Own Your SECAP

Strengthening Municipal Capacity for Climate Adaptation: Tools for Systematic Integration

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Contents

INTRODUCTION 3

1. WORKING GROUP 5

2. RISK AND VULNERABILITY ASSESSMENT 16

3. IDENTIFICATION AND IMPLEMENTATION OF ADAPTATION MEASURES 20

4. MONITORING 25

ANNEX I. DESIGN THINKING APPROACH IMPLEMENTATION IN OWNYOURSECAP 29

Introduction

Institutionalisation refers to embedding a practice, behaviour, or system into the regular functioning of an organisation or society, ensuring it becomes a stable and accepted norm. This is essential for achieving the long-term and sustainable integration of new initiatives.

Although awareness of climate adaptation is increasing, there are still several unresolved challenges. The ***OwnYourSECAP*** project, in collaboration with municipalities from 11 countries, has tested various tools and methodologies to address these challenges, fostering smoother institutionalisation of climate adaptation.

This report presents the main outcomes of our efforts to prepare and test tools and approaches that facilitate the smoother institutionalisation of climate adaptation in municipalities. It outlines four key procedures municipalities can use to integrate climate adaptation into their operations:

1. **Establishing a Climate Adaptation Working Group or Integrating Climate Adaptation into an Existing Energy Group**: Based on ISO 14092 standard, this procedure guides how to address climate adaptation within a municipality. It covers the main aspects, including roles and responsibilities and action planning.
2. **Risk and Vulnerability Assessment**: Utilising the methodology developed by the Covenant of Mayors office, this procedure outlines how municipalities can assess climate-related risks and impacts.
3. **Identification and Implementation of Climate Adaptation Measures**: This section provides a framework for identifying and executing effective climate adaptation strategies.
4. **Monitoring Climate Data and Measures**: This procedure emphasises the importance of ongoing monitoring to track the effectiveness of implemented climate adaptation measures and to ensure data-driven decision-making.

By following these procedures, municipalities can enhance their capacity to institutionalise climate adaptation, ensuring a more resilient and sustainable future. It is a systematic approach to be conducted once in a year or in two years (see figure below).

For every municipality, whether they have an established SECAP or climate plan or are in the process of developing one, it is crucial to have a clear understanding of their current level of systematic processes for climate mitigation and adaptation practices. Equally important is recognising the potential for collaboration between municipalities and act on regional level. To assist municipalities in this endeavour, the ***OwnYourSECAP*** project has developed a template for an internal audit. The internal audit template[1] serves as a valuable tool to evaluate the municipality's performance in implementing actions outlined in their SECAP (or similar document) over the last 2-3 years. It provides a comprehensive assessment of the municipality's existing energy and climate action plans and policies, as well as the required competencies, data acquisition, and management. Through this audit, municipalities can gain a clear overview of their strengths and barriers, such as organizational, financial, and political factors, influencing the systematic implementation of SECAP measures.

[1] Available on: https://www.ownyoursecap.eu/wp-content/uploads/2024/09/Final_template_internal_audit_eng-1.xlsx

Fig 1 - four key procedures for municipalities to integrate climate adaptation into their operations

By utilising this template, municipalities can identify areas that need improvement and build upon their existing strengths to enhance the effectiveness of their climate mitigation and adaptation efforts. It serves as a valuable starting point for municipalities to take stock of their progress and pave the way for a more systematic and successful implementation of climate actions in their communities.

1. Working group

Starting point

Effective adaptation to climate change requires strong political will and commitment from municipalities. This chapter outlines the key components of a robust political decision-making process and policy framework to guide municipalities in planning and implementing climate change adaptation measures. Municipalities may have different starting points, ranging from those with existing Sustainable Energy and Climate Action Plans (SECAP) to those without established plans.

Municipalities need to recognise the importance of climate change adaptation and its potential impacts on their communities, infrastructure, and natural resources. Building public awareness and gaining political support are crucial for successful adaptation strategies.

A well-established and clearly defined organisational structure is crucial for successful adaptation to climate change in municipalities. As each city has its unique structure and workflow, it is essential to integrate climate change adaptation measures effectively. This chapter outlines multiple organisational structures to help municipalities plan and implement climate adaptation effectively, with a specific focus on the ISO 14092 approach.

Here are questions municipalities should consider when creating an effective working group for climate adaptation or considering integrating it with an existing energy group:

#	Questions to consider if a new climate adaptation group will be created	Questions to consider for integrating climate adaptation into an existing energy group
1	**What are the objectives and goals of the working group?** *Define the primary purpose, short-term objectives, and long-term goals of the working group.*	**What are the current objectives and activities of the existing energy group?** *Review and understand the current focus and operations of the energy group to identify alignment opportunities.*
2	**Who should be included in the working group?** *Identify key stakeholders, including representatives from different municipal departments, local experts, community leaders, and relevant external organizations.*	**How can climate adaptation objectives be aligned with the energy group's goals?** *Determine how climate adaptation efforts can complement and enhance the existing goals of the energy group.*
3	**What are the roles and responsibilities of each member?** *Clearly outline the specific roles and responsibilities for each member to ensure accountability and effective collaboration.*	**Who are the current members of the energy group, and what are their roles?** *Identify existing members and their roles to understand the group dynamics and integration points.*
4	**What skills and expertise are needed in the working group?** *Determine the necessary skills and expertise required, such as knowledge in*	**What additional skills and expertise are needed to incorporate climate adaptation?**

#	Questions to consider if a new climate adaptation group will be created	Questions to consider for integrating climate adaptation into an existing energy group
	climate science, urban planning, risk management, and public policy.	*Assess the need for new skills and expertise related to climate adaptation and how to integrate them into the existing group.*
5	**How will the working group be structured and organized?** *Decide on the organizational structure, including leadership roles, subcommittees, and communication channels.*	**How can roles and responsibilities be adjusted or expanded to include climate adaptation?** *Define how the current roles can be modified or new roles created to cover climate adaptation tasks.*

Outcome

An effective working group for climate adaptation can lead to many different positive outcomes. Some of them are summarised in the figure below.

Enhanced Resilience

- The working group's efforts can significantly increase the municipality's capacity to withstand and recover from climate-related impacts, such as extreme weather events. This resilience is crucial for protecting the community, maintaining infrastructure stability, and ensuring economic continuity.
- Example: In response to recurring flooding, the working group facilitates the installation of advanced drainage systems and green infrastructure, like rain gardens and permeable pavements, which help absorb stormwater and reduce flood risk.

Comprehensive Adaptation Plans

- A working group enables the development and implementation of thorough and effective climate adaptation strategies and policies. These plans are tailored to the specific needs and vulnerabilities of the municipality, ensuring targeted and efficient responses to climate challenges.
- Example: The group with technical assistance (if needed) develops a Sustainable Energy and Climate Action Plan that includes measures such as retrofitting buildings for energy efficiency, establishing heatwave protocols, and planting urban forests to mitigate urban heat island effects, all based on localized climate data and projections, and afterwards supervises the implementation of the plan.

Cross-Sector Collaboration

- The formation of a working group fosters strong partnerships across municipal departments, with community stakeholders, and external organizations. This collaboration enhances the pooling of resources, sharing of expertise, and coordination of efforts, which are essential for comprehensive and unified climate action.
- Example: The working group collaborates with local universities, private businesses, and non-governmental organizations to launch a joint initiative that leverages the university's research capabilities, business innovations, and NGO outreach networks to enhance public engagement and implement sustainable technologies across the community.

Activities

No matter if a new or integrated working group is created, here are the main steps to follow for a working group:

1. Setting objectives and goals of the climate adaptation working group. These are, e.g.:

- Assess Climate Risks and Vulnerabilities: Identify and evaluate the specific climate-related challenges and impacts facing the municipality.
- Develop and Implement Adaptation Strategies: Create and execute effective strategies and measures to mitigate identified risks and enhance resilience.
- Integrate Climate Adaptation into Municipal Planning: Ensure climate adaptation is incorporated into all relevant municipal policies, plans, and operations.
- Enhance Public Awareness and Engagement: Build public understanding and support for climate adaptation initiatives through education and outreach.
- Monitor and Evaluate Adaptation Efforts: Continuously track the progress and effectiveness of adaptation measures, adjusting as needed for improvement.
- Foster Collaboration and Partnerships: Collaborate with internal departments, external organizations, and stakeholders to leverage resources and expertise.

2. Identify members of the working group. The climate adaptation working group should include:

- Municipal Representatives: Officials from relevant departments such as urban planning, environment, infrastructure, and emergency management.
- Technical Experts: Specialists in climate science, risk assessment, and sustainability.
- Community Leaders: Representatives from local communities and neighbourhoods.
- Stakeholders: Members from local businesses, non-profits, and academic institutions.
- Policy Makers: Elected officials and policymakers to provide strategic guidance and support.
- External Partners: Representatives from regional, national, and international organizations involved in climate adaptation.

3. Define the roles and responsibilities of each member in the climate adaptation working group, e.g.:

1. Municipal Representatives:
    - Coordinate climate adaptation efforts across departments.
    - Implement and oversee adaptation measures within their domains.
2. Technical Experts:
    - Provide scientific and technical advice.
    - Conduct risk assessments and develop adaptation strategies.
3. Community Leaders:
    - Represent community interests and concerns.
    - Facilitate community engagement and awareness initiatives.
4. Stakeholders:
    - Offer insights and resources from their sectors.
    - Support the implementation of adaptation measures through collaboration.
5. Policy Makers:
    - Advocate for and endorse climate adaptation policies.
    - Secure funding and legislative support for adaptation projects.
6. External Partners:
    - Share best practices and resources.
    - Collaborate on regional and broader-scale adaptation initiatives.

4. Consider what skills and expertise are needed. In the ideal case as more experts are included the better, however municipality should consider what are the needs and what it can afford:
   - Climate Science: Understanding of climate models, projections, and impacts.
   - Risk Assessment: Ability to identify and evaluate climate-related risks and vulnerabilities.
   - Urban Planning: Knowledge of integrating climate adaptation into land use and infrastructure planning.
   - Environmental Management: Expertise in managing natural resources and ecosystems under changing climate conditions.
   - Engineering: Skills in designing resilient infrastructure and systems.
   - Public Policy: Experience in developing and implementing climate adaptation policies and regulations.
   - Community Engagement: Proficiency in engaging and educating the public about climate adaptation.
   - Project Management: Ability to plan, execute, and monitor adaptation projects effectively.
   - Data Analysis: Skills in analysing climate data and monitoring adaptation outcomes.

5. Brainstorm and select most appropriate structure of the working group for your municipality. There are at least two options to consider:

Option #1: Two-Level Organizational Structure based on ISO 14092:2020 which proposes a two-level organizational structure comprising the Core Decision-Making Team and the Facilitation Team addressing climate adaptation issues in the municipality.

The Core Decision-Making Team consists of key stakeholders responsible for high-level decision-making. It should include the following members:

- Mayor or equivalent position.
- Executive Director or equivalent.
- Leaders of departments with decision-making authority, e.g. Development and/or Technical departments etc.
- Other relevant decision-makers in the municipality, e.g. relevant maintenance companies and main utilities.

The Core Decision-Making Team roles and responsibilities should be empowered to:

- Make decisions necessary to enable the implementation of adaptation plans.
- Take accountability for formulating robust adaptation plans.
- Support relevant management structures in implementing planned measures.
- Mobilize financial resources for adaptation initiatives.
- Approve and support the actions of the Facilitation Team.
- Effectively communicate the importance of climate change adaptation and demonstrate the support from municipal leadership.

The Facilitation Team comprises members from relevant departments responsible for sectors and areas impacted by climate change. Consider adding experts in climate science, disaster management, ecosystems, economics, social sciences, etc., to enhance the team's expertise.

The Facilitation Team roles and responsibilities should be the following:

- Establish a comprehensive work program with defined responsibilities and timelines.
- Coordinate the entire adaptation process and ensure steady progress.

- Identify challenges and difficulties in the adaptation process and develop innovative solutions.
- Promote collaboration among different municipal departments and structures.
- Encourage continual improvement in adaptation strategies.
- Share information on adaptation measures and their implementation, particularly concerning monitoring and evaluation.
- Engage with stakeholders to foster their involvement in the adaptation planning and implementation process, including public participation events.
- Regularly update the Core Decision-Making Team on progress and seek approvals when required.

Option #2: Integration with Existing Energy Management System (EnMS) (ISO 50001) and/or Environmental Management System (EMS) (ISO 14001)

Municipalities with an established EMS (ISO 50001) or environmental management ISO 14001 may already have a working group responsible for EnMS and/or EMS implementation. If this group possesses the necessary competencies, they can be delegated to handle adaptation efforts. However, if the group lacks the required expertise, it is advisable to create a separate working group with relevant members.

Few examples of different working groups are presented at the end of this chapter.

6. Consider what resources (financial, technical, human) are needed to support the working group for the next year or two. Required resources will depend on the ambitions of the municipality, however, here are some examples of what costs could occur:

- Financial Resources:
  - Budget for Projects: Funds to design, implement, and maintain adaptation projects.
  - Grant Funding: External grants and subsidies for climate adaptation initiatives.
  - Operational Costs: Expenses for meetings, workshops, and day-to-day operations.
  - Consulting Fees: Payment for external experts and technical consultants.

- Technical Resources:
  - Data and Modelling Tools: Climate data, risk assessment models, and/or Geographic Information System (GIS) mapping software.
  - Technical Equipment: Monitoring devices, computing hardware, and software for analysis.
  - Research and Reports: Access to latest climate adaptation research, studies, and reports.
  - Information Systems: Integrated databases and information management systems.

- Human Resources:
  - Dedicated Staff: Full-time employees or designated personnel for climate adaptation tasks.
  - Expert Consultants: Climate scientists, urban planners, engineers, and policy advisors.
  - Training Programs: Professional development and training sessions for skill enhancement.
  - Community Volunteers: Local community members and stakeholders engaged in adaptation activities.

7. Discuss how will the working group communicate and coordinate internally and externally. Here are some of the methods:
   - Internal Communication and Coordination
     - Regular Meetings: Scheduled in-person or virtual meetings for updates, discussions, and decision-making.
     - Collaborative Tools: Use of shared digital platforms (e.g., email, Slack, Microsoft Teams) for ongoing communication and document sharing.
     - Task Assignments: Clear assignment of tasks with timelines, using project management software to track progress.
     - Internal Reports: Regular progress reports circulated among members to keep everyone informed.

   - External Communication and Coordination
     - Stakeholder Meetings: Periodic meetings with external partners, stakeholders, and community representatives to share progress and gather input.
     - Public Outreach: Use of public forums, newsletters, and social media to communicate with the broader community.
     - Partnerships and Collaboration: Direct coordination with external organizations, experts, and agencies through joint initiatives and information exchange.
     - Official Reports: Preparation of formal reports and updates for municipal leadership and other relevant authorities.

8. Elaborate what will be the decision-making processes within the working group. These could, e.g.:
   - Consensus Building: Decisions will be made through group discussions, aiming for consensus among members to ensure buy-in and shared commitment.
   - Voting Mechanism: For decisions where consensus is not reached, a voting process will be used, with each member having equal input.
   - Expert Consultation: When specialized knowledge is required, the group will consult relevant experts before making decisions.
   - Regular Meetings: Scheduled meetings will be held to review progress, discuss issues, and make decisions on ongoing and upcoming activities.
   - Documented Decisions: All decisions will be documented in meeting minutes, ensuring transparency and accountability.
   - Feedback and Revisions: Decisions will be periodically reviewed and adjusted based on feedback and changing circumstances.

9. How will the working group measure and evaluate its progress and impact?
   - Key Performance Indicators (KPIs): Establishing specific KPIs to track progress on objectives, such as the number of implemented adaptation measures or community engagement activities.
   - Regular Monitoring: Ongoing collection of data related to project milestones, resource utilization, and outcomes, using monitoring tools and methodologies.
   - Periodic Reviews: Conducting quarterly or biannual reviews to assess achievements, challenges, and deviations from the plan.

- Feedback Mechanisms: Gathering feedback from stakeholders, community members, and external partners to assess the effectiveness of initiatives.
- Impact Assessment: Evaluating the long-term impacts of adaptation measures on resilience, resource efficiency, and community well-being.
- Reporting: Compiling findings into regular progress reports and an annual summary to inform continuous improvement and future planning.

10. Prepare and discuss the timeline for the working group's activities. Here (the infographic on the right side) is an example of a one-year timeline for integrating climate adaptation into an existing energy group.

11. How will the working group engage with the community and other stakeholders?

- Public Consultations: Hosting forums, workshops, and town hall meetings to gather input and feedback from the community.
- Stakeholder Collaboration: Partnering with local organizations, businesses, and interest groups to involve them in adaptation initiatives.
- Outreach Campaigns: Using social media, newsletters, and community events to raise awareness and educate the public about climate adaptation efforts.
- Surveys and Feedback: Conducting surveys and soliciting feedback to understand community needs and adjust strategies accordingly.
- Advisory Committees: Forming advisory groups that include community leaders and stakeholders to guide decision-making and ensure diverse perspectives.
- Transparency and Communication: Regularly updating the community and stakeholders on progress, decisions, and upcoming activities to maintain trust and engagement.

12. What are the potential challenges and risks, and how will they be managed?

- Divergent Priorities: Members may have conflicting goals or priorities.
  - Management: Facilitate open discussions to align objectives and reach consensus.
- Resource Constraints: Limited financial, technical, or human resources may hinder progress.
  - Management: Prioritize key initiatives, seek additional funding, and leverage partnerships.
- Lack of Expertise: Insufficient expertise in certain areas of climate adaptation.
  - Management: Engage external experts and provide targeted training for members.
- Communication Breakdowns: Miscommunication or lack of coordination among members.
  - Management: Establish clear communication protocols and use collaborative tools for transparency.
- Resistance to Change: Resistance from within the municipality or community to adaptation measures.
  - Management: Increase stakeholder engagement, build awareness, and demonstrate benefits.
- Unforeseen External Factors: Unexpected events (e.g., political changes, natural disasters) impacting progress.
  - Management: Develop contingency plans and maintain flexibility to adapt to changing circumstances.

13. Brainstorm how will the working group ensure sustainability and continuity. Here are some aspects that could be adapted for the local needs:

- Long-Term Planning: Develop long-term goals and strategies and/or incorporate them in the other municipal planning strategies that extend beyond immediate project timelines to ensure ongoing commitment to climate adaptation. E.g.:
  - Develop a 10-year roadmap with clear milestones and review points.
  - Align climate adaptation goals with broader municipal sustainability and resilience plans.
- Institutional Support: Secure commitment and support from municipal leadership and key departments to embed climate adaptation into core municipal functions and policies. E.g.:
  - Secure endorsements and formal commitments from municipal leaders.
  - Integrate climate adaptation objectives into the official city or municipal strategic plans.
- Capacity Building: Continually train and develop staff and new members to maintain a high level of expertise and preparedness within the group. E.g.:
  - Schedule regular training sessions and workshops with experts in climate science and policy.
  - Establish mentorship programs within the group to foster skill development and knowledge transfer.
- Documentation and Knowledge Management: Maintain comprehensive records and documentation of activities, decisions, and outcomes to facilitate knowledge transfer and continuity. E.g.:

- Use a centralized digital platform to store all documents, reports, and data.
- Create a standardized procedure manual that details all processes and methods used by the group.

- Succession Planning: Identify and prepare future leaders and key personnel within the group to take over roles as needed, ensuring smooth transitions. E.g.:
  - Identify potential leadership candidates early and involve them in decision-making processes.
  - Provide leadership training and shadowing opportunities to prepare them for future roles.
- Regular Evaluation and Adjustment: Implement regular review and evaluation mechanisms to adapt and refine strategies, ensuring they remain effective and relevant. E.g.:
  - Set annual review meetings to assess the effectiveness of strategies and make necessary adjustments.
  - Implement a feedback mechanism to collect insights from stakeholders and community members to guide updates and improvements.

Responsibilities

A designated individual must take responsibility for either establishing a new working group focused exclusively on climate adaptation or for integrating climate adaptation into an existing energy group. In the case of integration, ideally, the leader of the current energy group should spearhead this initiative. This leader would be responsible for engaging existing group members and other colleagues in the process.

For the formation of a new group, a climate or environmental specialist within the municipality is typically well-suited to initiate discussions with upper management. Alternatively, the mayor or the executive director could take on this role. Crucially, the person chosen should possess a strong motivation to address and carefully consider all elements necessary for fostering an effective working environment. This includes ensuring the group has clear goals, adequate resources, and a structured plan to achieve its objectives. Additionally, fostering a collaborative atmosphere and maintaining open lines of communication with all stakeholders will be key to the group's success.

Examples of working groups

***Example #1:* Two level organizational structure**

In the scheme of organizational structure in Figure 2, the municipality has taken a proactive approach to integrate climate adaptation into its Sustainable Energy and Climate Action Plan (SECAP). To ensure efficient and effective implementation, they have decentralized the responsibilities to various existing working groups within the municipality, each possessing relevant expertise.

Specifically, the implementation of climate adaptation measures has been entrusted to a dedicated group comprising three key commissions: the Greenery Monitoring Commission, the Environmental Commission, and the Public Health Commission. These commissions, well-versed in their respective

areas, are ideally suited to address the challenges posed by climate change and develop tailored adaptation strategies.

On the other hand, when it comes to climate change mitigation, the municipality has adopted a strategy of allocation based on topic relevance. This approach ensures that each aspect of mitigation is handled by the most suitable group with expertise in that domain. For instance, mitigating climate change in the transport sector has been assigned to the Transport Infrastructure Commission, which specializes in transportation-related matters. Concurrently, the responsibility for enhancing energy efficiency has been assigned to the Energy Efficiency Group, a dedicated body responsible for initiatives concerning housing, industrial practices, and other services and businesses.

By adopting this decentralized organizational structure, the municipality optimizes its climate action efforts by tapping into the expertise of various existing commissions and groups. This approach not only promotes a collaborative and coordinated approach to climate change mitigation and adaptation but also streamlines the decision-making process and fosters an environment where each group can focus on their respective area of competence, ultimately contributing to the overall success of the SECAP.

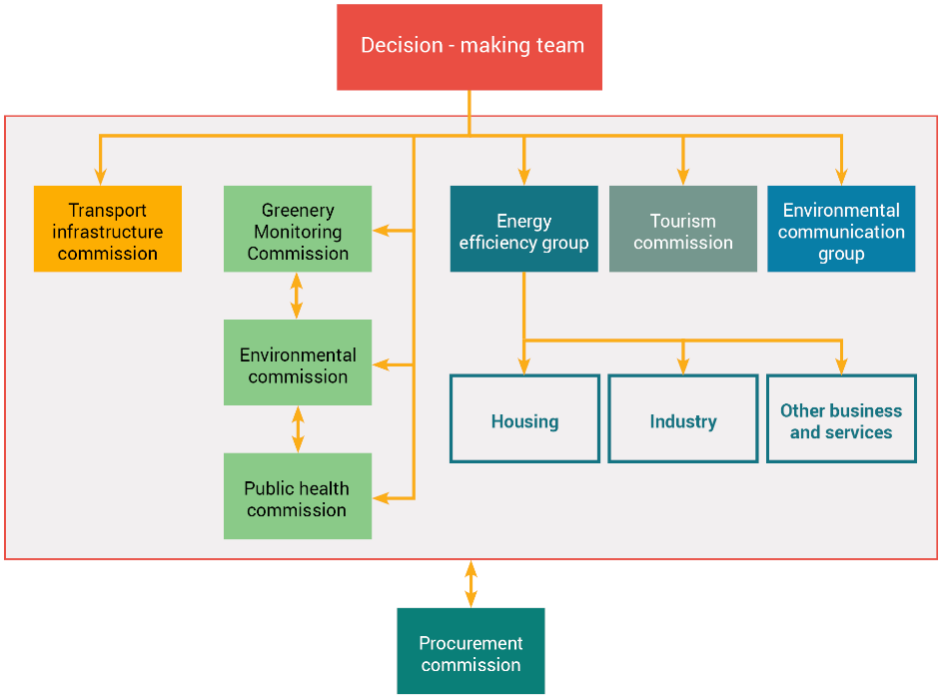


Fig. 2 - scheme of decentralized organizational structure

***Example #2:** New climate adaptation working group*

In this approach the municipality has adopted a more centralized organizational structure. This model involves the establishment of dedicated working groups for both adaptation and mitigation, each comprising relevant representatives from various departments and sectors within the municipality. The purpose of this centralization is to ensure a coordinated and comprehensive approach to addressing the challenges of climate change and fostering sustainable energy practices.

The Adaptation Working Group focuses on developing strategies and actions that enhance the municipality's resilience to the impacts of climate change. This group consists of representatives from key departments and administrative bodies, each bringing their expertise and perspective to the table.

The Mitigation Working Group focuses on reducing greenhouse gas emissions and promoting sustainable energy practices across the municipality. This group brings together representatives with expertise in different sectors contributing to emissions.

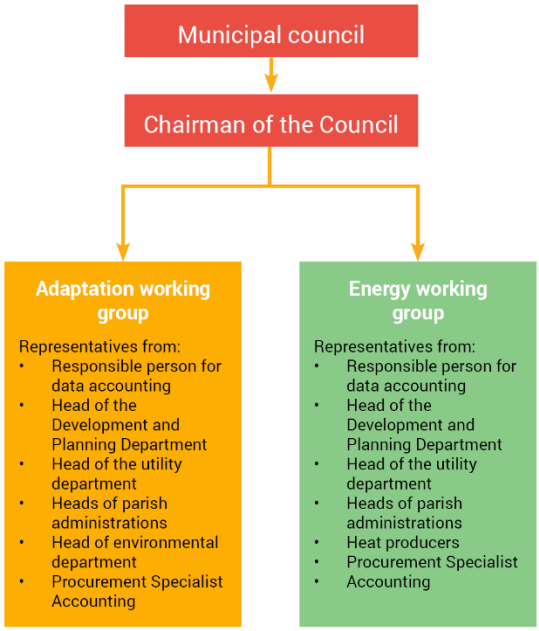


Fig. 3 - scheme of centralized organizational structure

The choice between these organizational structures depends on the specific context, resources, and capacities of each municipality. To successfully integrate climate adaptation and mitigation into their municipal structure, municipalities should conduct a thorough analysis of their existing organizational setup. This analysis should identify gaps, opportunities, and synergies between various departments and commissions. By identifying areas that require reinforcement and those where existing expertise can be harnessed, municipalities can effectively modify and integrate new elements into their structure.

Furthermore, open communication and engagement among stakeholders are crucial in both approaches. Regardless of the chosen organizational structure, fostering a culture of collaboration, knowledge-sharing, and interdepartmental cooperation will maximize the impact of climate action efforts.

In conclusion, municipalities should adopt an approach that aligns with their unique circumstances and capacities. The process of integrating climate adaptation and mitigation measures into existing structures requires thoughtful planning and strategic decision-making. By embracing the strengths of either centralized or decentralized models, and tailoring them to their specific needs, municipalities can pave the way for effective climate action, leading to a more sustainable and resilient future for their communities.

2. Risk and vulnerability assessment

Starting point

Each municipality possesses distinct characteristics, such as geography, infrastructure, population density, demographics, available information, resources, and capacities. RVA helps identify potential risks, vulnerabilities, and capacities to effectively adapt to climate change consequences.

To conduct a meaningful risk and vulnerability assessment (RVA), each municipality should clearly define its scope. This involves specifying the geographic boundaries to be included in the assessment, such as the entire municipality, specific neighbourhoods, or critical infrastructure areas. Additionally, the sectors to be evaluated should be identified, considering factors like economic importance, vulnerability to climate change impacts, and the municipality's priorities.

Consequently, choosing the most suitable impact assessment method is vital. ISO 14092:2020 highlights three main methods - Risk Assessment, Vulnerability Assessment, and Threshold Assessment.

- Risks assessment should include:
  - the assessment of hazard[2] and the likelihood of occurrence,
  - the identification of associated consequences or impacts,
  - the identification of the nature of associated vulnerabilities and exposure to hazard.
- Vulnerability assessment should include:
  - Determination or identification of the sensitivity of activities, assets and services to changes in climate and changes in climate hazards.
  - Consideration of the ability of the municipality and community to adjust, take advantage or respond to these changes and consequences, i.e. adaptive capacity.
- Threshold analysis helps prioritize actions by identifying points where a system becomes ineffective due to changes in average or extreme climate conditions.

Outcome

As an outcome, risk and vulnerability assessment should answer to these questions:

- **Which sectors will be affected?** (transport, energy, water supply, sewage supply, health, food, forestry, agriculture, tourism, environment, land use...)

[2] Hazard – potential source of harm. Hazard can comprise slow - onset developments, (like rising temperature over long term) as well as rapidly developing climatic extremes (like, landslide etc.) or increased variability. [Source: ISO 1409:2019, 3,7]

- **What are the vulnerable population groups?** (elderly people, children, marginalized groups, people with mobility restrictions, people with chronic illnesses, low-income households, etc.)
- **Factors that can affect adaptive capacity?** (access to health care, access to education, access to housing, state of living fund, poverty level, migration, political situation, management practices, territorial planning...)

As a result of the RVA, municipalities should identify and prioritize areas or sectors where effective and efficient adaptation measures are needed. This entails careful consideration of various factors, including the potential magnitude, probability, irreversibility, vulnerability, timing, and the potential to reduce risks. The adaptation plans and policies should be firmly based on this comprehensive assessment.

Activities

1. **Identify the relevant data sources and information** required to conduct the assessment, such as climate projections, historical data, demographic information, and existing vulnerability assessments.

2. **Data collection and analysis.** To evaluate the risks and vulnerabilities it might be necessary to execute vulnerability mapping, stakeholder interviews, and risk modelling (for example flood zone modelling).

3. **Risk and vulnerability assessment**. Several methodologies have been developed for RVA, one of the well-known being the methodology provided by the "Covenant of Mayors for Climate and Energy". The Covenant of Mayors initiative offers a comprehensive Guidebook "Baseline Emission Inventory (BEI) and risk and vulnerability assessment (RVA)" (from page 63), providing detailed instructions for conducting RVA, along with additional resources to support municipalities in climate change adaptation[3]. The Covenant of Mayors initiative has also developed an easy to use template for risk and vulnerability assessment, which municipality can use to structure the RVA process.

Table 1) Climate hazards

Climate hazards	<< Current risk of hazard occurring >>		<< Future hazards >>		
	Probability of hazard	Impact of hazard	Expected change in hazard intensity	Expected change in hazard frequency	Timeframe(s)
Extreme heat	Moderate	Moderate	Increase	Increase	Short-term
Extreme cold	Low	Low	Decrease	Decrease	Long-term
Heavy precipitation	Moderate	Moderate	Increase	Increase	Mid-term
Heavy rainfall	Moderate	Moderate	Increase	Increase	Mid-term
Heavy snowfall	Low	Low	No change	No change	Long-term
Fog	Moderate	Low	No change	No change	Mid-term
Hail	Moderate	High	Increase	Increase	Mid-term
Floods & sea level rise	Low	Low	Increase	Increase	Short-term
Droughts & water scarcity	Moderate	Moderate	Increase	Increase	Short-term
Storms	Low	Moderate	No change	No change	Long-term
Mass movement	Low	Low	No change	No change	Long-term
Wild fires	Low	Moderate	Increase	Increase	Short-term
Chemical change	Low	Low	Not known	Not known	Not known
Biological hazards	Moderate	Moderate	Increase	Increase	Mid-term
Other [please specify]	[Please choose]	[Please choose]	[Please choose]	[Please choose]	[Please choose]

[3] An example: Dublin city climate change action plan: https://www.dublincity.ie/sites/default/files/2020-07/2019-dcc-climate-change-action-plan.pdf

Example of risk assessment with The Covenant of Mayors tool.

The RVA process should be structured to assess both current risks and future scenarios. Municipalities can utilize climate data and non-climate data, including demographics, land use, policies and programs, socio-economic factors, environmental factors, and technological developments.

To ensure a well-rounded understanding and inclusion of diverse perspectives, municipalities can organize questionnaires and workshops involving different stakeholders. These sessions serve a dual purpose: informing participants about the assessment results and gathering valuable insights from various sectors and involved parties. By engaging stakeholders, the municipality can uncover climate change impacts, needs, and challenges that might not be readily apparent through quantitative data assessments alone.

4. **Adaptive capacity assessment.** Municipalities should discuss and consider factors such as institutional capacity, financial resources, social networks among other to find the weak points in their ability to implement adaptation measures.

In summary, an effective RVA empowers municipalities to prioritize and implement targeted adaptation measures, while active engagement with stakeholders fosters a collaborative approach to addressing climate change challenges.

Design thinking approach. To enrich the RVA, the design thinking approach arises as an effective methodology to get knowledge from actors at the internal municipality level and external one. In this sense, to organize participatory activities among relevant stakeholders to analyse the municipality risks and vulnerabilities, from an environmental and social perspective is vital so the SECAP is a real municipality strategy and not a document from a certain government body only discussed at an internal level.

Responsibilities

A comprehensive risk and vulnerability assessment (RVA) require a diverse range of expertise, encompassing climate science, environmental knowledge, as well as social, economic, and community-specific issues. To ensure a thorough and representative assessment, it is essential to involve a variety of stakeholders from both within the municipality and external organizations.

Most importantly, the municipality should:

1. Designate a responsible department or individual: Clearly define the department or individual who will coordinate the Risk and Vulnerability Assessment (RVA) process within the municipality. This person should ideally be part of the working group mentioned in Chapter 1.
2. Identify and engage stakeholders: Identify all relevant stakeholders, including government agencies, NGOs, local communities, and businesses. Determine the most appropriate level of involvement for each stakeholder based on their expertise and interests. Some stakeholders may actively participate in the RVA process by providing data and inputs, while others may be involved more indirectly through interviews or surveys.

3. Consider using participatory methods: Employ participatory approaches, such as workshops and focus groups, to foster collaboration and ownership among stakeholders.
4. Document stakeholder involvement: Maintain records of stakeholder contributions and feedback to demonstrate transparency and accountability.

3. Identification and implementation of adaptation measures

Starting point

Effectively identifying adaptation measures, including nature-based solutions, is crucial for municipalities aiming to develop and implement successful climate change adaptation strategies. This chapter details the systematic process for identifying and selecting appropriate measures for implementation.

Once the municipality has conducted a Risk and Vulnerability Assessment (refer to Chapter 2), the next crucial step is to determine which measures will be implemented to mitigate the identified risks and impacts. If no prior plan exists, this identification process marks the initial phase of developing a robust climate adaptation strategy. However, if a Sustainable Energy and Climate Action Plan (SECAP) is already in place, the starting point should be a thorough evaluation of the climate adaptation measures previously identified within the SECAP. This review should focus on assessing the effectiveness of existing measures and identifying any gaps in the current strategy.

Enhancements to this process should include engaging stakeholders from various sectors to ensure a comprehensive understanding of local conditions and potential solutions. Additionally, integrating technological advancements and current scientific research into the decision-making process will further refine the selection of measures, ensuring they are both innovative and effective. This collaborative and informed approach facilitates the development of a tailored, actionable plan that addresses specific municipal needs while promoting sustainable development.

Outcome

Effectively addressing climate adaptation is crucial for enhancing a municipality's resilience. Well-prepared municipalities are better equipped to withstand and recover from climatic disasters, ensuring minimal disruption to daily life and economic activities. Below are three key outcomes that illustrate the significant benefits of proactive climate adaptation efforts in any community.

Reduced vulnerability

- By implementing targeted adaptation measures, municipalities can directly reduce their vulnerability to specific climate-related risks such as flooding, heatwaves, or severe storms. This reduction in vulnerability contributes to a safer and more resilient community.
- Example: Ensuring free access to public spaces with cooling and widespread tree planting in urban areas to combat heatwaves. Appropriate tree species provide immediate relief during extreme heat events and contribute to lower ambient temperatures. Strategically placed vegetation not only offers shade but also improves air quality, which can mitigate the urban heat island effect and protect vulnerable populations, such as the elderly and those with health conditions, from heat-related illnesses.

Economic savings and efficiency

- Effective adaptation strategies can lead to significant economic benefits by preventing costly damage from climate impacts and reducing long-term mitigation costs. Efficient resource use and energy savings are additional benefits that can be realized through well-planned adaptation measures.
- Example: Implementing flood-resistant infrastructure, such as elevated roadways and improved drainage systems, reduces the economic impact of flood events. This proactive approach minimizes repair costs and economic disruptions that typically follow flooding, ensuring smoother municipal operations and services during and after such incidents.

Increased public awareness and engagement

- The process of identifying and implementing adaptation measures often involves community engagement, which can increase public awareness about climate risks and adaptation strategies. This heightened awareness can foster a more informed and engaged citizenry, which is crucial for the long-term sustainability of climate action efforts.
- Example: Hosting community workshops and simulations on disaster preparedness in response to climate change risks educates residents about the importance of adaptation measures, encouraging community involvement and improving overall response strategies during climate-related events.

Activities

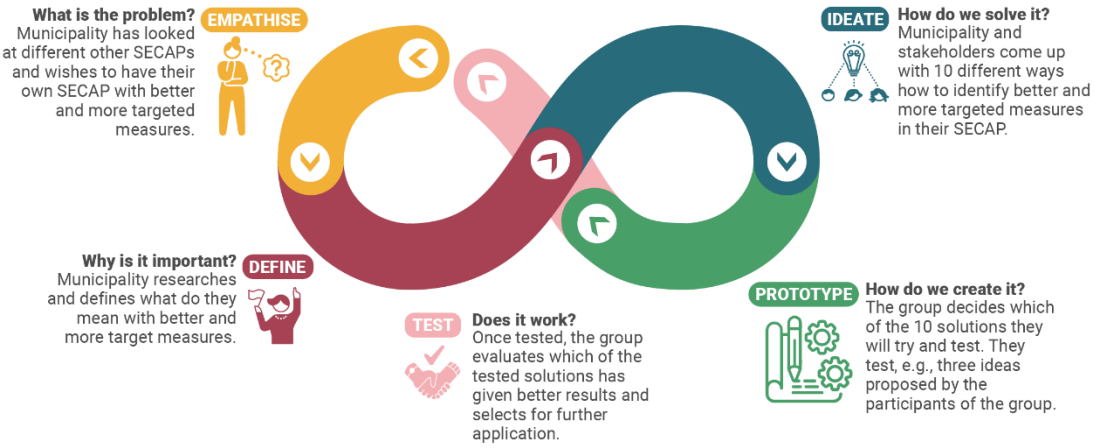
1. Identification of Potential Adaptation Measures with Design Thinking approach

To begin the process of identifying adaptation measures, the municipality should follow a systematic approach that encourages collaboration and creativity. One recommended method is the design thinking methodology, emphasizing the "empathize," "define," and "ideate" steps.

Workshop for the Adaptation Working Group: Organize a workshop with key stakeholders, including representatives from various departments, community members, and/or relevant experts. During the workshop, the following steps can be undertaken:

a) **Define the Problem**: Start by clearly defining the climate-related challenges and vulnerabilities that the municipality is facing. If this has not been done already, this step will help participants understand the context and set the foundation for generating relevant adaptation measures.
b) **Brainstorming and Clustering**: Encourage participants to brainstorm potential adaptation measures that address the identified problems. Facilitate discussions and ask each participant to come up with multiple ideas and to write them down on post-it notes. Collect all the post-

it notes and categorize them according to their relevance to specific challenges to help organize the ideas effectively.



c) **Summarise the ideas:** After categorizing the ideas, review them to identify key themes and potential solutions. Group similar ideas together and highlight those with the most relevance or impact. This will help in prioritizing and refining the proposed adaptation measures, ensuring they are actionable and aligned with the municipality's needs.

2. Selecting Measures for Inclusion in Adaptation Planning Documents

To streamline the selection process, municipalities can utilize the multicriteria methodology provided by the ***OwnYourSECAP*** project. This methodology allows for a comprehensive evaluation of each measure using predefined criteria. While the project's tool can assist in organizing the measures by priority, the municipality needs to determine the number of measures to be included and the level of ambition in addressing climate change challenges[4].

In this sense, synergies with LIFE CityAdap3 have been established. The work developed under in LIFE CityAdap3 proposes the use of the TOPSIS (Technique for Order Preference by Similarity to an Ideal Solution), multi-criteria decision-making methodology, based on the Hierarchical Analytical Process (AHP) to identify solutions from a finite set of alternatives for the selection of adaptation measures.

The basic principle is that the chosen alternative should be as close as possible to the ideal solution. In this way, decision-making and prioritisation of local adaptation actions will be based on several criteria. The definition of the criteria requires a decision-making process in two phases: a first eminently technical and a second in which the protagonists are the companies that select the action they prefer to finance, based on another set of previously established criteria. The result is a powerful decision-making tool that facilitates the prioritisation of actions to be addressed by local (and regional) administrations.

The proposed model has proven to be consistent and reliable. The participation of a significant number of agents (municipal technicians and representatives of the different municipalities) gives strength to the proposed method. Hence the consistency ratios resulting from the binary comparison of criteria offer a more than adequate value.

[4] For more information, please refer to the report "Multicriteria assessment method to prioritize adaptation measures included in LAs adaptation plan" prepared in the framework of the LIFE CityAdap3 project https://www.lifecityadap3.eu/_files/ugd/47db48_7bc5325b28b5438fa930acf58d6d48a9.pdf

3. Selecting Measures for Implementation for the Next Year

To identify measures for implementation in the next year, a detailed assessment of the municipality's capacity, readiness, and political support is essential. The ***evaluation tool***[5] provided by the ***OwnYourSECAP*** project can be utilised for this purpose. The questionnaire within the tool will aid in evaluating each measure (not climate adaptation but also climate mitigation measures) based on criteria such as:

a) **Benefits**: Assessing the multiple co-benefits that each adaptation measure may offer, beyond its primary adaptation objectives, such as energy efficiency, emissions reduction, cost savings, etc.
b) **Political Support**: Assessing the commitment of decision-makers and policymakers to implement the measures.
c) **Capacity**: Evaluating the municipality's resources, expertise, and technical capabilities to execute the selected measures.
d) **Readiness**: Analyzing the level of preparedness of the municipality to handle challenges and barriers that may arise during implementation.

By following these steps for identification and selection of adaptation measures, municipalities can create robust and tailored climate change adaptation strategies. Regular reviews and updates of the adaptation planning process should be conducted to incorporate new data, changes in climate projections, and lessons learned from implementation. A collaborative and iterative approach will enhance the municipality's resilience and ability to adapt effectively to climate change.

4. Preparing an Action Plan for Each Climate Adaptation Measure

Once the measures are selected, each one should be described in detail to clarify its implementation requirements. The ***OwnYourSECAP*** project offers a ***template***[6] for this purpose, providing a structured approach to define selected SECAP measures, including quantitative objectives, responsibilities, and indicators. This ensures precision in understanding and successful execution.

By utilizing the Excel tool for evaluation and the template for detailed measure descriptions, municipalities can enhance the effectiveness of their adaptation efforts. These systematic approaches aid in selecting the most viable measures and provide a clear roadmap for successful implementation, contributing to a more resilient and sustainable future for their communities.

The purpose of this template is to provide a structured approach to define the selected SECAP measures in more detail, including quantitative objectives, responsibilities, indicators, etc.

Design Thinking approach: for this stage is vital to include a design thinking approach, as the selection of measures and how to implement them should be a collaborative work among all involved parties at internal and external levels. In this sense, it is vital to understand that the municipality would have the role of promotion certain measures beyond its direct implementation. Design thinking will also be key to be creative while realistic in the way measures are implemented. Some examples of how ***OwnYourSECAP*** has implemented design thinking in this stage are included in Annex I.

[5] Available on the OwnYourSECAP project website here in English: https://www.ownyoursecap.eu/wp-content/uploads/2023/09/SECAP_action_criteria_EN_8Sept2023.xlsx
[6] Available here: https://www.ownyoursecap.eu/wp-content/uploads/2023/09/Template_for_describing_selected_measures.docx

Responsibilities

The working group is tasked with the critical role of identifying and overseeing the implementation of climate adaptation measures. This team delineates clear responsibilities for all involved parties and stakeholders, ensuring accountability throughout the process. Additionally, the group sets precise milestones for tracking progress and is responsible for the rigorous monitoring and evaluation of each measure. This structured approach facilitates effective management and timely adjustments, enhancing the overall success of the climate adaptation initiatives.

"Learning from Others" is a crucial component of the ***OwnYourSECAP*** project, emphasizing the importance of recognizing that municipalities with experience possess valuable insights. The ***OwnYourSECAP*** team has compiled valuable lessons from 21 European municipalities that have successfully institutionalized climate adaptation and implemented various adaptation measures[7]. These insights cover successful approaches, roles and responsibilities, stakeholder engagement methodologies, and adaptation measures. Leveraging these lessons, municipalities enhance their governance structures, uniting diverse stakeholders, and departments. Collaborating with experienced municipalities is essential for achieving goals like carbon neutrality and energy independence, helping secure political commitment and resources.

[7] Report available here: https://www.ownyoursecap.eu/wp-content/uploads/2024/04/26.02.2024_D3.2_v3.0.pdf

4. Monitoring

Starting point

The effective implementation of adaptation measures within municipal climate action plans is critical for addressing the challenges posed by climate change. Achieving this requires a structured and coordinated approach. Regular meetings and the activation of the organizational framework outlined in Chapter 1 are essential to ensure that adaptation strategies are seamlessly integrated into all aspects of municipal planning. Without consistent collaboration and ongoing discussions, it becomes difficult to build the capacity and competencies necessary for the successful execution of adaptation measures. Much like an Energy Management System, where annual targets are set and measures are systematically planned, a similar level of rigor and regularity is crucial for climate adaptation initiatives. By adopting this methodical approach, municipalities can progressively enhance their resilience and sustainability, effectively meeting the challenges of a changing climate.

Aligned with the goals of the ***OwnYourSECAP*** project, an innovative online monitoring tool has been developed to track and evaluate climate adaptation indicators and measures. This tool is integrated into an existing energy monitoring platform originally designed to monitor energy consumption across municipal infrastructure, including buildings, street lighting, and public transport systems (www.energoplanosana.lv/en). Given the complexity of monitoring climate adaptation efforts in municipalities, the adaptation monitoring module was specifically developed to offer a comprehensive and systematic approach to information gathering and assessment.

Outcome

The development of the Climate adaptation monitoring module within the ***OwnYourSECAP*** project represents a significant step towards enhancing climate change adaptation in municipalities. By leveraging this online tool, municipalities can systematically gather and evaluate crucial data on climate adaptation measures, fostering a more resilient and sustainable future for their communities. Continuous improvement, knowledge sharing, and collaboration among stakeholders are essential to make the most of this innovative monitoring platform and drive successful climate action.

This Climate module is a convenient and easy to use tool where any municipality can start to keep track of data not only on adaptation measures, to monitor their effectiveness but also to understand which sectors are priorities, which are the municipality's vulnerabilities, e.g., coastal erosion or economic losses in agriculture due to prolonged drought and heat, etc.

The Climate Module monitors sectors, risks, indicators and actions. Each sector is affected by a risk and often the same risks can affect several sectors. Vulnerability indicators, on the other hand, are selected to measure whether the actions implemented by the municipality increase its climate resilience. The indicators are used to monitor and quantify the impact of a risk on a sector. The purpose of the actions is to reduce vulnerability to risks and to prevent and mitigate the impacts of risks, as reflected in the indicator values.

Activities

The ***guidelines*** for monitoring climate adaptation data and measures are available on the ***OwnYourSECAP*** webpage[8]. Municipalities are encouraged to follow these steps based on the developed module:

1. Create your municipality's first monitoring review template

Access to the Climate Module is typically granted to the energy or environmental manager or the designated individual responsible for conducting the monitoring review. Ideally, this review should be carried out by an environmental or civil protection officer who is tasked with addressing climate change adaptation within the municipality.

If your municipality does not yet have an account on the Energy Monitoring Platform, please email platforma@ekodoma.lv to request the creation of an account and to obtain free access to the module. Alternatively, you can request access to the demo version through www.energoplanosana.lv/en. The monitoring reporting period spans one calendar year.

2. Prepare for Data Collection

Before beginning the review, gather all relevant data and documents needed for accurate monitoring. This includes historical climate data, existing municipal plans, and any previous assessments of vulnerabilities and risks. Ensuring that all necessary data is readily available will streamline the review process and improve the accuracy of your findings.

3. Select the difficulty level of monitoring

The complexity level you select will determine the number of risks and sectors for which you will input data in the monitoring review. At the beginner level, you will address two risks; at the advanced level, four; and at the expert level, at least six types of risks and sectors.

4. Select the relevant risks

Choose the climate change risks that are most pertinent to your municipality. Only these selected risks will be available for further reporting. The platform provides predefined key risks for you to select.

5. Fill in the review

The monitoring review is organised into five key sections: sectors affected by climate adaptation monitoring, associated risks, vulnerability indicators, mitigation actions, and a review summary.

1) Sectors affected by climate adaptation monitoring
2) Risks associated with each sector
3) Vulnerability indicators (numerical estimates) linked to each risk
4) Parameters of the mitigation actions
5) A summary of the review.

6. Maintain regular monitoring and reporting

[8] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.ownyoursecap.eu/wp-content/uploads/2023/09/Climate_module_instruction_of_use_v1_18Aug2023.pdf

Consistent monitoring and reporting of adaptation measures are crucial for tracking progress, identifying challenges, and recognizing achievements. Municipalities should establish a regular reporting schedule to ensure data accuracy and maintain accountability.

7. Evaluation and learning

Regular evaluations of the adaptation monitoring process allow municipalities to identify areas for improvement and to learn from both successes and setbacks. This iterative approach enhances the overall effectiveness of climate adaptation strategies.

8. Post-Review Analysis and Feedback

After completing the annual review, conduct a thorough analysis of the data and feedback gathered. Identify any gaps, inconsistencies, or areas where data collection can be improved. Engage with relevant stakeholders, including data collectors and users, to discuss potential improvements. Use these insights to refine data collection methods, adjust risk assessments, and enhance the monitoring process for the following year, ensuring continuous improvement and more accurate future reporting.

Design Thinking approach: one of the main objectives of ***OwnYourSECAP*** is to keep SECAP active and in continuous improvement. In this sense, the monitoring of activities and SECAP itself should continue including the design thinking approach to promote the active involvement of the citizenship and all relevant actors. These activities will promote an adequate evaluation of the conducted activities while proposing new ones.

Responsibilities

The responsibility for climate adaptation monitoring in a municipality typically falls to specific roles or departments, depending on the organisational structure of the municipality. The key individuals or departments that are generally responsible include:

- **Environmental Manager or Sustainability Officer**: This role often takes the lead in climate adaptation monitoring. The Environmental Manager or Sustainability Officer is responsible for coordinating all activities related to environmental protection, sustainability, and climate change adaptation within the municipality. They ensure that monitoring processes are implemented, data is collected, and reports are generated.
- **Energy Manager**: In some municipalities, the Energy Manager may also be responsible for climate adaptation monitoring, especially if the municipality has integrated energy management with climate adaptation efforts. The Energy Manager might oversee the monitoring tools and platforms, ensuring that adaptation measures are aligned with energy consumption and efficiency goals.
- **Civil Protection Officer**: In municipalities where climate adaptation is closely linked with disaster risk reduction and emergency management, the Civil Protection Officer might be responsible for overseeing adaptation monitoring. This role ensures that the municipality is prepared for climate-related risks and that adaptation measures are in place to mitigate these risks.

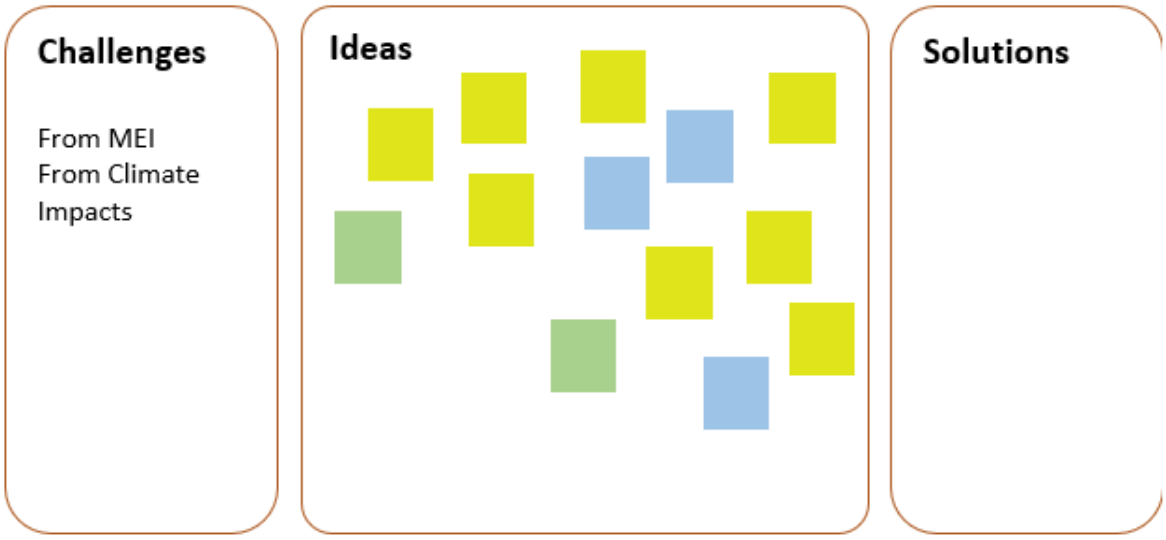
- **Planning or Urban Development Department**: If climate adaptation is integrated into broader urban planning or development strategies, the Planning Department may oversee the monitoring efforts. This department ensures that adaptation measures are factored into land use, infrastructure development, and urban resilience planning.
- **Climate Change or Resilience Office**: In larger municipalities or cities, there might be a dedicated Climate Change or Resilience Office responsible for all aspects of climate adaptation, including monitoring. This office would typically be staffed with specialists who focus on developing and implementing climate action plans, including adaptation measures.
- **Municipal Leadership**: Ultimately, the responsibility for ensuring that climate adaptation monitoring is carried out effectively lies with the municipal leadership, such as the Mayor or City Council. They provide the necessary political support, allocate resources, and ensure accountability for climate adaptation efforts.

The specific role or department responsible can vary based on the size of the municipality, the complexity of its climate adaptation efforts, and how these responsibilities are structured within the municipality.

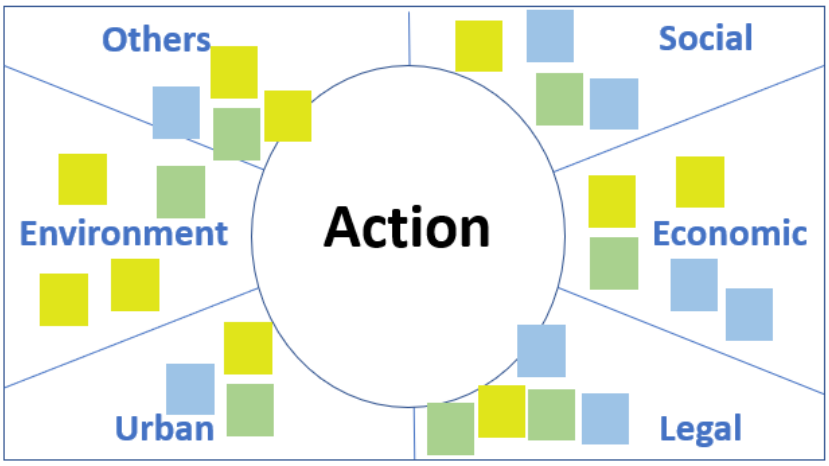
Annex I. Design thinking approach implementation in OwnYourSECAP

Design thinking tools

For the definition of SECAP: challenges should be included, at least preliminary, ones to give ideas and starting point to participants. The idea would be to work in groups with this panel. First, generating ideas, and second, selecting the most relevant ones as potential solutions. If the work is developed with various groups, before finishing the work, the explanation of the work developed to the rest of the group is desirable so groups can understand and reflect among other groups thoughts.

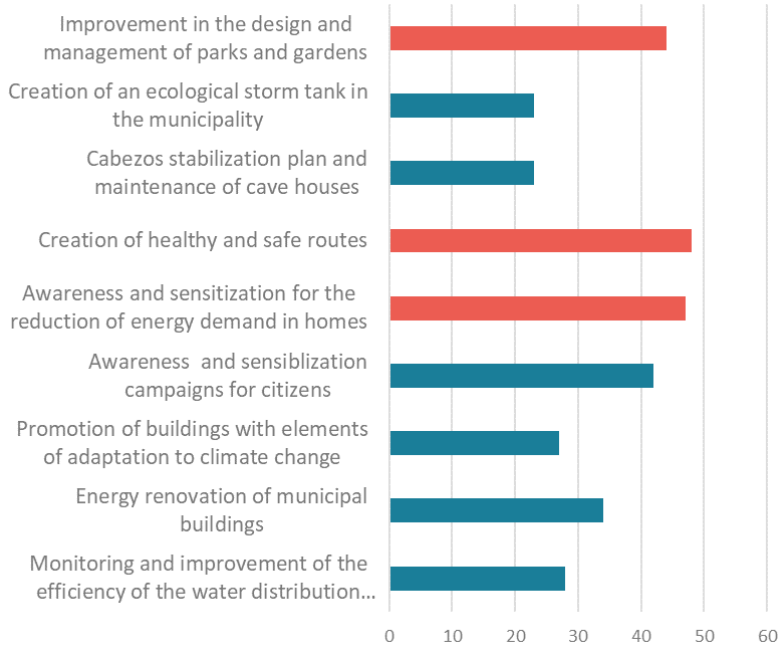


For the definition of an annual Action Plan: for the co-creation of the annual action plan for each measure, it is important to consider not only technical aspects but also constraints, opportunities or any consideration derived from social, economic, legal, urban, environmental and other sectors.

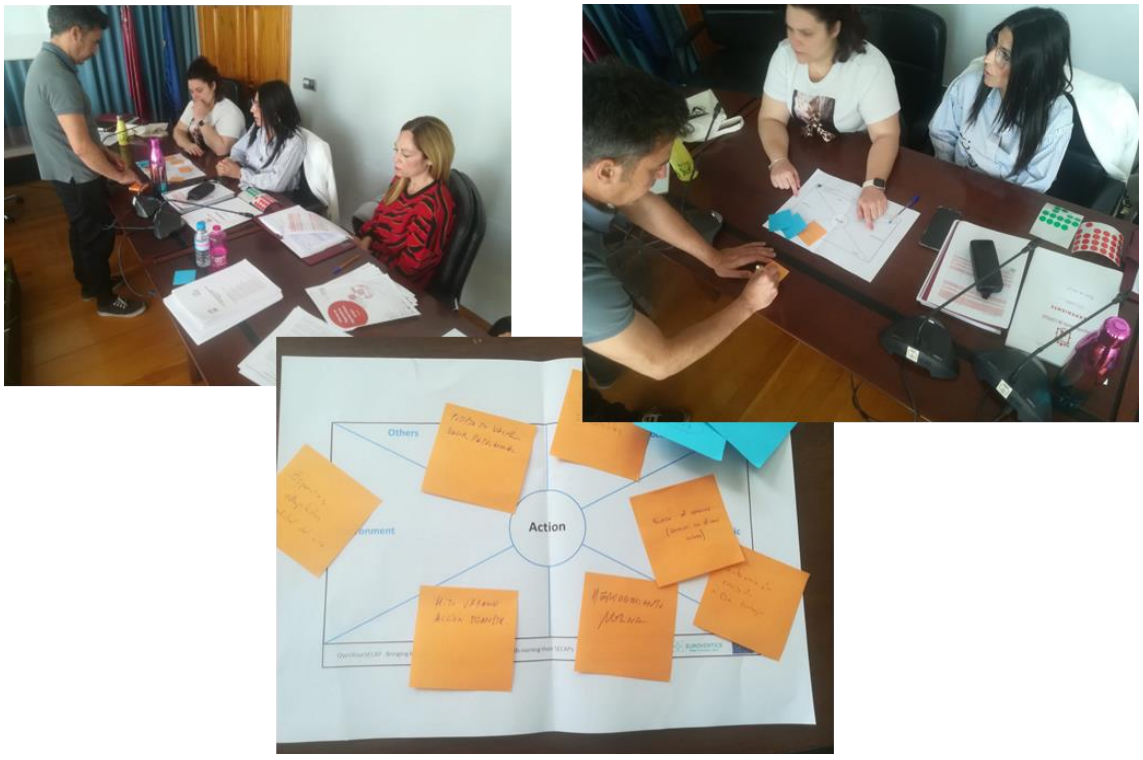


Example 1. Lorquí. 1st year. Selection of measures for the annual cycle

1st step. *Use of multicriteria tool at an internal level*



2nd step. *Definition of the implementation plan for each of the measures considering internal staff + politicians*

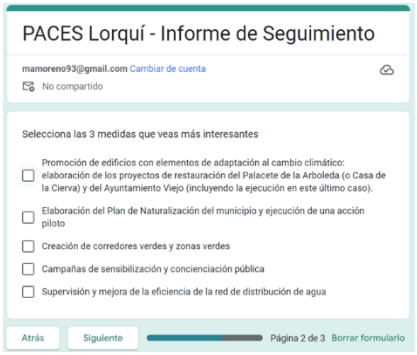


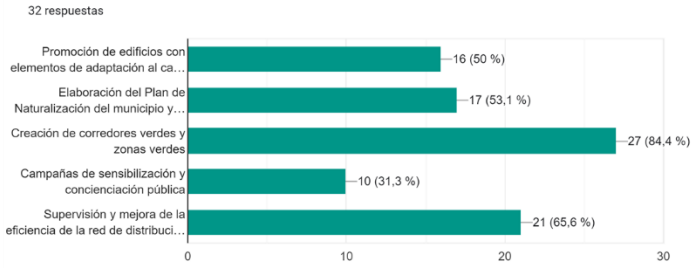
Lorquí. 2nd year. Selection of measures for the annual cycle

After the successful implementation of the approach of Lorquí within the 1st year, in this second one. During this

1st step. *Use of multicriteria tool at an internal level. Selection of 5 actions.*

2nd step. *A survey was distributed to the whole citizenship to prioritize 3 of them*





3rd. *Participatory workshop to codefine the selected measures including associations from the municipality*

Example 2. Jumilla. SECAP development. Co-design workshop with municipality associations

Methodology:

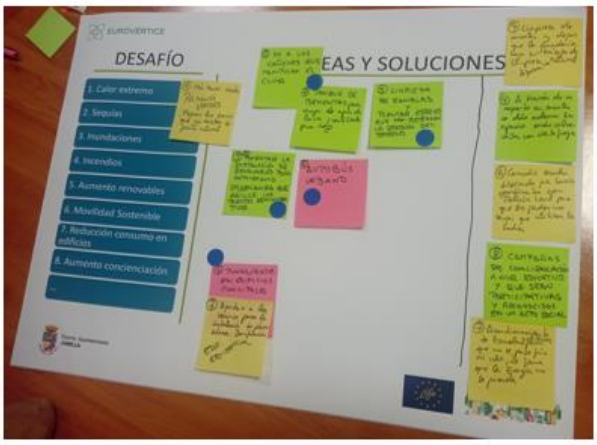
- **Groups of 5-6 people.**
- **STAGE 1. 20' to develop ideas and solutions to address these challenges (individual and connected).**
- **STAGE 2. 5' to vote on the most important ones (3 votes per person).**
- **STAGE 3. Each group summarises what has been discussed at their table and what they think are the most important issues.**

During Phase 1 the different groups were to identify and write down ideas and solutions to address the different challenges identified. These were discussed among the group members and assigned the challenge(s) they faced. In Phase 2, each group member voted on the three ideas they identified as priorities from among all those noted by the group. Voting was done by adding red stickers to the ideas written down on post-it notes. Finally, a representative of each team presented, in front of all the participants, the most voted ideas in their group.

Panel for working in groups about ideas and solutions:

CHALLENGE	IDEAS AND SOLUTIONS
1. Extreme heat	
2. Droughts	
3. Floods	
4. Fires	
5. Renewable energy	
6. Sustainable Mobility	
7. Reduction of consumption in buildings	
8. Raising awareness	
...	

Results which were then incorporated in the SECAP.


DESAFÍO
EAS Y SOLUCIONES
1. Calor extremo
2. Sequías
3. Inundaciones
4. Incendios
5. Aumento renovables
6. Movilidad Sostenible
7. Reducción consumo en edificios
8. Aumento concienciación


DESAFÍO
IDEAS Y SOLUCIONES
1. Calor extremo
2. Sequías
3. Inundaciones
4. Incendios
5. Aumento renovables
6. Movilidad Sostenible
Reducción consumo en
ificios
Aumento concienciación


DESAFÍO
IDEAS Y SOLUCIONES
1. Calor extremo
2. Sequías
3. Inundaciones
4. Incendios
5. Aumento renovables
6. Movilidad Sostenible
7. Reducción consumo en edificios
8. Aumento concienciación


DESAFÍO
IDEAS Y SOLUCIONES
1. Calor extremo
2. Sequías
3. Inundaciones
4. Incendios
5. Aumento renovables
6. Movilidad Sostenible
7. Reducción consumo en edificios
8. Aumento concienciación