:20	11:30	00:10	Defining Climate chanbe adaptation	**Visualisation of climate chanbe adaptation aspects**	Plenary discussion. Facilitator clusters aspects of each group in one big picture.	Clustering		Pin Wall, pins, Coloured cards in a third colour for clusters, Pens in different colours
11:30	11:50	00:20	Defining Climate chanbe adaptation	**State of the art of climate chanbe adaptation**	One BLOOM hub expert on climate chanbe adaptation presents the BLOOM understanding of climate chanbe adaptation (WP1). Slides from Wageningen!	Presentation		projector
11:50	12:30	00:40	Defining Climate chanbe adaptation	**Common picture**	Moderated plenary discussion. Reorganisation of big picture according to the discussion. Shifting cards according to three circles (definitely part of climate chanbe adaptation, partly part of bioecnomy, and definitely not part of climate chanbe adaptation)	Panel discussion		Three coloured pens, for three circles.

Start	End	Duration	Topic	Goal of the subtopic	Details	Method	Who?	Materials needed
Day 1								
12:30	13:30	01:00	LUNCH					
13:30	13:35	00:05	Energizer	**Overcome the after lunch coma**				
13:35	14:35	01:00	Bioecnomy topics	**Collecting and discussing challenges and benefits of climate chanbe adaptation**	Three tables with three different fields: 1. Economic aspects 2. Ecological aspects 3. Social aspects Spread all participants in three equally sized groups. Define one table host, who stays always on one table and summarized the prior discussed aspects, and also presents the results in the plenary afterwards. Make two rounds. 20 min each round, discussing challenges and benefits of climate chanbe adaptation. In the third round (20 min) put together a list of main challenges and benefits in two columns on a flip chart.	Topic Coffee		Each table one Flip chart on the table and one on a flip chart holder. Pens in different colour per table.
14:35	14:45	00:10	Bioecnomy topics	**Display of results**	Presentation of lists in plenary by hosts.	Presentation	Hosts	
14:45	15:00	00:15	Coffee break					

Start	End	Duration	Topic	Goal of the subtopic	Details	Methode	Who?	Materials needed
Day 2								
09:00	09:05	00:05	Welcome		Host welcomes groups for day 2 and introduces the agenda of day 2.			

09:05	09:25	00:20	Check in round	**Reflection of the first day. Collecting further inputs/ideas**	All participants including facilitator sitting in a circle. Talking object goes around. Only the person speaks who hold the talking object.	Dialogue format		Talking object
09:25	10:25	01:00	Define activities/ materials	**The group has decided on one activity/material to continue working on**	Participants stay in same groups and start the Disney method to narrow down their ideas. At the end they should agree on one Idea to further prototype. Process: The group "goes together through three houses": 1st: The dreamer: The group dreams about which outreach activities/materials they would like to do. Think out of the box, don't restrict yourself. 2nd: Realist: Now the group discusses practicalities. Which ideas can be taken up and how can they be implemented. First ideas will already be discarded. 3rd: critique: Checks barriers, difficulties, possible obstacles. Checks feasibility. In the following rounds, the still existing ideas are enhanced, reworked, discussed. This process is	Disney method		Flip Charts, Post-its, coloured cards, pens

| | | | | | repeated till the group comes up with one idea which they regard as doable within the BLOOM hub. The group decides individually how to visualize to be able to work with this method. E.g. on a flip chart, Pin wall, cards, post its, etc. Note: The hub decides what the workshop focuses on. Either activities OR materials. | | | |

Start	End	Duration	Topic	Goal of the subtopic	Details	Method	Who?	Materials needed
Day 2								
10:25	10:55	00:30	Coffee break		As the participants stay in their own group, they can use the break for exchange.			
10:55	11:55	01:00	Prototyping	**First draft of model**	Group work according to their interest/target group worked on. The groups will need to build a tangible prototype of the activity/material they have selected to prototype. The prototype can be visualized in various ways: a wall of post-it notes, an assessment grid, a mock-up, a role-playing activity, a space, an object, an interface, or even a storyboard or a model with the provided materials. - it should contain all information necessary for the others to comprehend and implement the idea.	Prototyping		Sufficient materials for creative work. Coloured cards, sissors, a sting, playdow, game figuers, etc., different papers, lego

11:55	12:40	00:45	Reflection round	**Feedback from other groups for each group.**	First two groups, group A presents their prototype 10 minutes, group B listens, group c and D observes, group B can ask questions for understanding (5 minutes), group B exchanges thoughts, ideas, feedback, comments and input, group A only listens. Then change of roles: group B presents, group A listens, C and D observe Note: Tandem feedback strengthens the quality of feedback.	Tandem feedback with observers		
12:40	13:25	00:45	Lunch					
13:25	14:10	00:45	Reflection round	**Feedback from other groups for each group.**	First two groups, group C presents their prototype 10 minutes, group D listens, group A and B observes, group D can ask questions for understanding (5 minutes), group D exchanges thoughts, ideas, feedback, comments and input, group C only listens. Then change of roles: group D presents, group C listens, A and B observe	Tandem feedback with observers		

Annex 2 - List of interviewees (by semi-guided interviews or questionnaires) and methodology

CSOs		
Right to water, CPE	Serbia	NGO
Afac	France	NGO
Representative of local city council and member of nature protection organisation (NABU)	Germany	Politics and NGO
EcoServeis	Spain	CSO
EcoServeis	Spain	CSO
EKOlogiczne Puszczykowo Association	Poland	CSO
Public Association "Green Economy"	Belarus	NGO
Science		
Expert on climate change	Serbia	Academia
Faculty of Architecture	Serbia	Education
Researcher in Geography	France	Academia/Education
University of Oldenburg	Germany	Research
ACUP	Spain	Academia
ACUP	Spain	Academia
ACUP	Spain	Academia
ACUP	Spain	Academia
UAB	Spain	Academia
UB GRC Meteorologia	Spain	Academia
UdG	Spain	Academia
UPC	Spain	Academia
UOC IN3	Spain	Academia
UOC IN3	Spain	Academia
UOC IN3	Spain	Academia
UAB	Spain	Academia
RISC3	Spain	Consultancy
RISC3	Spain	Consultancy
Social School of Piątkowo District in Poznan	Poland	Science/Education
Institute of Nature Management of the National Academy of Sciences of Belarus	Belarus	Research
Policy-making		
City of Belgrade	Serbia	Public Administration
Ministry Civil Servant	France	Public Administration
City of Cloppenburg	Germany	Administration
AMB	Spain	Public administration
AMB	Spain	Public administration
AMB	Spain	Public administration
AMB	Spain	Public administration
OCCC	Spain	Public administration
PEMB	Spain	Public administration
PEMB	Spain	Public administration
CADS	Spain	Public administration

Poznań Metropolis Association	Poland	Local government
Marshall Office of the Wielkopolska Region	Poland	Regional government
Republican unitary enterprise "Belarusian Research Institute for Urban planning"	Belarus	Governmental bodies, research
Business		
Dvoper	Serbia	Business
SCIC Bois Bocage Energie	France	Business
Regional Farmers Association (Kreislandvolk)	Germany	Business and Association
ARSU GmbH (working group for environmental and regional planning and research)	Germany	Business and extra-university research
Cetaqua	Spain	Private sector
Cetaqua	Spain	Private sector
MatHolding	Spain	Private sector
Poznan Science and Technology Park	Poland	Business
Water Utility Company Aquanet S. A. in Poznań	Poland	Business
Facilitators		
French facilitator	France	Facilitator
French Facilitator	France	Facilitator
Others		
Expert Climate Change - freelancer	Spain	Other
Projecte Re-City - Fundació Catalunya Europa	Spain	Other
Projecte SeeRRI	Spain	Other

Interview grid:

- ***Questions to identify key conflicts amongst key local or regional actors in the climate policy making context and recommendations:***
    - *What is your involvement in the climate policymaking context?*
    - *Who are, according to you, the key actors at local/regional level who are involved in the climate policymaking?*
    - *What are the divergences of opinions/objectives/interests amongst those key actors?*
    - *Have you already experienced some conflicts when working/volunteering on tackling climate change? If yes, could you describe the context, the conflict and how it ended?*
    - *What are the specificities of conflicts in the context of climate change policymaking?*
    - *What are the potential solutions and methodologies to avoid conflicts to occur? And could you explain with an example?*
    - *What are the potential solutions and methodologies to manage conflicts? And could you explain with an example?*

- ***Questions to identify challenges in engaging stakeholders for climate mitigation and adaptation and recommendations:***

- o *What is your experience of stakeholders' engagement, and particularly in the climate policymaking context?*
- o *What are your own constraints that hinder your participation in meetings, conferences and other involvements on climate change?*
- o *What are the barriers you have identified when you conducted activities to engage stakeholders?*
- o *What are, according to you, the important aspects to pay attention to when communicating on climate mitigation and adaptation actions in order to better involve stakeholders?*
- o *Could you describe methodologies and their results you experienced to engage with multiple stakeholders? Are the methodologies different depending on the profile of the stakeholders? If yes, which one?*

- **Questions to identify challenges in co-creating for climate mitigation and adaptation and recommendations:**
  - o *What is your vision/definition of co-creation?*
  - o *What is your experience of co-creation, and particularly co-creation in the context of climate policymaking?*
  - o *What are, according to your experience, challenges and barriers to co-create with multiple stakeholders? In which context have you identified these challenges/barriers? Do they arise from the stakeholders or their nature, from the context, from what is at stake, from anything else?*
  - o *Could you describe methodologies and their results you experienced to foster or smooth the co-creation process? How did these methodologies help solving the barriers previously described?*

Annex 3 – Methodology for good practises analysis

A good practice can be defined as a "successful experience that has been tested and replicated in different contexts and can therefore be recommended as a model. It deserves to be shared so that a great number of people can adapt and adopt it[35]."

As this guide is a starting point for the pilot regions to experiment stakeholders' engagement and co-creation methodologies, good practices in this guide were identified by various stakeholders on their past experiences. However, this guide is seen as an adaptive framework that may help pilot regions when facing issues with stakeholder participation, rather than a fixed model to follow.

Good practices identified in this guide may be recommendations or methodologies:

- A recommendation is a suggestion or proposal as to the best course of action;
- A methodology is a system of methods or a procedure for accomplishing something.

In other words, the guide may only identify recommendations advising on what to pay attention to in order to co-create with multiple stakeholders; or also one step further, identify methodologies explaining how to concretely implement this recommendation.

Objectives of the good practices:

- **Good practices for conflict management** allow to prevent conflicts, to stop the conflict or to manage the conflict so that it does not impede the policy making process on climate mitigation and adaptation.
- **Good practices for stakeholder engagement** allow to involve diverse and relevant actors in a sustainable engagement and to increase existing networks.
- **Good practices for co-creation** allow the involvement of all stakeholders at each development stage (from the design of the activities to the use of the outcomes), varying potentially according to their relevance.

Criteria defining a good practice:

- Pursue one of the stated objectives;
- Identified by pilot region stakeholder as a successful methodology;
- Methodology replicated or surely replicable in different contexts (for instance, noticed by stakeholders from several pilot regions).

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[35] http://www.fao.org/capacity-development/resources/practical-tools/good-practice-tool/en/