



# D5.1. Vision towards implementation



**Regions  
4Climate**



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## List of Acronyms

CS	Challenge Suite
AR	Augmented Reality
VR	Virtual Reality
CCAP	Climate Change Adaptation Plan
NBS	Nature-based Solution
GSBM	Green Social Business Model
EWS	Early Warning System
CC	Climate Change
GH	Greenhouse
IA	Innovation actions

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## Keywords list

- Roadmap
- Challenge Suite
- Innovation actions
- Cross-border cooperation

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# Executive summary

This deliverable is the first report and output from Task 5.1. Cross-border vision & action reconciliation, submitted in M6 of the Regions4Climate project. It contains information collected during the workshop held in February 2023 (Helsinki) on cross-border vision and reconciliation actions, and shows the graphical results of this workshop. In this workshop, opportunities for collaboration among the different regions have been identified. During the workshop, the activities carried out were centred around three key aspects:

- i. Cross-border vision*
- ii. Basic pillars of the Challenge Suites*
- iii. Timetable of actions - roadmap*

The document also contains a description of the Common Roadmap for the R4C Regions, obtained from the feedback provided by each region on the partners involved in the implementation of the project, the planned innovation actions, the risks identified and the measures to minimize them, and the cross-border cooperation actions and transfer of best practices.

The tool used to create the Roadmap for each region and its various parts and tables is described in section 3 of this document, followed by an analysis of the completed roadmaps of each region. To facilitate the visualization of the information provided by the regions, the analysis includes figures with the most relevant tables. In these tables, the relations between them can be appreciated, providing a global vision of the Common Roadmap.

The final conclusions of this deliverable have been summarized in section 5. We conclude that some regions, due to their isolation, should prioritize collaborative actions with neighbouring regions and some regions should study and strengthen their existing collaborations while exploring opportunities with different regions in the area. Our analysis also shows that common strategies for land use management and climate change adaptation are lacking between bordering regions, emphasizing the need for collaborative efforts. However, within the R4C consortium 17 collaboration opportunities have been identified, forming the basis for future exchange activities between regions.

Finally, the surveys carried out with the partners on the cross-border vision, the tables with the collaboration actions proposed by the different regions and the rest of the tables that form part of the Roadmap have been included as annexes, but which, due to extension, could not be included in the downloadable as such.

# 1. Introduction

This deliverable is framed within task 5.1, which aims to *foster strong partnerships and **common visioning** within and between **Challenge Suites**, and development of **common strategies** for **cross-border cooperation**.*

Specifically, this deliverable includes the work carried out in order to *support each partner region to **define a journey roadmap for planned innovation actions by M6**, identifying **processes to implement regional innovations** whilst **highlighting cross-border cooperation** and **transfer of best practices** within **Challenge Suites**.*

In a first phase, an approximation was made regarding the current status of the regions, the objectives set for each of them, their needs and areas for improvement, as well as the opportunities for collaboration and exchange with other regions. This work was carried out in person, in the framework of the workshop held at M2, coinciding with the Kick-off meeting that took place in Helsinki (Finland). The aim of this workshop named “**Regional cluster working groups: cross-border vision and action reconciliation**” was to *establish a **common vision**, **share best practices** and **plan meaningful cross-border cooperation**.*

After this starting point, the development of the Roadmaps of the Regions continued. Several alternatives were worked on in order to respond to the need to organise each of the Roadmaps in a coordinated way, so that the Regions could collect all the necessary information and analyse it. It was also necessary for the Roadmaps to be living documents that could be updated, incorporate new data and redirect actions. Finally, it was decided to design an “ad hoc” tool that would be simple to use and easy to update.

This document presents the conclusions and results of the workshop held to establish the common vision and identify opportunities for effective cross-border cooperation, as well as the outcome of the preliminary planning through the Roadmaps of each Region.

## 2. Cross-border vision and action reconciliation

During the workshop organised in February named “Regional cluster working groups: cross-border vision and action reconciliation”, the partners involved in the Regions took the opportunity to establish a common vision, share best practices and plan for meaningful cross-border cooperation.



**Figure 1.** Image taken during the Workshop

During the workshop, the regions worked in the framework of their Challenge Suites coordinated by CARTIF and NCSR "D" in the following activities:

1. Complete a Survey on Cross-border vision (individual).
2. Workshop Part 1: The core pillars of the Challenge Suites. (3 groups 1 per Challenge Suite).
3. Workshop Part 2: Timeline of actions - roadmap (3 groups 1 per Challenge Suite).
4. Survey on Common vision (1 survey per Challenge Suite).

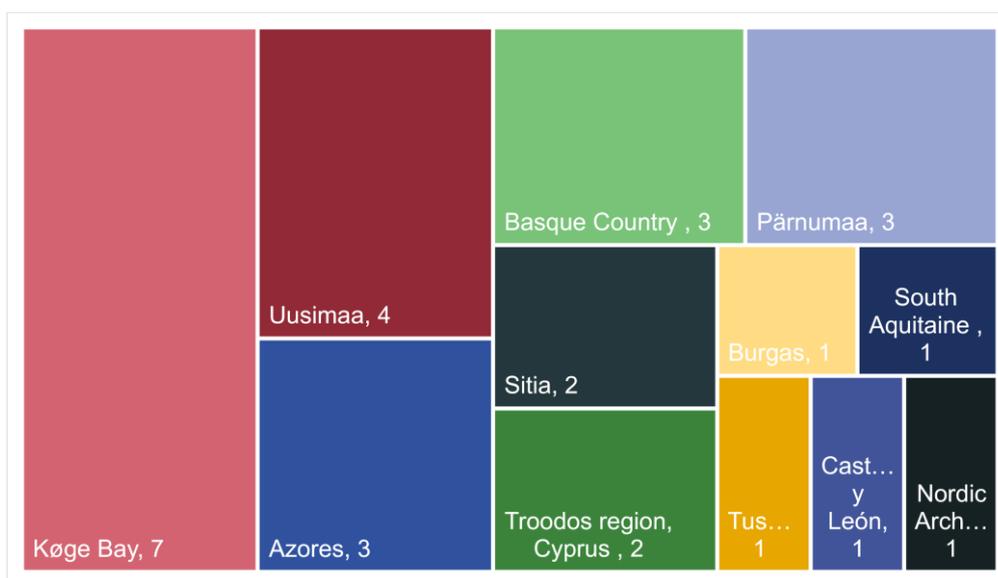
Thanks to the joint work of the partners in the development of these workshops, the initial joint vision was established and the foundations for cross-border collaboration were established.

## 2.1. Cross-border analysis

During the workshop held in the framework of the “Regional cluster working groups: cross-border vision and action reconciliation”, a survey was shared among all those present. The objective of this survey was to define the regions and borders, analyse the situation regarding CCAP and identify barriers and enablers and best practices to share.

A screenshot of the survey, with the questions asked and how they were collected, is shown in the annex.

A total of 30 survey responses were collected, for a total of 12 regions. The following graph shows the number of survey participants per region. Køge Bay was the region with the highest number of representatives with 7, while the other regions had between 3-1 representatives.



**Figure 2.** Responses by Region

Regions were asked about the **number of border regions shared with each demo**. In this case, disparity was found in the answers received by members of the same region. This may be the case in regions made up of different communities. In such a case it has been estimated to collect the response with the highest number of borders.

As a result, most of the regions border 3 or more regions, with the exception of Sitia and South Aquitaine, which border only one region, and the Azores, which would be the most isolated region.

Regarding the existence of Climate Change Action Plans, most respondents indicated that their regions include such plans, with the exception of Sitia and Nordic Archipelago. Disparity of opinions was also found within the same region, in 3 cases: Azores, Køge Bay and Uusimaa.

The summary tables of results are shown below: on the left, the table with the number of border regions per demo, and on the right, a table with the responses obtained regarding the existence of CCAPs.

Region	No. of border regions
Castilla y León	■■■■■...>5
Pärnumaa	■■■■■...>5
Basque Region	■■■■■
Burgas	■■■■■
Nordic Archipelago	■■■■■
Tuscany	■■■■■
Uusimaa	■■■■■
Køge Bay	■■■■
Troodos region, Cyprus	■■■■
Sitia	■■
South Aquitaine	■
Azores	-

**Table 1.** Number of border regions shared for each Demo.

Region	No CCAP	CCAP
Azores	●	●
Basque Region		●
Burgas		●
Castilla y León		●
Køge Bay	●	●
Nordic Archipelago	●	
Pärnumaa		●
Sitia	●	
South Aquitaine		●
Troodos region, Cyprus		●
Tuscany		●
Uusimaa	●	●

**Table 2.** Existence of Climate Change Action Plans (CCAP)

Respondents were asked to identify actions rated as best practice in their regions. The responses collected have been grouped into one of the following types: coastal, risk management, energy, water, landscape, land use, NBS (Nature-based Solutions), mobility, climate and engagement. The following table shows the results obtained. As can be seen, most of the practices are related to risk management. There is also a wide variety of practices related to water and coastal zone management.

CHALLENGE SUITES	Region	COASTAL	RISK MANAGEMENT	ENERGY	WATER	LANDSCAPE	LAND USE	NBS	MOBILITY	CLIMATE	ENGAGEMENT
		Azores	●	●	●						
CS1	Basque Region	●	●	●	●		●	●		●	
	South Aquitaine	●	●								
	Tuscany	●									
CS2	Burgas		●		●						
	Køge Bay		●		●	●		●		●	
	Pärnumaa	●	●		●						
	Uusimaa				●				●		●
CS3	Castilla y León			●					●	●	●
	Nordic Archipelago					●					
	Sitia		●								●
	Troodos region, Cyprus		●		●	●					
TOTAL	5	8	3	6	3	1	2	2	3	3	

**Table 3.** Typology of best practices related to Climate Change identified in the Regions.

It also asked about "bad practices" in the region, in contrast to the previous question. As in the previous case, the responses collected have been grouped into similar types. The resulting typology is similar to the previous case, with some differences. No bad practices have been detected in relation to Energy, but two new groups have been identified: strategy and implementation and monitoring. The results are shown in the following table.

CHALLENGE SUITES	Region	IMPLEMENTING AND MONITORING	STRATEGIES	COASTAL	RISK MANAGEMENT	WATER	LANDSCAPE	LAND USE	NBS	MOBILITY	CLIMATE	ENGAGEMENT
CS1	Azores	●										
	Basque Region	●						●	●			
	South Aquitaine		●									
	Tuscany			●								
CS2	Burgas								●			
	Køge Bay		●	●		●	●	●			●	
	Pärnumaa							●		●		
	Uusimaa					●		●				
CS3	Castilla y León	●	●									
	Nordic Archipelago		●					●				
	Sitia							●				●
	Troodos region, Cyprus				●	●		●				
	<b>TOTAL</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>

**Table 4.** Typology of "bad" practices related to Climate Change identified in the Regions.

There is a consensus in many of the regions regarding the lack of coordination between areas and administrations, which delays the implementation of actions and projects. This underlines the need for a common strategy to unite efforts between regions and their borders.

In addition, and related to the above, there is a common view on the existence of bad land use practices. Unregulated building and the abandonment of agricultural uses are the main causes of poor land management.

In relation to the currently active collaborative actions of the regions with other regions in their environment, most of the Demos indicated that they do have such collaborations. Only in the case of the Azores and Troodos do they have no collaboration with other regions.

Challenge Suite	Region	No	Yes
cs1	Azores	●	
	Basque Region		●
	South Aquitaine		●
	Tuscany		●
cs2	Burgas		●
	Køge Bay		●
	Pärnumaa		●
	Uusimaa		●
cs3	Castilla y León		●
	Nordic Archipelago		●
	Sitia		●
	Troodos region, Cyprus	●	
<b>TOTAL</b>		<b>2</b>	<b>10</b>

**Table 5.** Current collaborations with bordering regions

Regions were also asked about the barriers they face in collaborating with border regions. If barriers exist, they were asked to classify them into one of the following groups:

- Related with social issues
- Related with environmental issues (wild fires, water management, coastal resilience, etc.)
- Related with economic issues
- Related with policies and governance

As can be seen in the table below, the most common barrier relates to policy and governance, followed closely by economic barriers. Environmental or social barriers are more residual.

Challenge Suite	Region	NO BARRIERS	SOCIAL	ENVIRONMENTAL	ECONOMIC	POLICIES & GOVERNANCE
cs1	Azores	●				
	Basque Region				●	●
	South Aquitaine					●
cs2	Tuscany	●				
	Burgas				●	●
	Køge Bay	●	●	●	●	●
	Pärnumaa				●	●
cs3	Uusimaa	●	●	●	●	●
	Castilla y León				●	●
	Nordic Archipelago	●				
	Sitia		●		●	●
	Troodos region, Cyprus	●			●	●
	<b>TOTAL</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>8</b>	<b>9</b>

**Table 6.** Barriers encountered to collaborate with bordering regions

Finally, participants were asked to share their ideas freely in order to collaborate with other regions. Below is a list of the most relevant suggestions.

- More bottom-up approaches in governance are needed to tackle the climate emergency.
- Sharing good practices
- Promote adaptive coastal zone management, evaluate and program the removal of buildings and infrastructures from areas at risk through cost benefit analysis and more.
- Annual meetings
- Organize scientific and technical workshops
- AR/VR, social resilience, public participation

## 2.2. Establishing a common vision

During the workshop, each region identified **specific actions** in 4 different areas (social, environmental, economic and governance), and assigned to one or more core pillars. In a second phase of the workshop, the regions put together the actions to be carried out in each SC. A summary of the main conclusions reached in each CS is shown below. The full results of the panels completed by the regions in this part are shown in the annex.

**Challenge Suite 1** is Focus on Faster. Innovation actions involved in this CS are focused on developing and rolling out multi-scale and multi-sectoral adaptation solutions to help reduce climate-related risk, increase climate protection and safeguard coastal ecosystem integrity.

This CS is structured around 4 central pillars of innovation. The actions involved for each of the pillars can be grouped as follows:

1. **Benchmarking of techniques for coastal protection and restoration, including biodiversity.** By means of implementation actions (restoration of degraded areas and ecosystem recovery); monitoring and evaluation activities (deployment of measurement stations and monitoring and evaluation tools such as Apps, interactive maps, etc.); and development of events and workshops with authorities and stakeholders.
2. **Examination of opportunities for Blue Carbon Credits.** Through implementation actions (restoration in flooded areas and plantations); monitoring and evaluation activities (development of monitoring systems and platforms, impact analysis by categories of stakeholders); and development of events and workshops (related with tourism sector and others).
3. **Citizen education & engagement in resilience building actions.** This will include awareness raising strategies (RX visualization, identification of vulnerable social groups), organization of workshops and events, and assessment and monitoring activities (local impact, modelling, training in monitoring for local authorities).
4. **Cross-border actions, including multi-scale monitoring & multi-sectoral adaptation planning.** By means of monitoring and evaluation activities (real time and video monitoring, EWS, high resolution assessment, regional monitoring programme, assessment of local impact of CC) as well as strategies regarding policies and governance.

**Challenge Suite 2** is Focus on Smarter. Innovation actions that advance the frontiers of knowledge on adaptation to gather more and better data on climate-related risks and losses, and enhance Climate-ADAPT as the European platform for adaptation knowledge.

This CS is structured around 3 central pillars of innovation. The actions involved for each of the pillars can be grouped as follows:

1. **Bridging the science-stakeholder-policy gap via innovative evidence-based digital tools.** By means of co-creation and cooperation activities, implementation actions (climate resilience logistics centre), and policies and governance activities (policy integration, increase expertise of local administrations, involve national authorities, guidelines).

2. **Raising citizens' awareness of climate issues, adaptation solutions, & potential trade-offs.** Awareness-raising and training events and activities will be carried out, and tools and modelling of impacts and valuation of green spaces will be used.
3. **Improving the use of existing data via fusion of heterogeneous data sources & advanced analytics to support decision-making.** Use of specific data and models and digital and 3D tools.

**Challenge Suite 3** is focus on More Systemic. Integrated, cross-sectoral innovations to address the critical socioeconomic impacts of climate change at all levels of society, with a focus on enhancing the climate change resilience of primary industries.

This CS is structured around 3 central pillars of innovation. The actions involved for each of the pillars can be grouped as follows:

1. **Green Social Business Models (GSBMs) for sustainable socioeconomic renewal, largely focused on primary industries.** Communication and engagement actions will be carried out with farmers, women and social communities. Actions related to the sustainable management of CO<sub>2</sub> will be carried out, and business models will be developed in order to fix population and create sustainable economic activities. Measures for multi-sectoral collaboration will also be undertaken to harness resources and opportunities.
2. **Community engagement in regional climate resilience-building, including sustainable resource use.** By means of training and education activities, communication and cooperation actions and promotion of sustainable economy and business models.
3. **Resource resilience strategy development supported by monitoring & modelling.** Focused in local actors, assessment and monitoring strategies, and implementation of actions to promote sustainable economy.

## 2.3. Collaboration opportunities

Among all the actions, the Regions indicated those for which they have the greatest capacity or experience, as well as those actions in which the regions have the greatest difficulty or lack of capacity or experience. The following is a general analysis of the opportunities for collaboration identified, which will serve as a starting point for the establishment of exchange actions between regions.

Overall, the regions show great strength in **environmental** and **social** issues, with a total of 23 and 20 actions identified as having the potential to be shared due to the degree of experience of the regions in these fields. In contrast, in the areas of economy and governance, fewer actions have been identified for sharing, namely 11 and 15 actions respectively.

In terms of identified needs or weaknesses, the **social** and **governance** areas have the highest number of selected actions. Although the figures are quite similar, the area of economy has the lowest number of actions selected.

The results of the analysis can be found in the next table.

Note:

- ★ Indicates the number of actions in which the region has expertise to share.
- ? Indicates the number of actions in which the region would benefit from the experience of others.

Challenge Suite	Region	Social		Environmental		Economic		Governance	
		★	?	★	?	★	?	★	?
cs1	Azores	4	0	0	1	0	0	1	0
	Basque Region	1	1	6	0	2	0	3	0
	South Aquitaine	1	1	2	0	1	0	3	0
	Tuscany	4	0	2	0	2	0	2	0
	<b>Total CS1</b>	<b>10</b>	<b>2</b>	<b>10</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>9</b>	<b>0</b>
cs2	Burgas	2	0	2	0	0	2	1	1
	Køge Bay	1	2	2	0	1	0	1	2
	Pärnumaa	1	0	0	1	1	0	0	0
	Uusimaa	0	2	1	2	1	0	1	0
	<b>Total CS2</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>3</b>
cs3	Castilla y León	2	0	3	0	1	2	3	0
	Nordic Archipelago	0	0	2	1	0	0	0	1
	Sitia, Crete	3	0	2	0	1	0	0	1
	Troodos region, Cyprus	1	0	1	0	1	0	0	1
	<b>Total CS3</b>	<b>6</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>3</b>
	<b>TOTAL</b>	<b>20</b>	<b>6</b>	<b>23</b>	<b>5</b>	<b>11</b>	<b>4</b>	<b>15</b>	<b>6</b>

**Table 7.** Strengths and weaknesses analysis of the regions

A detailed analysis of the needs of the regions identified as a result of this workshop has been carried out and cross-checked with the potential of the regions. As an outcome of this exercise, the opportunities for collaboration detected are shown below. The information gathered in this table will serve as a starting point for organising seminars, workshops and other exchange activities that will feed into the tables of the Roadmap: Cross-border cooperation actions and transfer of best practices.

Areas for improvement		Proposed expert support or experience exchange	
Region	Action	Region	Action
Azores	Interactive digital coastal vulnerability map for Azores islands	Tuscany	Realization of a monitoring system and an ICT resilience data management platform.
Basque Region	Social vulnerable groups identification and engagement strategy	Sitia	Support vulnerable groups. Highschool children/teachers/parents by educating on "how to prepare" for climate change. Educating future citizens on climate change.
Burgas	3D modelling / digital tool business case	Nordic Archipelago	Monitoring, modelling and impact assessment (to determine progress towards climate resilience, change to liveability)
		Tuscany	modelling of coastal dynamics and structures, both leveraging on experimental and numerical

Areas for improvement		Proposed expert support or experience exchange	
Region	Action	Region	Action
			models
	Involving business in spatial design and green criteria for urban development	Nordic Archipelago	monitoring, modelling and impact assessment (to determine progress towards climate resilience, change to liveability)
		Tuscany	modelling of coastal dynamics and structures, both leveraging on experimental and numerical models
		Castilla y León	Use of regional and local channels to establish long-term relationships among local businesses
		Basque region	policy & governance integration of adaptation measures into planning development instruments (master plans, Hendaya, Hondarribi)
		Uusimaa	Climate resilient planning guidelines
	Involving national authority responsible for green transition	Uusimaa	Including UHI and landslide survey into master planning
		Basque region	policy & governance criteria for coherent planning in the cross border area (FR/ES) and how to mainstream in planning instruments and decision making
		Tuscany	Organization of specific participatory events with the municipality authorities.
Castilla y León	design and create GSBM for food processing; creation and development of GSBM (Green societal business models) for rural areas with rural women and young people as target groups	Uusimaa	Climate resilience logistics center development
		Køge Bay	Business model for multifunctional coastal protection
		Cyprus	co-creation of menus with more green options and less food waste
Cyprus	Development of climate neutral and regenerative tourism strategy	Castilla y León	further the implementation and replication of GSBM through integral cooperatives and entrepreneurial engagement
		Køge Bay	Business model for multifunctional coastal protection
Køge Bay	Improve policy integration; Cooperation across admin. Boundaries	Basque region	policy & governance integration of adaptation measures into planning development instruments (master plans, Hendaya, Hondarribi)
		Azores	recommendation to improve policies implementation
	Psychosocial learning activities; Social resilience	Sitia	Support vulnerable groups. Highschool children/teachers/parents by educating on "how to prepare" for climate change. Educating future citizens on climate change.
Nordic Archipelago	Develop standardised workflows + processes for (intra) regional issues	Basque region	policy & governance criteria for coherent planning in the cross border area (FR/ES) and how to mainstream in planning instruments and decision making
		Azores	provide recommendation to improve policies implementation

Areas for improvement		Proposed expert support or experience exchange	
Region	Action	Region	Action
Pärnumaa	Ecosystem services preservation	Basque Region	Restore degraded areas dedicated to agriculture or other uses that were originally marshes; recover the estimate dynamics and the state of the associated ecosystems
		Tuscany	design and realization of an artificial dune and its ecosystem
Sitia	Sensitize women cooperatives for promoting local products through specialized seminars	Castilla y León	further the implementation and replication of GSBM through integral cooperatives and entrepreneurial engagement
South Aquitaine	XR visualization of coastal flooding events to support awareness raising	Køge bay	Promote AR&VR for decision making
Troodos	climate change risk assessment of Troodos region	Basque Region	vulnerability and risk assessment - gap awareness
Uusimaa	Social Value/valuation of green space; Social value overlap W/ adaptation value	Castilla y León	further the implementation and replication of GSBM through integral cooperatives and entrepreneurial engagement
		Køge Bay	Business model for multifunctional coastal protection
		Tuscany	modelling of coastal dynamics and structures, both leveraging on experimental and numerical models
	UHI modelling; Landslide modelling	Nordic Archipelago	monitoring, modelling and impact assessment (to determine progress towards climate resilience, change to liveability)

**Table 8.** Collaboration opportunities detected

### 3. The Roadmap tool

CARTIF has elaborated a database template to help collect all the information to *define a journey roadmap for planned innovation actions by M6, identifying processes to implement regional innovations whilst highlighting cross-border cooperation and transfer of best practices within Challenge Suites*. The databases will allow to perform analysis that will help the regions in further stages to *define internal decision-making process, actions to minimise implementation risks, success indicators and monitoring and reporting of impacts of the implemented innovations*.

A template has been created for each of the Regions. These templates are “living documents” and serve as a tool for planning actions (innovation and cross-border), identify and assess risks, and search for best practices to share.

CHALLENGE SUITE	REGION	LINK
Challenge Suite 1. Focus on Faster.	Basque	<a href="https://quiet-deer-706.notion.site/Roadmap-for-Basque-Region-42f9e0a2a8c04dde8eb1e54d1211fbb5">https://quiet-deer-706.notion.site/Roadmap-for-Basque-Region-42f9e0a2a8c04dde8eb1e54d1211fbb5</a>
	South Aquitaine	<a href="https://quiet-deer-706.notion.site/Roadmap-for-South-Aquitaine-Region-471532a6b0ce4019894015a2b20cfe9f">https://quiet-deer-706.notion.site/Roadmap-for-South-Aquitaine-Region-471532a6b0ce4019894015a2b20cfe9f</a>
	Azores	<a href="https://quiet-deer-706.notion.site/Roadmap-for-Azores-Region-2172cbe8fcbd410a865c725794b4e618">https://quiet-deer-706.notion.site/Roadmap-for-Azores-Region-2172cbe8fcbd410a865c725794b4e618</a>
	Toscana	<a href="https://quiet-deer-706.notion.site/Roadmap-for-Toscana-Region-fc770a3820134362a124b0b4bf41cd41">https://quiet-deer-706.notion.site/Roadmap-for-Toscana-Region-fc770a3820134362a124b0b4bf41cd41</a>
Challenge Suite 2. Focus on Smarter.	Køge Bay	<a href="https://quiet-deer-706.notion.site/Roadmap-for-K-ge-Bay-Region-e4ea843150e34695b0a07a853616b522">https://quiet-deer-706.notion.site/Roadmap-for-K-ge-Bay-Region-e4ea843150e34695b0a07a853616b522</a>
	Burgas	<a href="https://quiet-deer-706.notion.site/Roadmap-for-Burgas-Region-932279e27c394cb7af7db430454480de">https://quiet-deer-706.notion.site/Roadmap-for-Burgas-Region-932279e27c394cb7af7db430454480de</a>
	Uusimaa	<a href="https://quiet-deer-706.notion.site/Roadmap-for-Uusimaa-Region-eb008681d3b747c38eb8d198386262a4">https://quiet-deer-706.notion.site/Roadmap-for-Uusimaa-Region-eb008681d3b747c38eb8d198386262a4</a>
	Pärnumaa	<a href="https://quiet-deer-706.notion.site/Roadmap-for-P-rnumaa-Region-e15ea9bc0c41459887f1871ee2a74b21">https://quiet-deer-706.notion.site/Roadmap-for-P-rnumaa-Region-e15ea9bc0c41459887f1871ee2a74b21</a>
Challenge Suite 3. Focus on More Systemic	Crete	<a href="https://quiet-deer-706.notion.site/Roadmap-for-Crete-Region-ee126041efb442749a537daf4c759ad3">https://quiet-deer-706.notion.site/Roadmap-for-Crete-Region-ee126041efb442749a537daf4c759ad3</a>

CHALLENGE SUITE	REGION	LINK
	Castilla y León	<a href="https://quiet-deer-706.notion.site/Roadmap-for-Castilla-y-Le-n-Region-3a1204069ab64329ba2b6d89bacffbac">https://quiet-deer-706.notion.site/Roadmap-for-Castilla-y-Le-n-Region-3a1204069ab64329ba2b6d89bacffbac</a>
	Nordic Archipelago	<a href="https://quiet-deer-706.notion.site/Roadmap-for-Nordic-Archipelago-Region-d83055cb1ea5496487ba35a898744284">https://quiet-deer-706.notion.site/Roadmap-for-Nordic-Archipelago-Region-d83055cb1ea5496487ba35a898744284</a>
	Cyprus	<a href="https://quiet-deer-706.notion.site/Roadmap-for-Cyprus-Region-b781c40a265e4eec9d348fcd8e76b393">https://quiet-deer-706.notion.site/Roadmap-for-Cyprus-Region-b781c40a265e4eec9d348fcd8e76b393</a>

**Table 9.** List of links to access the template for each Region

### 3.1. Objective

The Roadmap is a database in which all the actions to be carried out by each pilot are recorded. In order to organize this task in an effective and coordinated manner, a tool has been designed to serve as a guide in the elaboration of the complete roadmap for each Region. It is also conceived as a living tool that serves the regions to identify processes, plan actions and detect anomalies in development.

The objective of the Roadmap is therefore to plan actions and record their progress and also to carry out analyses based on temporal data, relationships and labels that allow the identification of processes that support the decision-making of the regions.



**Figure 3.** Roadmap landing page

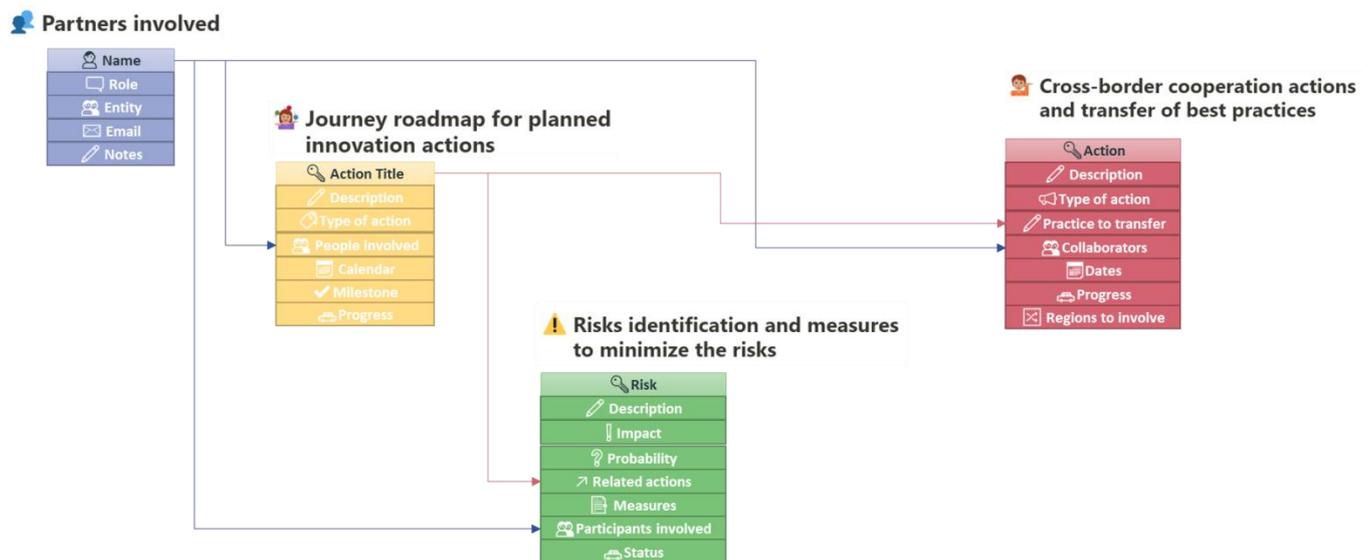
## 3.2. Roadmap architecture

The roadmap is composed of 4 interrelated databases, namely:

- Partners involved
- Planned innovation actions
- Risks identification and measures to minimize risks
- Cross-border cooperation actions and transfer of practices

The tables forming the database are interconnected with each other through the key fields. These are the ones located in the tables as the first column.

These relationships allow cross analysis between elements of the tables.



**Figure 4.** Relations between databases and their fields

## 3.3. Databases description

### 3.3.1. Partners involved

This database will include the names of the people involved in the management and development of innovative actions in the region. This can include both pilot members within the R4C project as well as key external actors to be involved.

The fields visible in this table are the following:

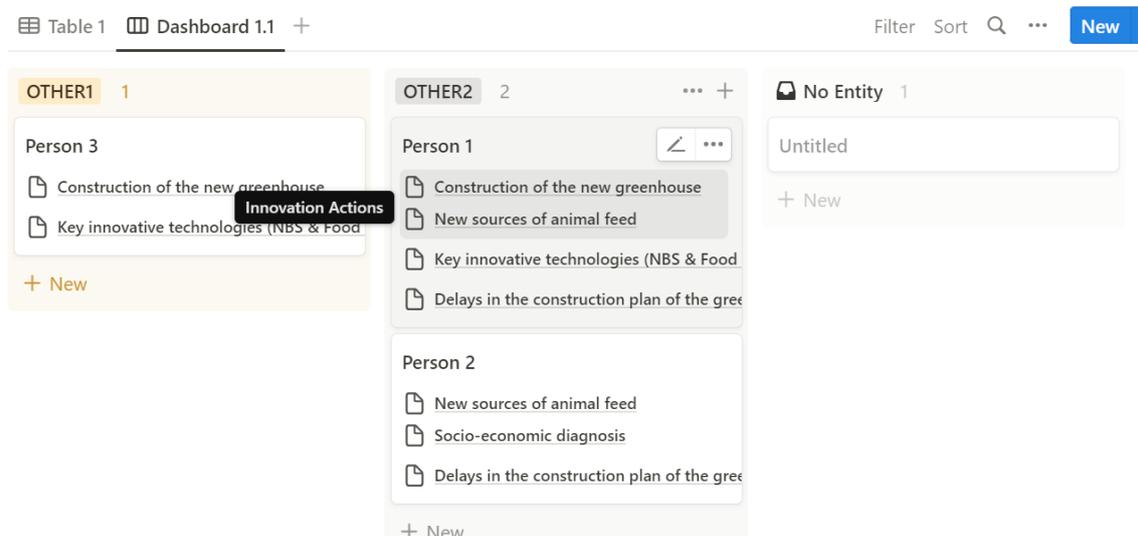
FIELD OR COLUMN	TYPE OF DATA	DESCRIPTION
Name	ID	Name and surname of the person involved.
Role	TAG	Indicate the role within the Region. You can create the categories by adding a new tag. I.e.: Leader, Technical contributor, Collaborator, Stakeholder, etc.
Entity	TAG	Acronym of the organization within the project or the name of the external organization.
Email	Text (mail)	If needed, you can include the email in order to create an email list.
Notes	Text	Free text for relevant notes.

**Table 10.** Fields description of Table 1: Partners involved

### 3.3.1.1. Dashboard 1.1

Dashboard 1.1 is a control panel showing the people grouped by entities and the list of activities to which that person ( Name) is assigned, including innovation actions ( Journey roadmap for planned innovation actions ) and cross-border cooperation actions ( Cross-border cooperation actions and transfer of best practices) and involvement in risk management ( Risks identification and measures to minimize the risks).

By moving the mouse cursor over the different elements of each card, it is possible to see the group to which each of them belongs (IA, Cooperation actions or Risks).



**Figure 5.** View of Dashboard 1.1 in which the cursor is placed on a group of Innovation actions assigned to Person 1 belonging to entity OTHER2

Functionalities:

- Identify the workloads of staff assigned to each activity.

- Detect possible bottlenecks in terms of tasks assigned to a single person.
- Determine the interactions between the different work groups.
- The "No entity" group allows to identify those people in the database without an assigned organization.

### 3.3.2. Planned Innovation Actions

Planned Innovation Actions is the core database of the Roadmap. In this table, more complex than the previous one, the Innovative Actions planned for the Region will be included, including relevant data for their management, such as: personnel involved, time schedule, etc.

The fields visible in this table are the following:

FIELD OR COLUMN	TYPE OF DATA	DESCRIPTION
 Action Title	ID	Include a short title for the action. This Column identifies the action to link in other tables.
 Description	Text	Free text, in which the action can be described in more detail.
 Type of action	TAG	Indicate in which category the action falls (economic, social, governance or technical). You can select more than one label in case the action can be framed in more than one type.
 People involved	Link	People involved in the item. You can select multiple people.
 Calendar	Date	Timetable plan for the action: Include the Start Date for the action and the End Date.
 Milestone	Log	Checkbox to indicate if the Item is a Milestone. Tick this box if the action is decisive and needs to be done in order to proceed with other actions.
 Progress	TAG	Indicate the current progress of the task by selecting: Not started, In progress, or Done. Select Stopped when the item has started but not progressing.

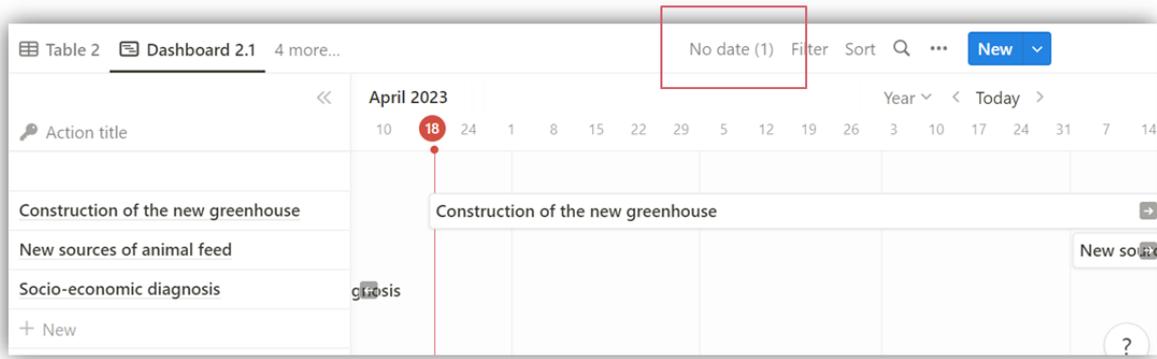
**Table 11.** Fields description of Table 2: Planned innovation actions

#### 3.3.2.1. Dashboard 2.1

This panel shows a timeline based on the data entered in the calendar field, with a complete list of innovative actions shown on the left (panel that can be hidden/shown by clicking on <</>>), and their scheduling within the timeline on the right.

Functionalities:

- Allows the temporal display of actions.
- The "No date" section located in the upper right-hand side allows for the detection of actions without a time range or deadline assigned.



**Figure 6.** View of Dashboard 2.1 with the actions on the left, and the timeline planned on the right.

### 3.3.2.2. Dashboard 2.2

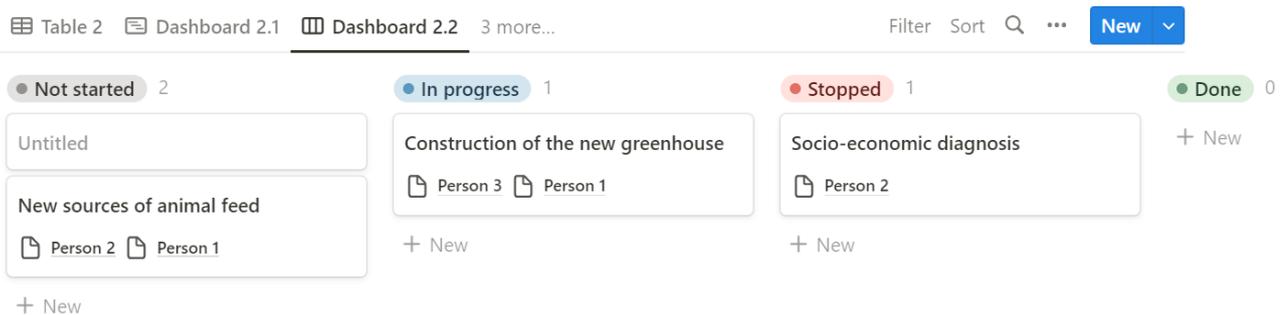
Kanban-type board showing the current progress of the region's innovative actions. The elements are grouped according to the Progress field, and are ordered as follows: Not started > In progress > Stopped > Done.

In each of the sections, the items are displayed as cards, showing the **Title of the action** and **People involved**.

From this panel, it is possible to change the progress of an action by dragging the card to another section.

Functionalities:

- Assess the status of actions.
- Identify bottlenecks (an increase of tasks in the "Stopped" section).
- Control overload of work in progress (an increase of actions in the "In progress" section).



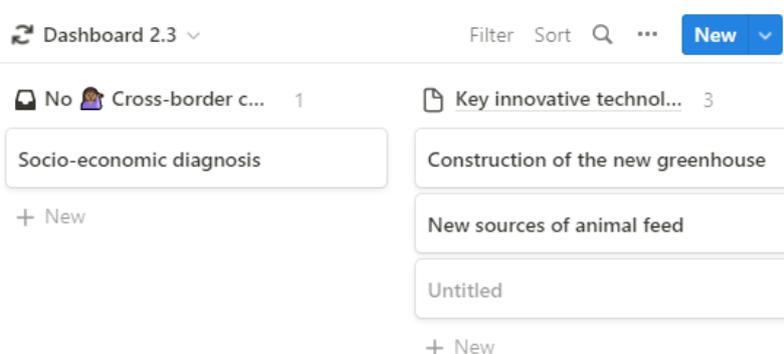
**Figure 7.** View of Dashboard 2.2 with the cards distributed in terms of their current progress.

### 3.3.2.3. Dashboard 2.3

This dashboard allows you to visualize the proposed knowledge transfer for each Innovation Actions. For this dashboard to make sense, the Cross-border cooperation actions database must have been previously completed.

Functionalities:

- Allows the identification of innovative actions for which no transfer or cooperation actions have been identified.
- Allows the identification of key innovative actions, for which a greater number of transfer or cooperation opportunities have been found.



**Figure 8.** View of Dashboard 2.3 with the cards distributed in terms of their current progress.

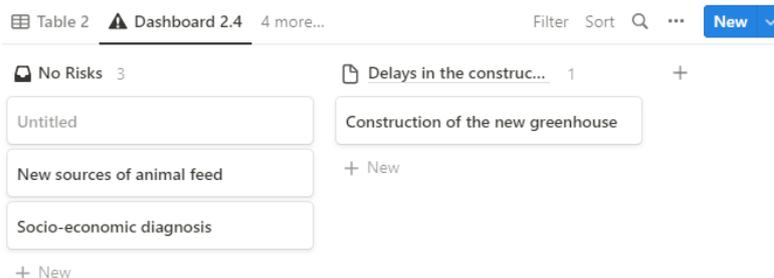
### 3.3.2.4. Dashboard 2.4

This dashboard allows you to visualize the Risks associated for each Innovation Actions. For this dashboard to make sense, the **Risk identification and measures to minimize the risks** database must have been previously completed.

By clicking on each of the risks in the list, you can access full information on each of the risks identified for that action.

Functionalities:

- Allows the identification of innovative actions for which no risk has been identified. For these actions, an analysis of the possible associated risks and a plan of measures to avoid or minimise them must be carried out. These actions will appear in the "No Risks" section.
- Allows the identification of risks common to several innovative actions, which may lead to the identification of important bottlenecks.



**Figure 9.** View of Dashboard 2.4 with the cards distributed in terms of their associated risks

### 3.3.3. Risks identification and measures to minimize the risks

This database is used to identify risks and perform a diagnosis of their relevance. A summary of the proposed risk control measures will also be included in this table. The fields visible in this table are the following:

FIELD OR COLUMN	TYPE OF DATA	DESCRIPTION
Risk	ID	Include a short title for the cooperation action. This Column identifies the item.
Description	Text	Descriptive text for the action.
Impact	TAG	Indicate how severe would the outcomes be if the risk occurred. <ol style="list-style-type: none"> <li>1. Insignificant – will not cause major deviations in the Region’s plan.</li> <li>2. Minor – may cause minor deviations in the Region’s plan.</li> <li>3. Significant – it may cause deviations in the Region’s plan.</li> <li>4. Major – it may cause high deviations in the Region’s plan, affecting to one objective of the Region.</li> <li>5. Severe – it may cause high deviations in the Region’s plan, affecting to more than one objective of the Region.</li> </ol>
Probability	TAG	Indicate the probability of the risk will happen. <ol style="list-style-type: none"> <li>1. Rare – unlikely to happen and/or have minor or negligible consequences</li> <li>2. Unlikely – possible to happen and/or to have moderate consequences</li> <li>3. Moderate – likely to happen and/or to have serious consequences</li> <li>4. Likely – almost sure to happen and/or to have major consequences</li> <li>5. Almost certain – sure to happen and/or have major consequences</li> </ol>
Related actions	Link	Select the related actions from the table  Journey roadmap for planned innovation actions
Measures	Text	List the measures proposed to minimise or avoid the risk.
Participants involved	Link	People involved in the item. You can select multiple people from the table
Status	TAG	Indicate the status regarding this risk: <ul style="list-style-type: none"> <li>- Not activated (the related action has not started yet)</li> <li>- Activated (The related action is ongoing and the Measures are activated),</li> <li>- Solved (The action has been successfully completed and the risk has been solved).</li> </ul>

**Table 12.** Fields description of Table 3: Risks identification and measures to minimize the risks

### 3.3.3.1. Dashboard 3.1

This dashboard shows the current status of the risks, and allows you to activate or resolve the risk by dragging from one column to another. Each card shows the risk, the proposed corrective measures, and the people involved.

Functionalities:

- Control of the current status of risks.
- Control of the people assigned to the management of each risk.
- Control of the proposed measures.



**Figure 10.** View of Dashboard 3.1.

### 3.3.3.2. Dashboard 3.2

This is a risk assessment matrix in which the Impact field is ordered from lowest to highest (left to right) in columns, and the probability is ordered from highest to lowest (top to bottom) in rows. Based on these values, a position (x,y) is assigned to the assessed risk. This position determines the overall risk level for each action.

		Impact				
		Insignificant	Minor	Significant	Major	Severe
Probability	Almost Certain	Medium	High	Very High	Extreme	Extreme
	Likely	Medium	Medium	High	Very High	Extreme
	Moderate	Low	Medium	Medium	High	Very High
	Unlikely	Very low	Low	Medium	Medium	High
	Rare	Very low	Very low	Low	Medium	Medium

**Table 13.** Fields description of Table 3: Risks identification and measures to minimize the risks

Functionalities:

- This table allows innovation actions to be mapped according to the risks.

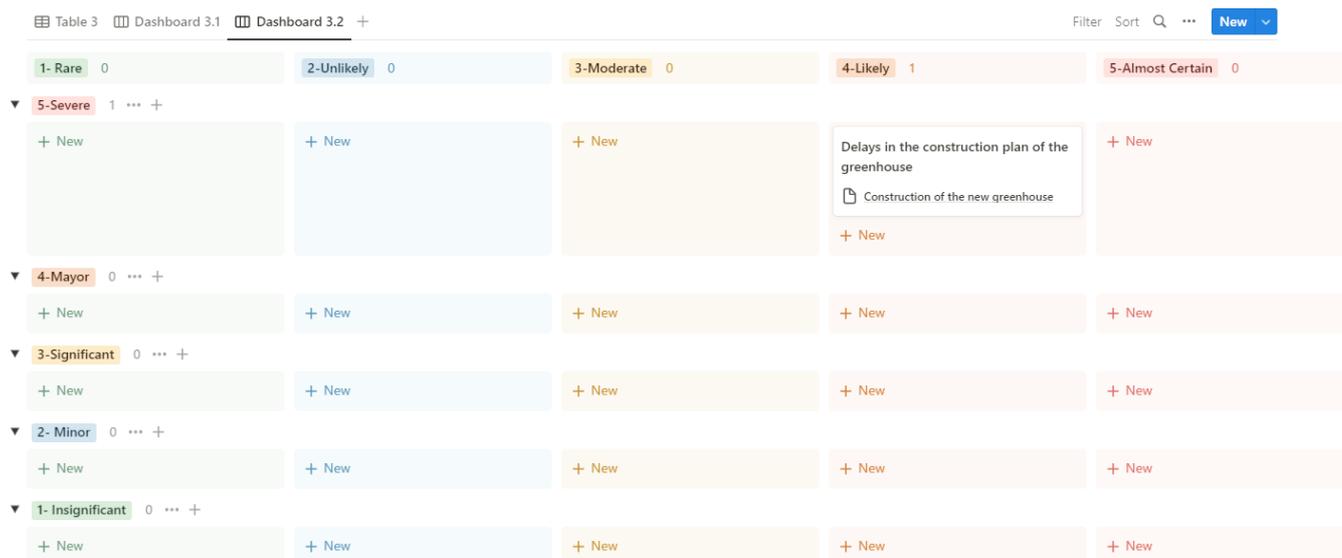


Figure 11. View of Dashboard 3.1. mapping the level of risks

### 3.3.4. Cross-border cooperation actions and transfer of best practices

This table lists the proposed cooperation actions and identifies best practices for transfer. The fields visible in this table are the following:

FIELD OR COLUMN	TYPE OF DATA	DESCRIPTION
Action	ID	Include a short title for the cooperation action. This Column identifies the item.
Description	Text	Descriptive text for the action.
Type of action	TAG	Specify the nature of the action: training, webinar, etc. You can create new tags.  Practice to transfer: Select the related actions from the table  Journey roadmap for planned innovation actions
Collaborators	Link	People involved in the item. You can select multiple people.
Dates	Date	Include the dates (start/end) or the date (deadline) on which the action will take place.
Progress	TAG	Indicate the progress of the action by selecting: Not started, In progress, or Done.
Regions to involve	TAG	Select the regions you wish to involve in this cooperation or best practice transfer action. You can select several regions. Select "Others" if the transfer will be made to third parties, indicating the name. You can create further labels for the designation "Others - Name".

Table 14. Fields description of Table 4: This table lists the proposed cooperation actions and identifies best practices for transfer.

#### 3.3.4.1. Dashboard 4.1

This panel is a calendar that shows the actions marked on their due date.

Dashboard 4.1 Filter Sort Q ... New

June 2023 < Today >

Mon	Tue	Wed	Thu	Fri	Sat	Sun
29	30	31	Jun 1	2	3	4
5	6	7	8	9 Key inn...	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25

**Figure 12.** View of Dashboard 4.1.

---

### 3.3.4.2. Dashboard 4.2

Kanban-type board on which to visualise the current status of cooperation actions, including information on the people involved and the best practices to be transferred. The elements are grouped according to the 🚚 Progress field, and are ordered as follows: Not started > In progress > Stopped > Done.

From this panel there is the possibility to change the progress of an action by drop and drag the card to another section.

Functionalities:

- Evaluate the status of cooperation actions.
- Identify bottlenecks (increase of tasks in the "Stopped" or "Not started" section).

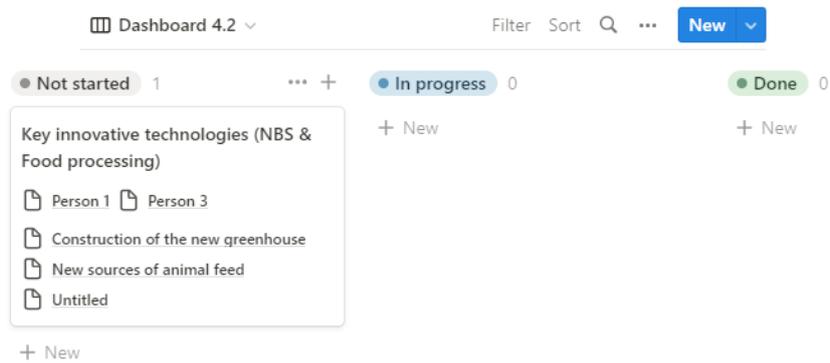


Figure 13. View of Dashboard 4.2.

### 3.3.4.3. Dashboard 4.3

This panel shows the cooperation actions grouped by region, also displaying information on the type of action and practice to be transferred.

Functionalities:

- See the actions to be shared with each region grouped together.
- Identify regions with greater opportunities for collaboration.
- Coordinate actions between regions.

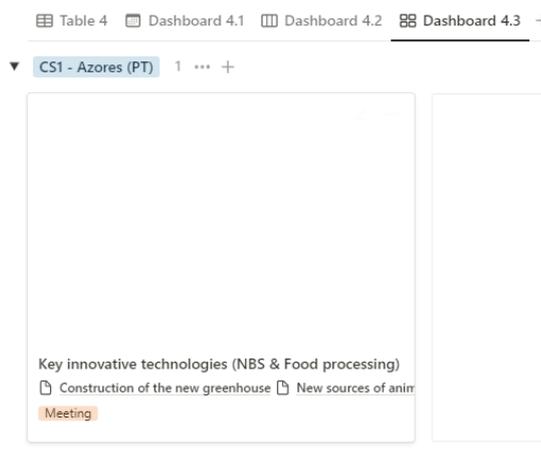


Figure 14. View of Dashboard 4.3.

## 4. Roadmap for Regions

### 4.1. Challenge Suite 1. Focus on Faster.

#### 4.1.1. Roadmap for Basque Region

##### 4.1.1.1. Partners involved

The partners involved in this region are five, all direct partners of the project. These partners are: TECNALIA, Ihobe, Basque Government, AZTI and ZABALA. The people involved in each of them have been identified and tasks have been assigned to each of them, with a few exceptions. There are no people without an assigned entity and no participation of entities outside the project has been declared.

The following figure shows the final result of the Dashboard 1.1 view at M5.

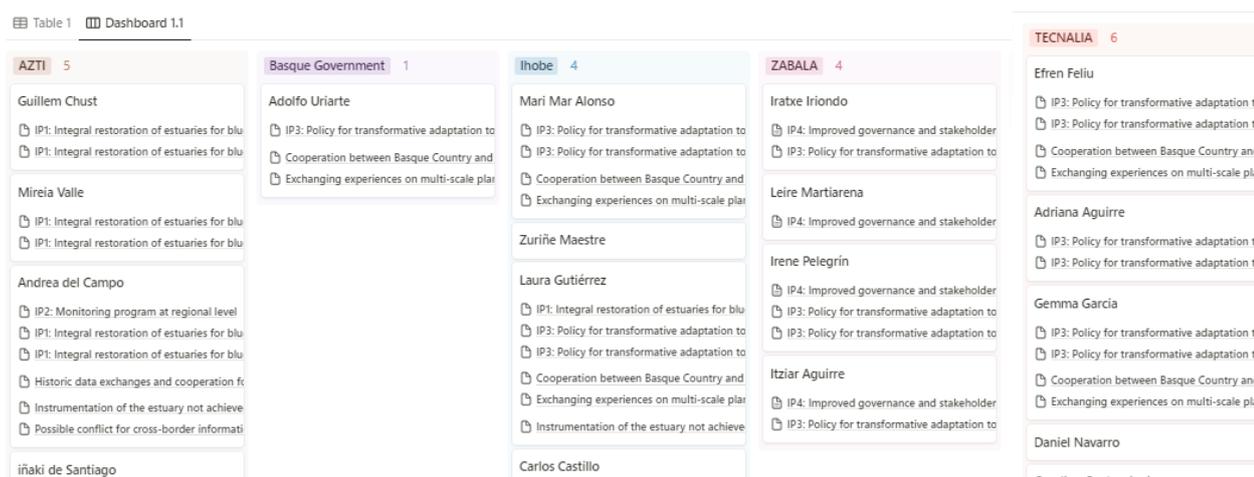


Figure 15. View of Dashboard 1.1. for Basque Region at M5.

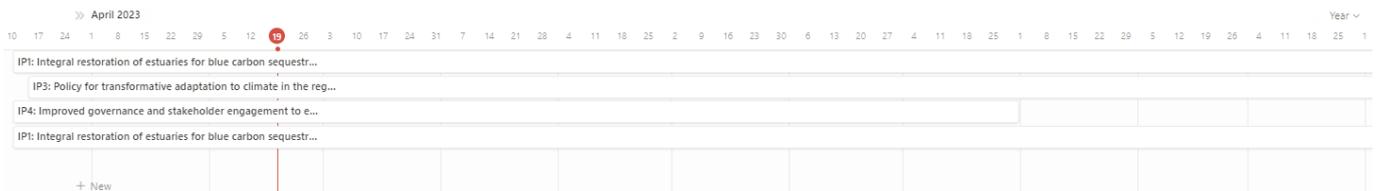
##### 4.1.1.2. Planned innovation actions

Regarding the Planned Innovation Actions, five innovation actions have been described, of which four are already in progress (\*):

- (\*) IP 1: Integral restoration of estuaries for blue carbon sequestration and climate change adaptation
  - o (\*) IP1.1: Environmental recovery of the marshes of San Lorenzo "Plaiundi"
  - o (\*) IP1.2: Local scale monitoring program
- IP 2: Monitoring program at regional level

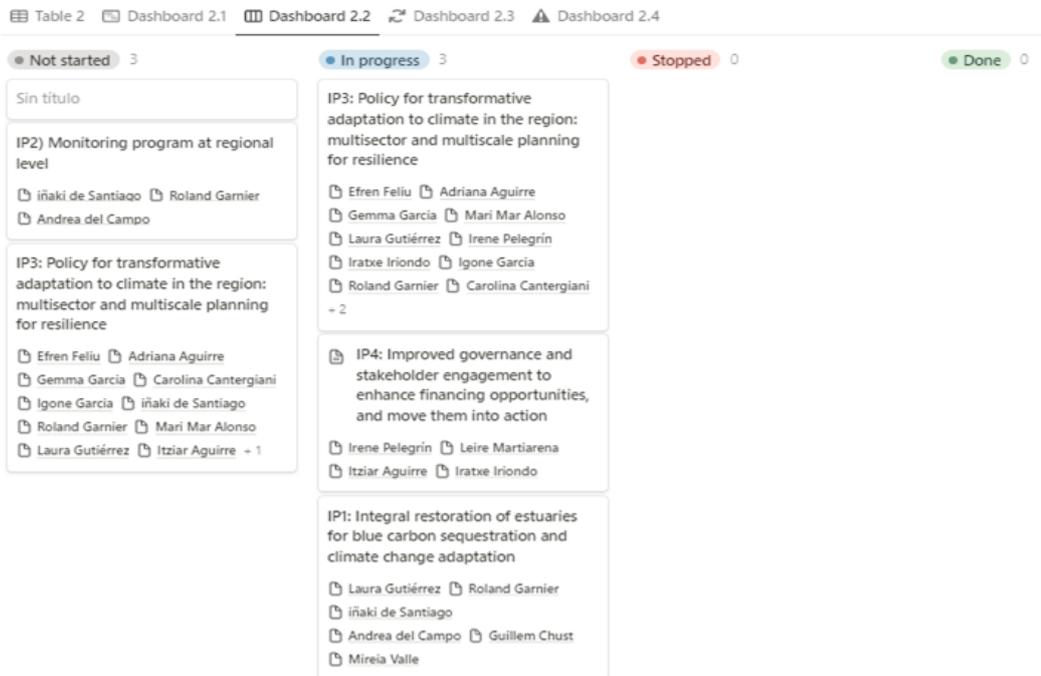
- IP 3: Policy for transformative adaptation to climate in the region: multisector and multiscale planning for resilience
  - o (\*) IP3.1. Diagnosis of the planning and regulatory framework and Key variables.
  - o IP3.2. Co-created strategic planning of the Basque Adaptation Mission
- (\*) IP4: Improved governance and stakeholder engagement to enhance financing opportunities and move them into action

The figure below shows the timeline resulting from the first action planning at M5, for the next year. The date marked in red corresponds to 19/06/2023 and the graph marks the passage of the date approximately every 15 days. This view starts in April 2023 and finalises in April 2024.



**Figure 16.** View of Dashboard 2.1. for Basque Region at M5.

These four actions are listed on the Kanban board as in progress, as shown in the figure below. In addition, staff has been correctly assigned to each of them, including the unstarted actions.

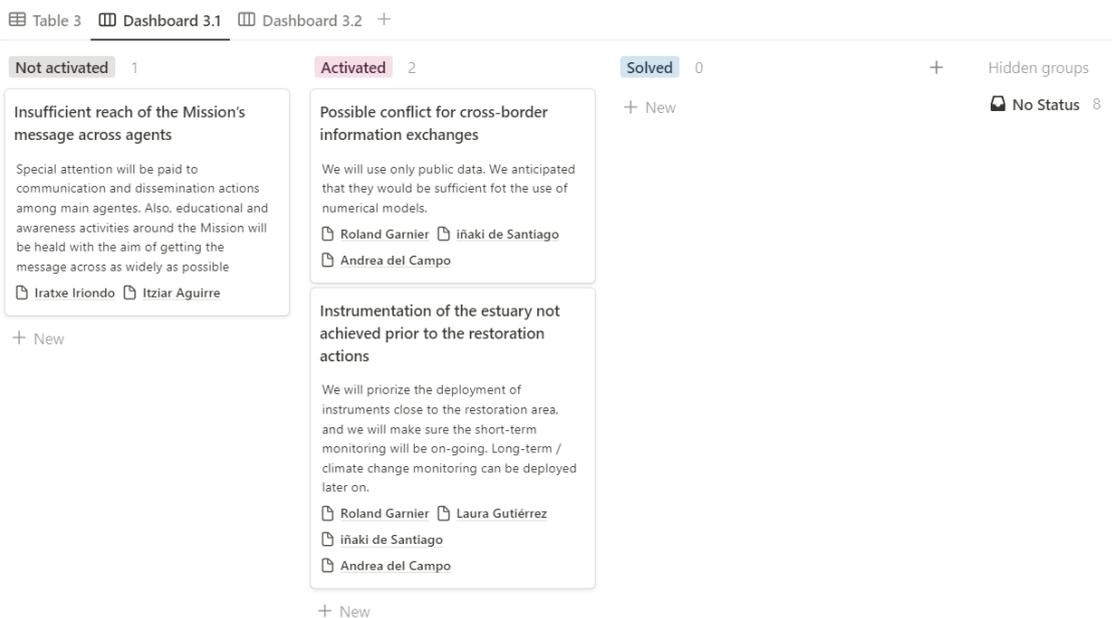


**Figure 17.** View of Dashboard 2.2. for Basque Region at M5.

### 4.1.1.3. Risks identification and measures to minimize the risks

With regard to the assessment of risks associated with innovation actions, a total of 11 risks have been identified and evaluated. Only IP2 action does not have an associated risk. This action has not yet started; therefore, it is recommended that the risk assessment be carried out prior to the start date of this action.

The Kanban board analysis of the status of these identified risks shows that 2 of the 11 risks are activated and 1 is not activated. The rest do not have an assigned status, so it is recommended that the status of the “No Status” risks be changed to "Not activated" so that they can be correctly displayed in the analysis. These risks also have personnel assigned to monitor them. The view of this panel can be seen in the figure below.



**Figure 18.** View of Dashboard 3.1. for Basque Region at M5.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.

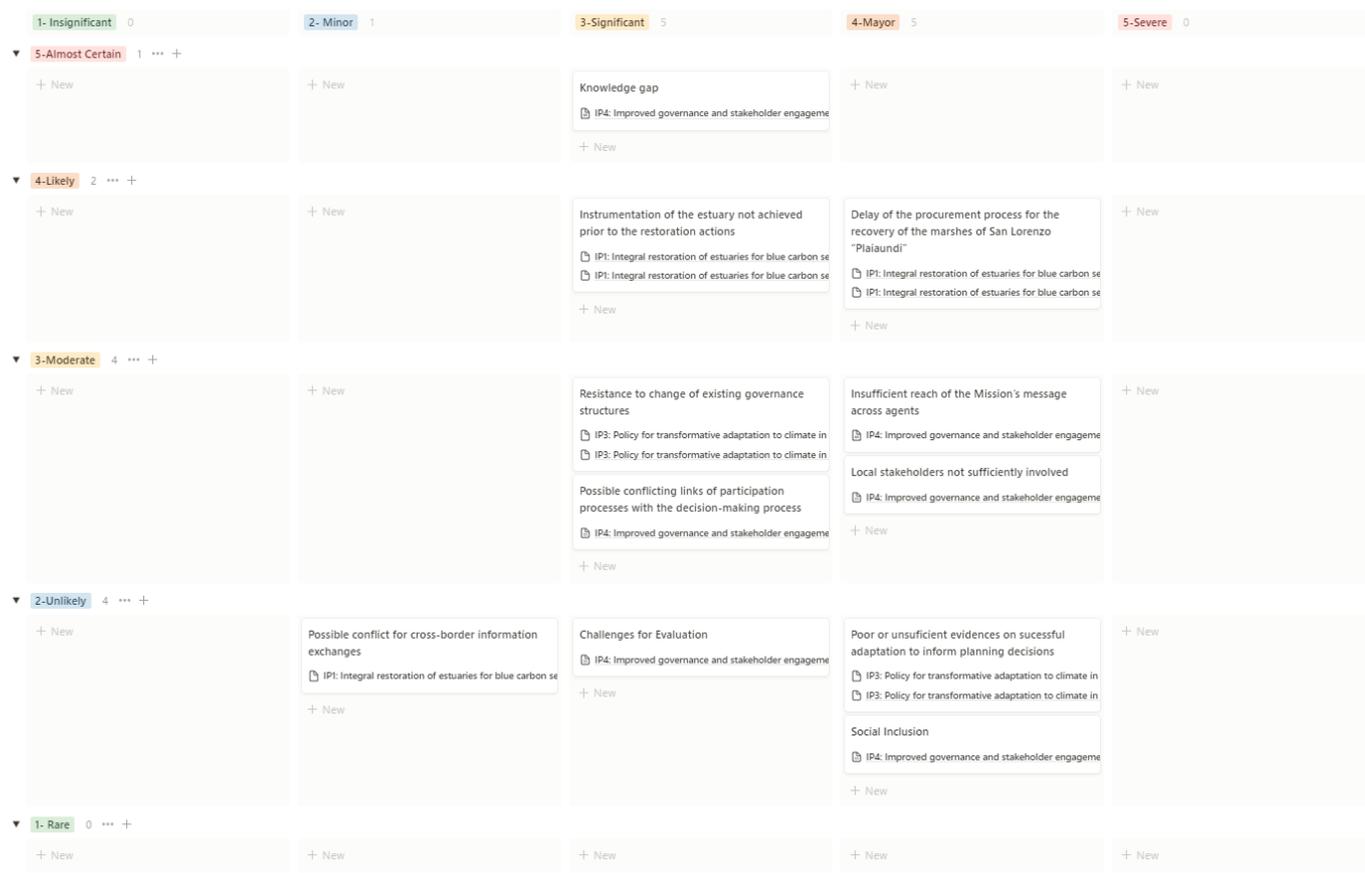


Figure 19. View of Dashboard 3.2. for Basque Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 2 risks have been identified as **Very high**, 3 as **High**, 5 as **Medium** and 1 as **Low**. Intensive monitoring of the risks identified as Very High, High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain			●		
Likely			●	●	
Moderate			●●	●●	
Unlikely		●	●	●●	
Rare					

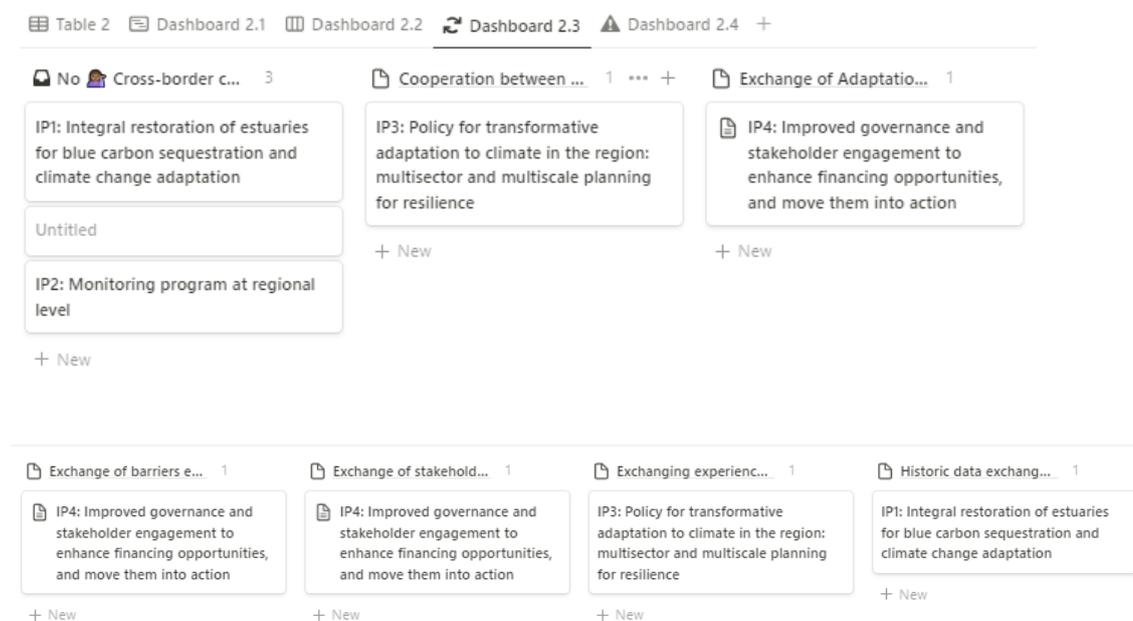
Table 15. Risk assessment for Basque Region

#### 4.1.1.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 6 actions for cooperation and transfer of good practices have been identified, covering 4 of the 6 proposed innovation actions. Specifically, the actions involved in the transfer are (\*):

- IP 1: Integral restoration of estuaries for blue carbon sequestration and climate change adaptation
  - o (\*) IP1.1: Environmental recovery of the marshes of San Lorenzo "Plaiiaundi"
  - o IP1.2: Local scale monitoring program
- IP 2: Monitoring program at regional level
- IP 3: Policy for transformative adaptation to climate in the region: multisector and multiscale planning for resilience
  - o (\*) IP3.1. Diagnosis of the planning and regulatory framework and Key variables.
  - o (\*) IP3.2. Co-created strategic planning of the Basque Adaptation Mission
- (\*) IP4: Improved governance and stakeholder engagement to enhance financing opportunities and move them into action

The distribution of actions is shown in the figure below.



**Figure 20.** View of Dashboard 2.3. for Basque Region at M5.

All proposed transfer and cooperation actions have a proposed date, with the first action planned for December 2023 (Dashboard 4.1). Consequently, all actions appear as "not started" on the Kanban board (Dashboard 4.2).

Most of them have also identified the Region(s) with which to collaborate, as shown in the figure below. Transfer actions without an assigned region, however, have the collaboration implicit in the name of the action ("Cooperation between Basque Country and Aquitaine for development of planning guidelines for coastal adaptation" and

“Exchanging experiences on multi-scale planning and governance between Basque Country and Toscana”), so it is recommended to fill in this data for the analysis to be displayed correctly in the view (Dashboard 4.3). The result of this view shows the collaborative actions identified by region, and sorted by CS.

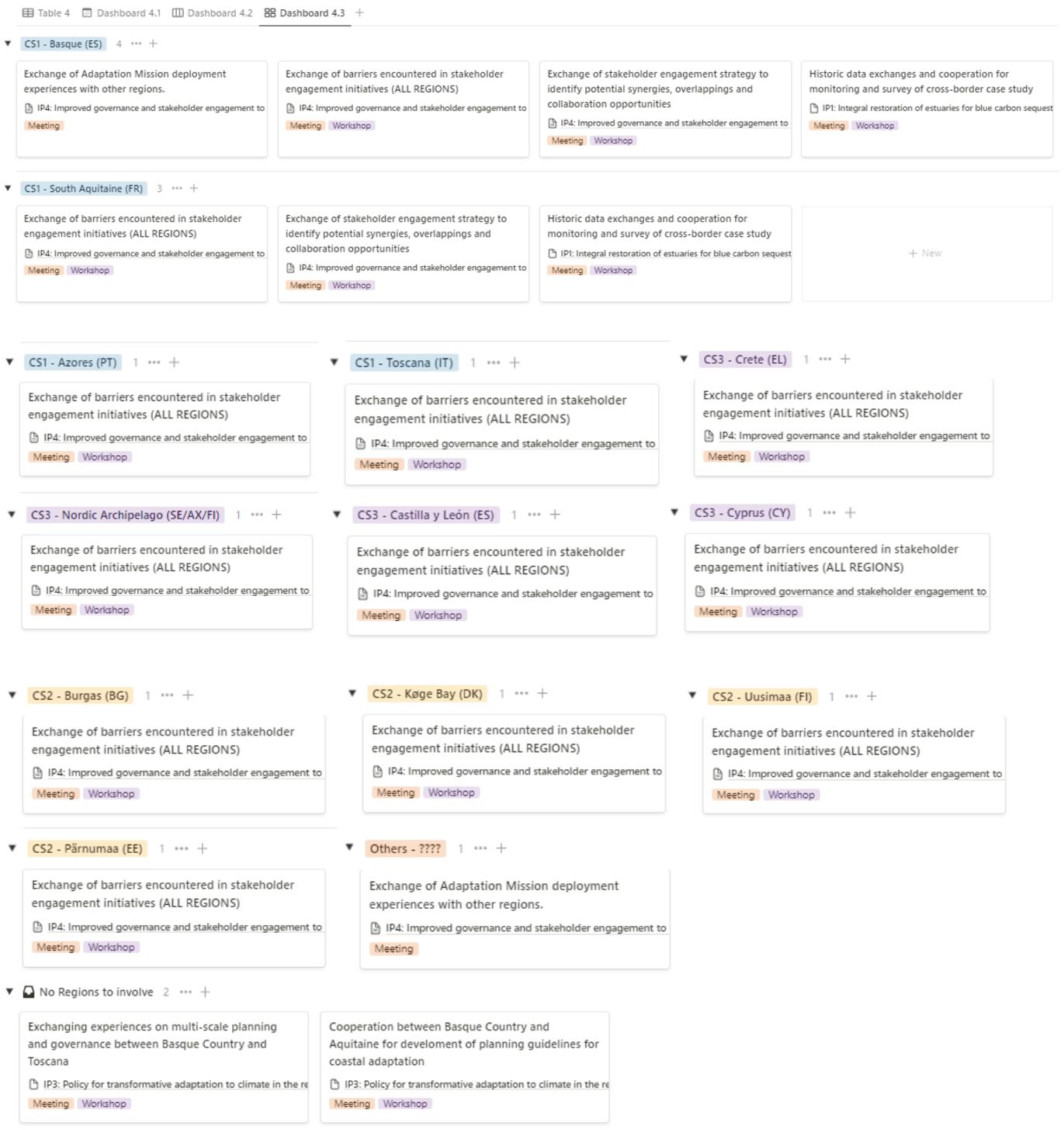


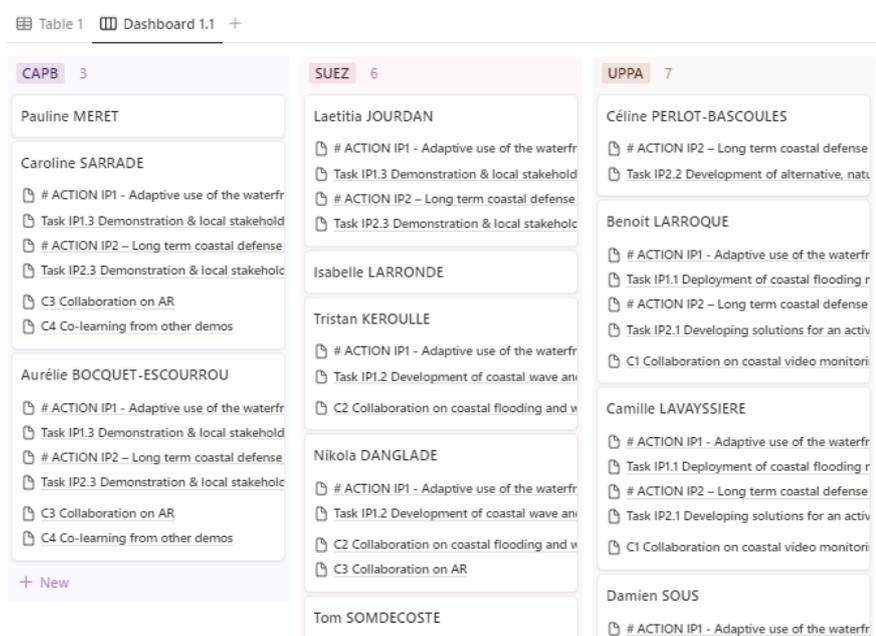
Figure 21. View of Dashboard 4.3. for Basque Region at M5.

## 4.1.2. Roadmap for South Aquitaine

### 4.1.2.1. Partners involved

The partners involved in this region are three, all direct partners of the project. These partners are: CAPB, SUEZ, and UPPA. The people involved in each of them have been identified and tasks have been assigned to each of them, with a few exceptions. There are no people without an assigned entity and no participation of entities outside the project has been declared.

The following figure shows the final result of the Dashboard 1.1 view at M5.



**Figure 22.** View of Dashboard 1.1. for South Aquitaine Region at M5.

### 4.1.2.2. Planned innovation actions

Regarding the Planned Innovation Actions, 2 innovation actions have been described divided in 5 Task. From these 5 tasks, 2 are already in progress (\*):

- (\*) # ACTION IP1 - Adaptive use of the waterfront based on real time risk knowledge
  - o (\*) Task IP1.1 Deployment of coastal flooding monitoring systems
  - o Task IP1.2 Development of coastal wave and flooding modelling/forecasting capacities
  - o Task IP1.3 Demonstration & local stakeholders engagement for coastal flooding decision-support tools
- (\*) # ACTION IP2 – Long term coastal defense strategy
  - o (\*) Task IP2.1 Developing solutions for an active management of man-made defense system (breakwater)

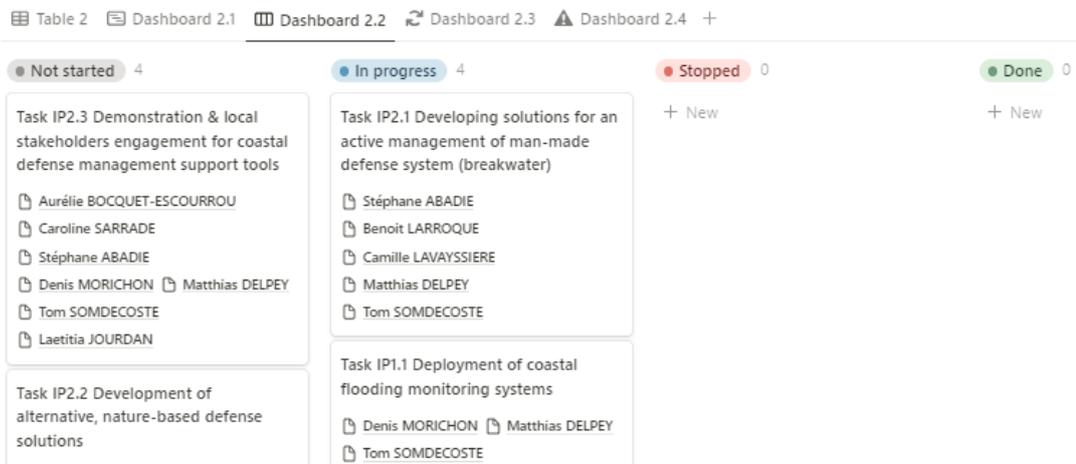
- *Task IP2.2 Development of alternative, nature-based defense solutions*
- *Task IP2.3 Demonstration & local stakeholders engagement for coastal defense management support tools.*

The figure below shows the timeline resulting from the first action planning at M5, for the next year. The date marked in red corresponds to 20/06/2023 and the graph marks the passage of the date approximately every 7 days. This view starts in March 2023 and finalises in March 2024.



**Figure 23.** View of Dashboard 2.1. for South Aquitaine Region at M5.

These 2 actions and its 2 Tasks are listed on the Kanban board as “in progress”, as shown in the figure below. In addition, staff has been correctly assigned to each of them, including the unstarted actions.



**Figure 24.** View of Dashboard 2.2. for South Aquitaine Region at M5.

### 4.1.2.3. Risks identification and measures to minimize the risks

With regard to the assessment of risks associated with innovation actions, a total of 5 risks have been identified and evaluated. There are no actions for which at least 1 risk has not been identified, so it is considered that a complete identification of risks has been carried out.

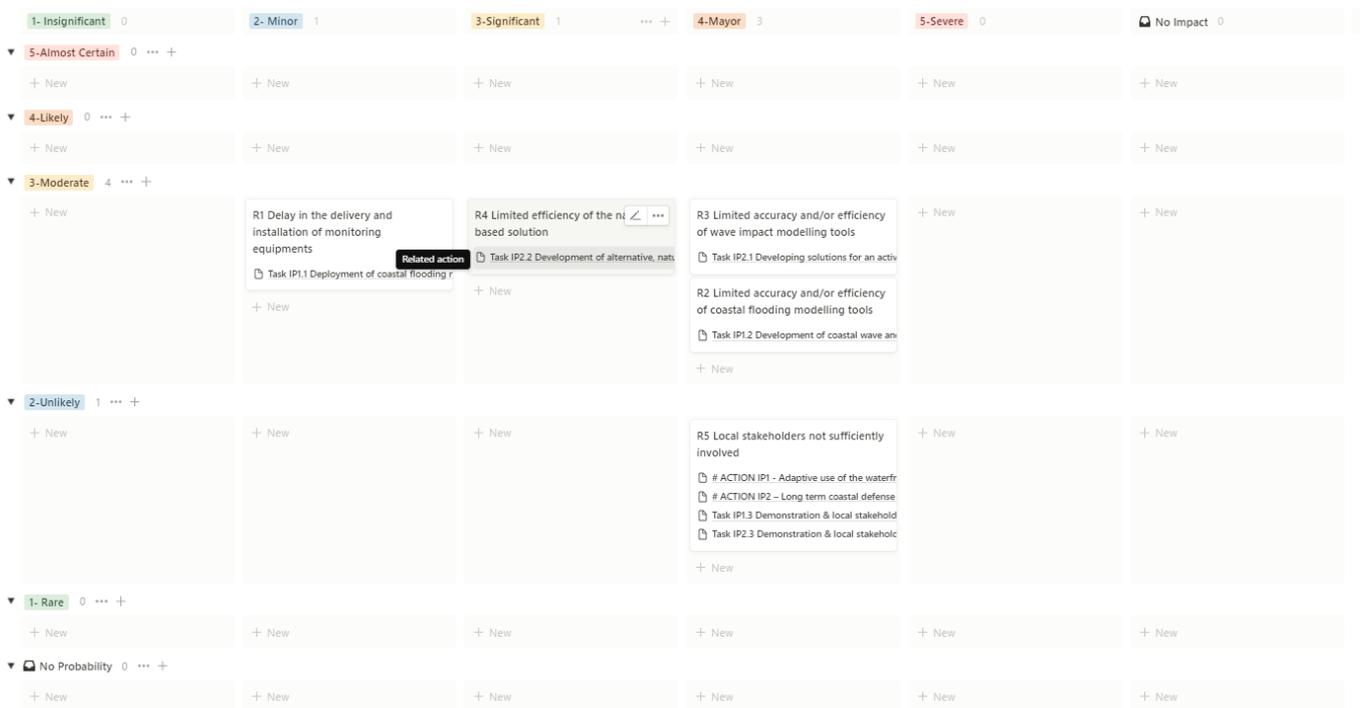
The Kanban analysis of the risks has not been completed, as no status has been assigned to any of them. It is recommended that the classification of these risks is done by choosing "Not activated" or "Activated" depending on the status of the associated action. Thus, if the action has started, the risk monitoring should be activated. The view of this panel can be seen in the figure below.



**Figure 25.** View of Dashboard 3.1. for South Aquitaine Region at M5.

It is also necessary to assign at least one person from the team in the region responsible for risk monitoring (Participants Involved column in Table 3).

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.



**Figure 26.** View of Dashboard 3.2. for South Aquitaine Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 2 risks have been identified as **High** and 3 as **Medium**. Intensive monitoring of the risks identified as High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					
Likely					
Moderate		●	●	●●	
Unlikely				●	
Rare					

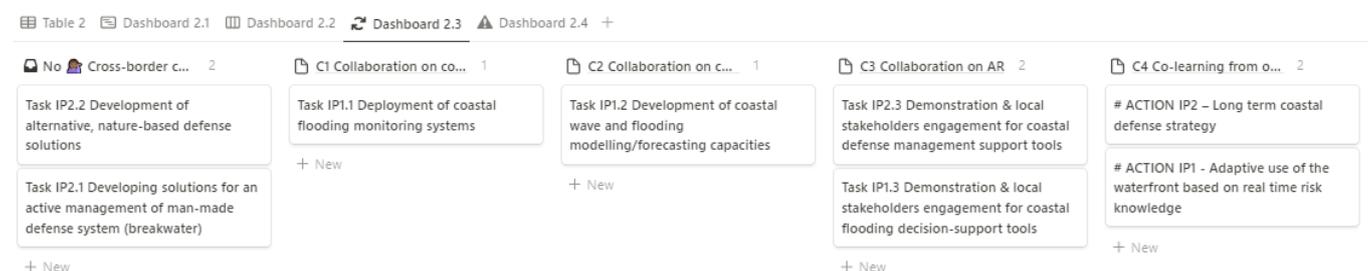
**Table 16.** Risk assessment for South Aquitaine Region

#### 4.1.2.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 4 actions for cooperation and transfer of good practices have been identified, covering 4 of the 6 proposed innovation actions (tasks). Specifically, the actions involved in the transfer are (\*):

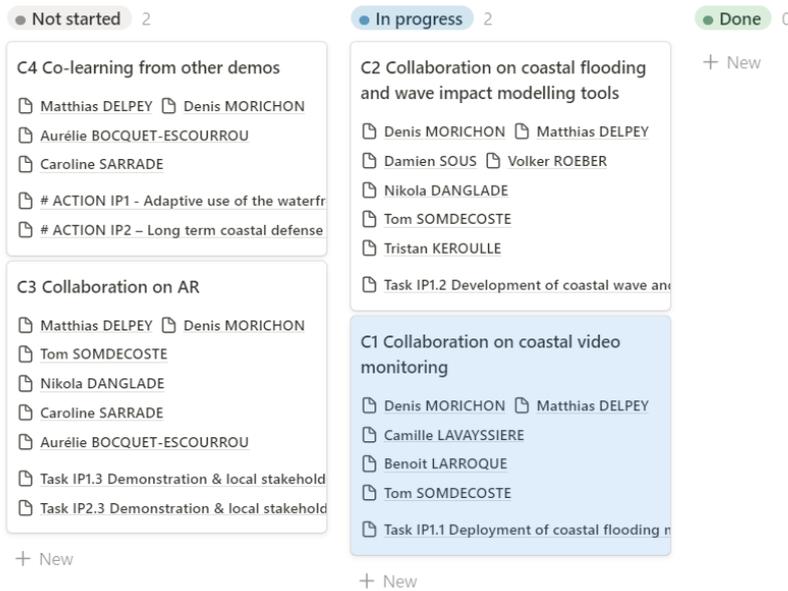
- (\*) # ACTION IP1 - Adaptive use of the waterfront based on real time risk knowledge
  - o (\*) Task IP1.1 Deployment of coastal flooding monitoring systems
  - o (\*) Task IP1.2 Development of coastal wave and flooding modelling/forecasting capacities
  - o (\*) Task IP1.3 Demonstration & local stakeholders engagement for coastal flooding decision-support tools
- (\*) # ACTION IP2 – Long term coastal defense strategy
  - o Task IP2.1 Developing solutions for an active management of man-made defense system (breakwater)
  - o Task IP2.2 Development of alternative, nature-based defense solutions
  - o (\*) Task IP2.3 Demonstration & local stakeholders engagement for coastal defense management support tools.

The distribution of actions is shown in the figure below.



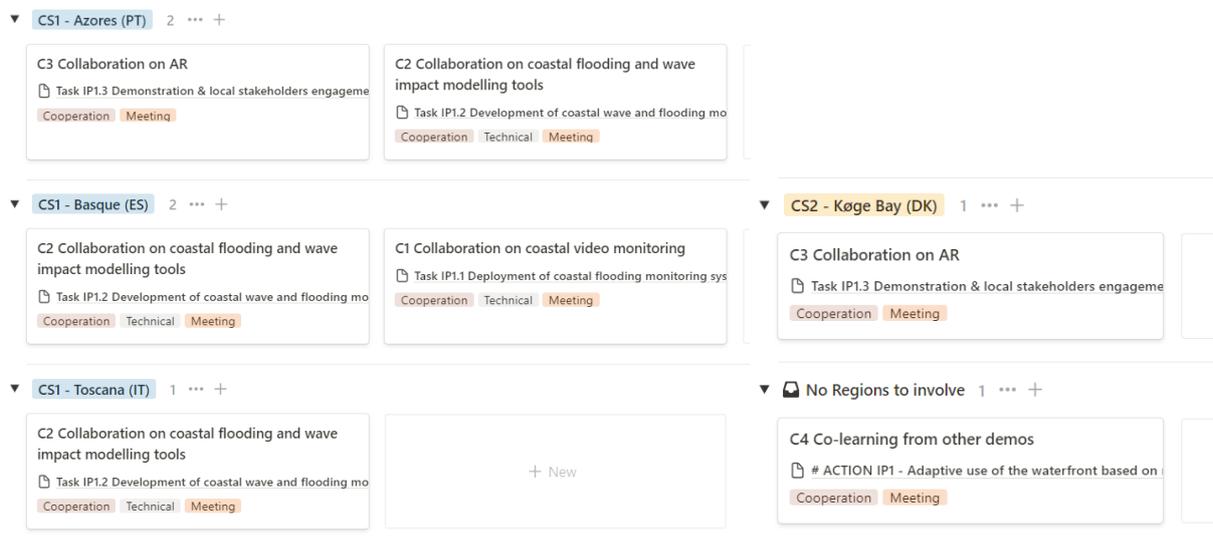
**Figure 27.** View of Dashboard 2.3. for South Aquitaine Region at M5.

All proposed transfer and cooperation actions have a proposed date, with 2 cooperation actions now “In progress” (Dashboard 4.2). The rest of actions are marked as “not started”, as can be seen in the next figure.



**Figure 28.** View of Dashboard 4.2. for South Aquitaine Region at M5.

Most of them have also identified the Region(s) with which to collaborate, as shown in the figure below. Only 1 Transfer action has not assigned a Region to cooperate so it is recommended to fill in this data for the analysis to be displayed correctly in the view (Dashboard 4.3). The result of this view shows the collaborative actions identified by region, and sorted by CS.



**Figure 29.** View of Dashboard 4.3. for South Aquitaine Region at M5.

### 4.1.3. Roadmap for Azores

#### 4.1.3.1. Partners involved

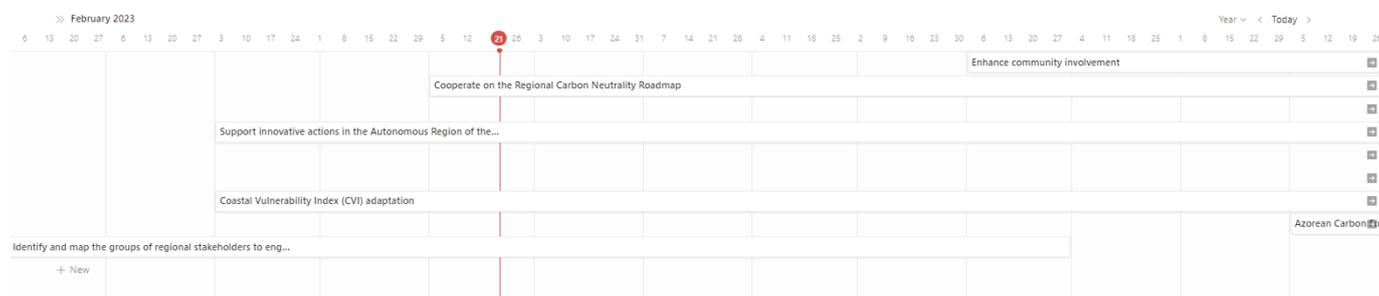
The partners involved in this region are 2, all direct partners of the project. These partners are: FRCT and UAC. The people involved have been identified and tasks have been assigned to each of them. There are no people without an assigned entity and no participation of entities outside the project has been declared.

#### 4.1.3.2. Planned innovation actions

Regarding the Planned Innovation Actions, 9 innovation actions have been described. From these 9 actions, 3 are already in progress (\*):

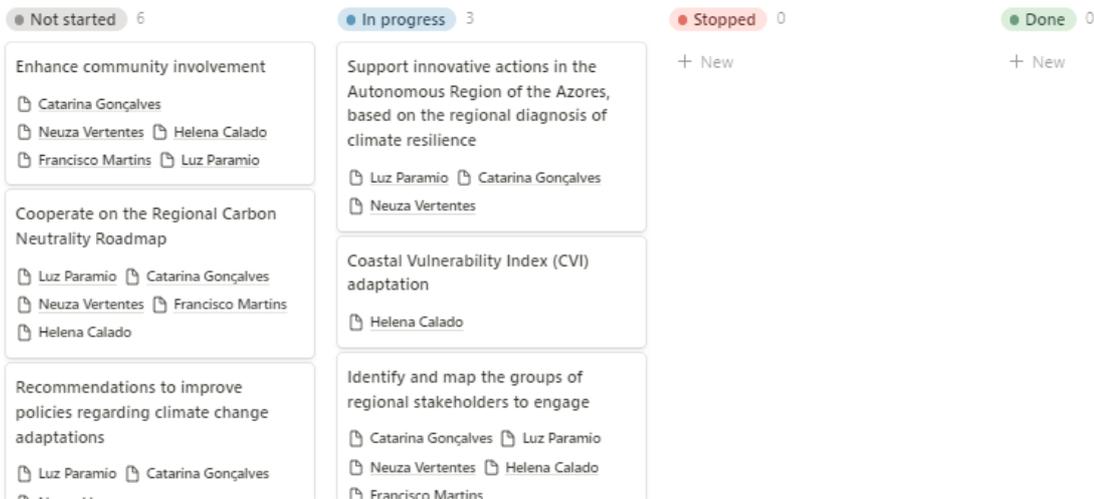
- (\*) *Identify and map the groups of regional stakeholders to engage*
- *Enhance community involvement*
- (\*) *Support innovative actions in the Autonomous Region of the Azores, based on the regional diagnosis of climate resilience*
- *Azorean Carbon Footprint App*
- *Cooperate on the Regional Carbon Neutrality Roadmap*
- (\*) *Coastal Vulnerability Index (CVI) adaptation*
- *Interactive Digital Coastal Vulnerability Map (AR/VR)*
- *“Marine life monitoring”*
- *Recommendations to improve policies regarding climate change adaptations*

The figure below shows the timeline resulting from the first action planning at M5, for the next year. The date marked in red corresponds to 21/06/2023 and the graph marks the passage of the date approximately every 7 days. This view starts in February 2023 and finalises in February 2024.



**Figure 30.** View of Dashboard 2.1. for Azores Region at M5.

These 3 actions are listed on the Kanban board as “in progress”, as shown in the figure below. In addition, staff has been correctly assigned to each of them, including the unstarted actions.



**Figure 31.** View of Dashboard 2.2. for Azores Region at M5.

### 4.1.3.3. Risks identification and measures to minimize the risks

With regard to the assessment of risks associated with innovation actions, a total of 11 risks have been identified and evaluated. There are no actions for which at least 1 risk has not been identified, so it is considered that a complete identification of risks has been carried out. In addition, each risk has been correctly identified and assigned personnel to monitor them.

The Kanban analysis of the risks has not been completed, as no status has been assigned to any of them. It is recommended that the classification of these risks is done by choosing "Not activated" or "Activated" depending on the status of the associated action. Thus, if the action has started, the risk monitoring should be activated. The view of this panel can be seen in the figure below.



**Figure 32.** View of Dashboard 3.1. for Azores Region at M5.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.

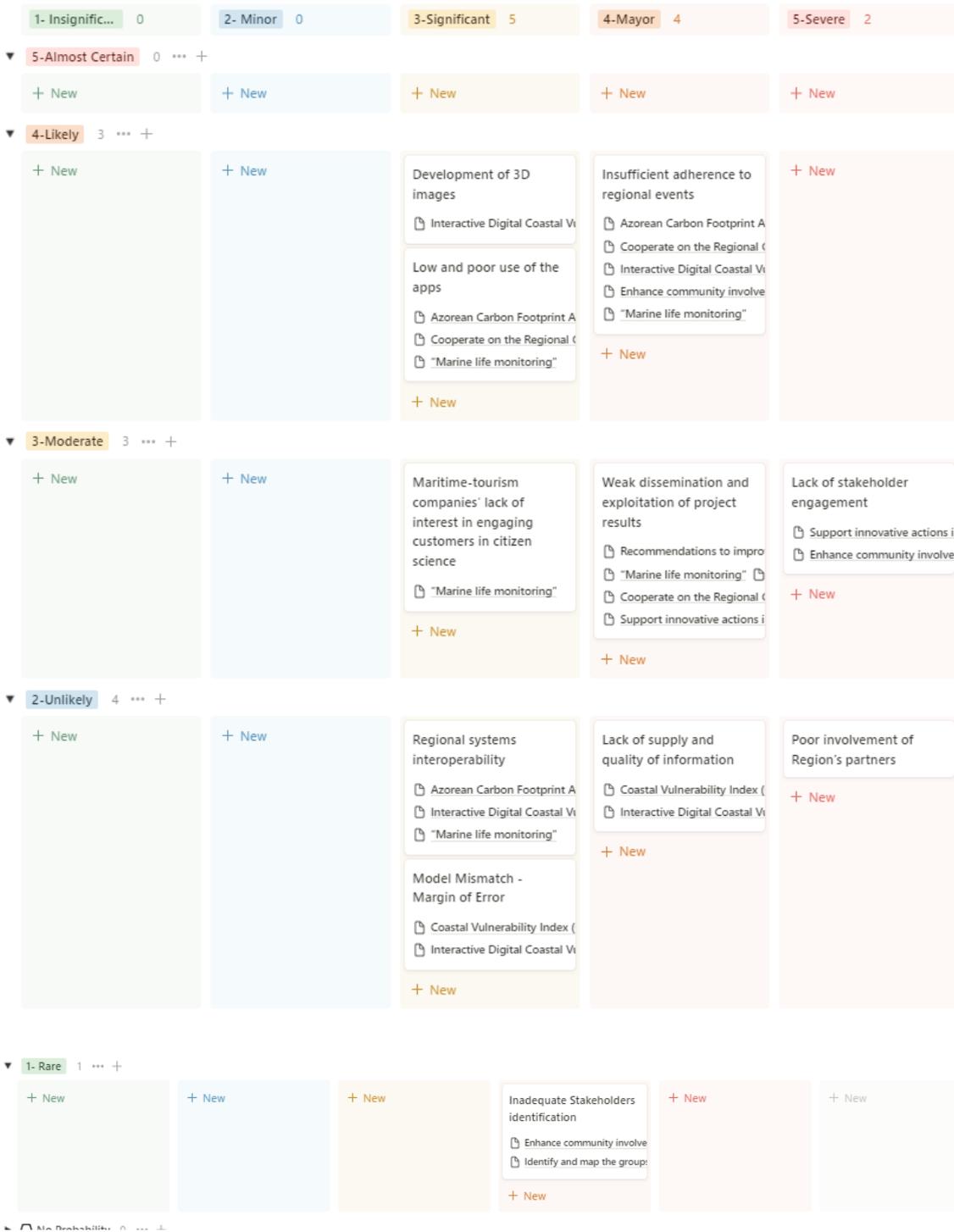


Figure 33. View of Dashboard 3.2. for Azores Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 2 risks have been identified as **Very High**, 4 risks have been identified as **High** and 5 as **Medium**. Intensive monitoring of the risks identified as Very High, High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					
Likely			●●	●	
Moderate			●	●	●
Unlikely			●●	●	●
Rare				●	

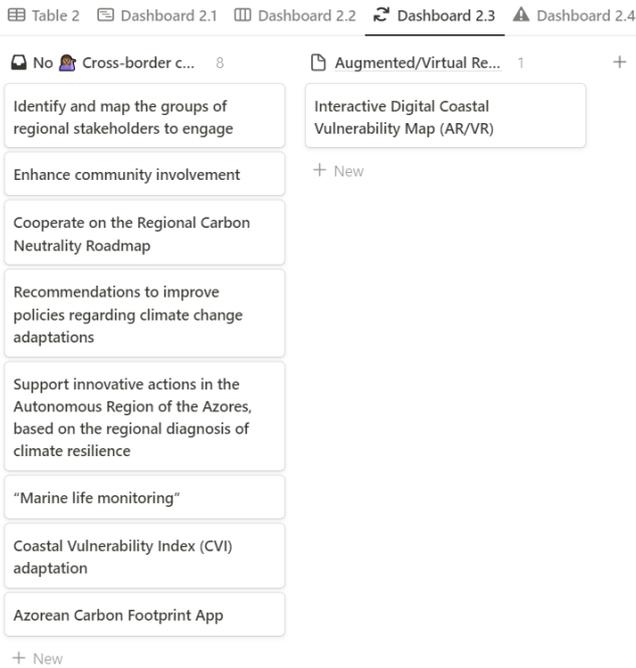
**Table 17.** Risk assessment for Azores Region

#### 4.1.3.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 3 actions for cooperation and transfer of good practices have been identified, covering 1 of the 9 proposed innovation actions (tasks). Specifically, the actions involved in the transfer are (\*):

- *Identify and map the groups of regional stakeholders to engage*
- *Enhance community involvement*
- *Support innovative actions in the Autonomous Region of the Azores, based on the regional diagnosis of climate resilience*
- *Azorean Carbon Footprint App*
- *Cooperate on the Regional Carbon Neutrality Roadmap*
- *Coastal Vulnerability Index (CVI) adaptation*
- *(\*) Interactive Digital Coastal Vulnerability Map (AR/VR)*
- *“Marine life monitoring”*
- *Recommendations to improve policies regarding climate change adaptations*

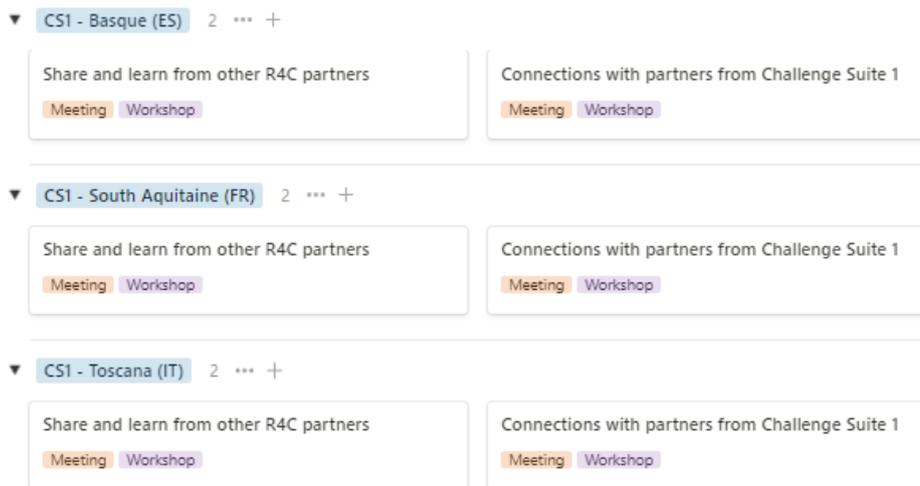
The distribution of actions is shown in the figure below.



**Figure 34.** View of Dashboard 2.3. for Azores Region at M5.

The date for the conclusion of transfer actions has not yet been estimated, so it is recommended to at least set a date for the most immediate actions and a tentative date for those more distant in time. The 3 identified actions are listed as "Not started" (Dashboard 4.2).

Region(s) to collaborate have been identified, as shown in the figure below. The result of this view shows the collaborative actions identified by region, and sorted by CS.



The screenshot displays a dashboard with the following content:

- CS2 - Burgas (BG)**: 1 Meeting, 1 Workshop, + New button.
- CS2 - Køge Bay (DK)**: 2 Meetings, 2 Workshops, Augmented/Virtual Reality section with 'Interactive Digital Coastal Vulnerability Map (AR/VR)' (1 Workshop, 1 Training).
- CS2 - Pärnumaa (EE)**: 1 Meeting, 1 Workshop.
- CS2 - Uusimaa (FI)**: 1 Meeting, 1 Workshop.
- CS3 - Castilla y León (ES)**: 1 Meeting, 1 Workshop.
- CS3 - Crete (EL)**: 1 Meeting, 1 Workshop.
- CS3 - Cyprus (CY)**: 1 Meeting, 1 Workshop.
- CS3 - Nordic Archipelago (SE/AX/FI)**: 1 Meeting, 1 Workshop, navigation icons.

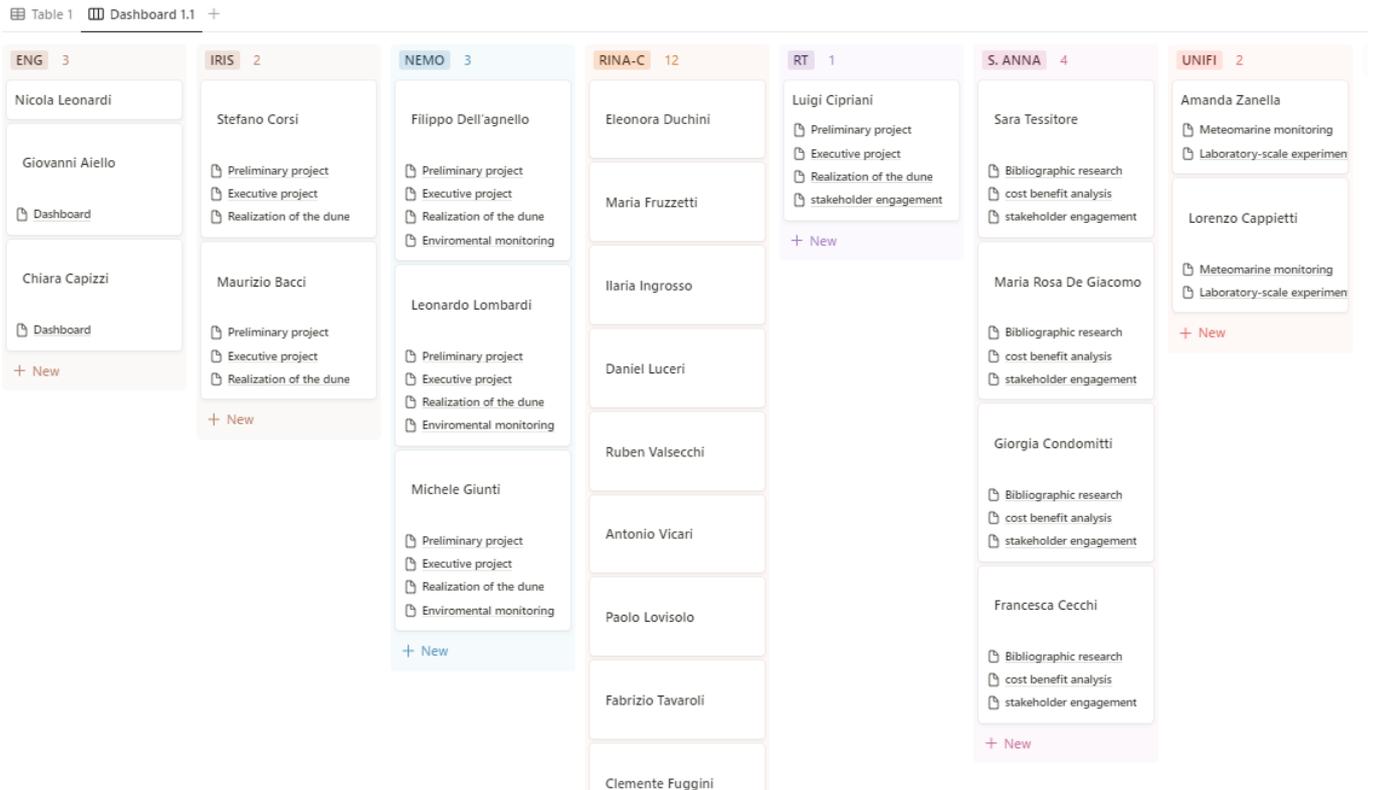
**Figure 35.** View of Dashboard 4.3. for Azores Region at M5.

## 4.1.4. Roadmap for Toscana

### 4.1.4.1. Partners involved

The partners involved in this region are four, all direct partners of the project. These partners are: RINA-C, RT, UNIFI, NEMO, IRIS, S. ANNA, ENG. The people involved in each of them have been identified and tasks have been assigned to each of them, with some exceptions. There are no people without an assigned entity and no participation of entities outside the project has been declared.

The following figure shows the final result of the Dashboard 1.1 view at M5.



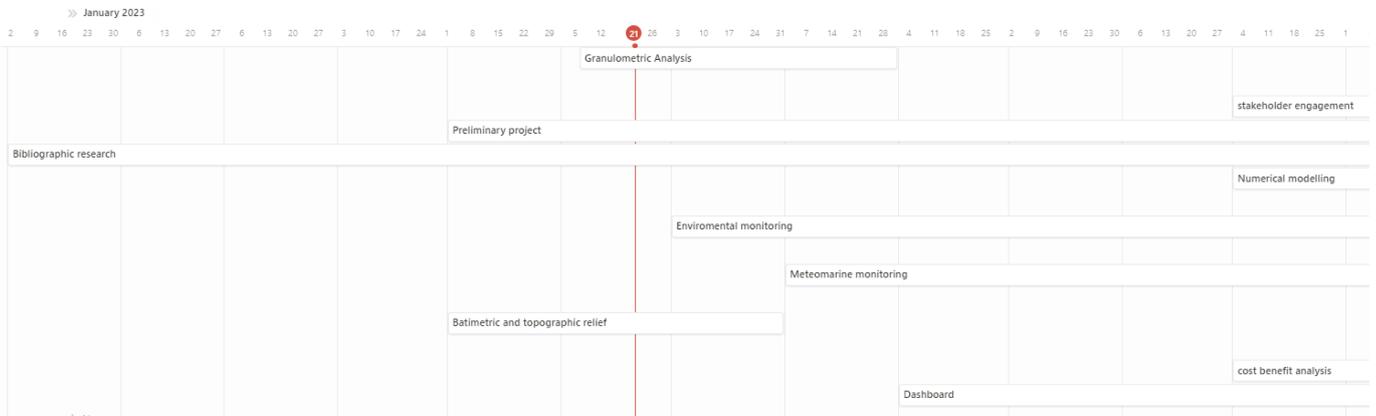
**Figure 36.** View of Dashboard 1.1. for Toscana Region at M5.

#### 4.1.4.2. Planned innovation actions

Regarding the Planned Innovation Actions, 15 innovation actions have been described, of which 3 are already in progress (\*):

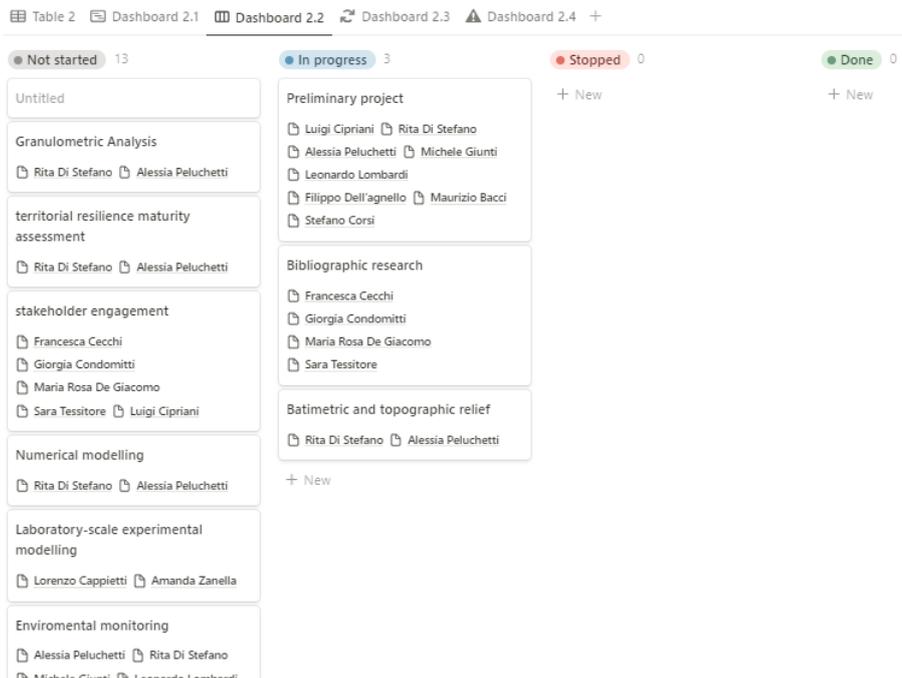
- (\*) Preliminary project
- Executive project
- Realization of the dune
- Granulometric Analysis
- Mechanical monitoring (fibre optic)
- Territorial resilience maturity assessment
- (\*) Batimetric and topographic relief
- Meteorarine monitoring
- Numerical modelling
- Laboratory-scale experimental modelling
- Environmental monitoring
- Dashboard
- (\*) Bibliographic research
- Cost benefit analysis
- Stakeholder engagement

The figure below shows the timeline resulting from the first action planning at M5, for the present year. The date marked in red corresponds to 21/06/2023 and the graph marks the passage of the date approximately every 7 days. This view starts in January 2023 and finalises in January 2024.



**Figure 37.** View of Dashboard 2.1. for Toscana Region at M5.

These 3 actions are listed on the Kanban board as in progress, as shown in the figure below. In addition, staff has been correctly assigned to each of them, including the unstarted actions.

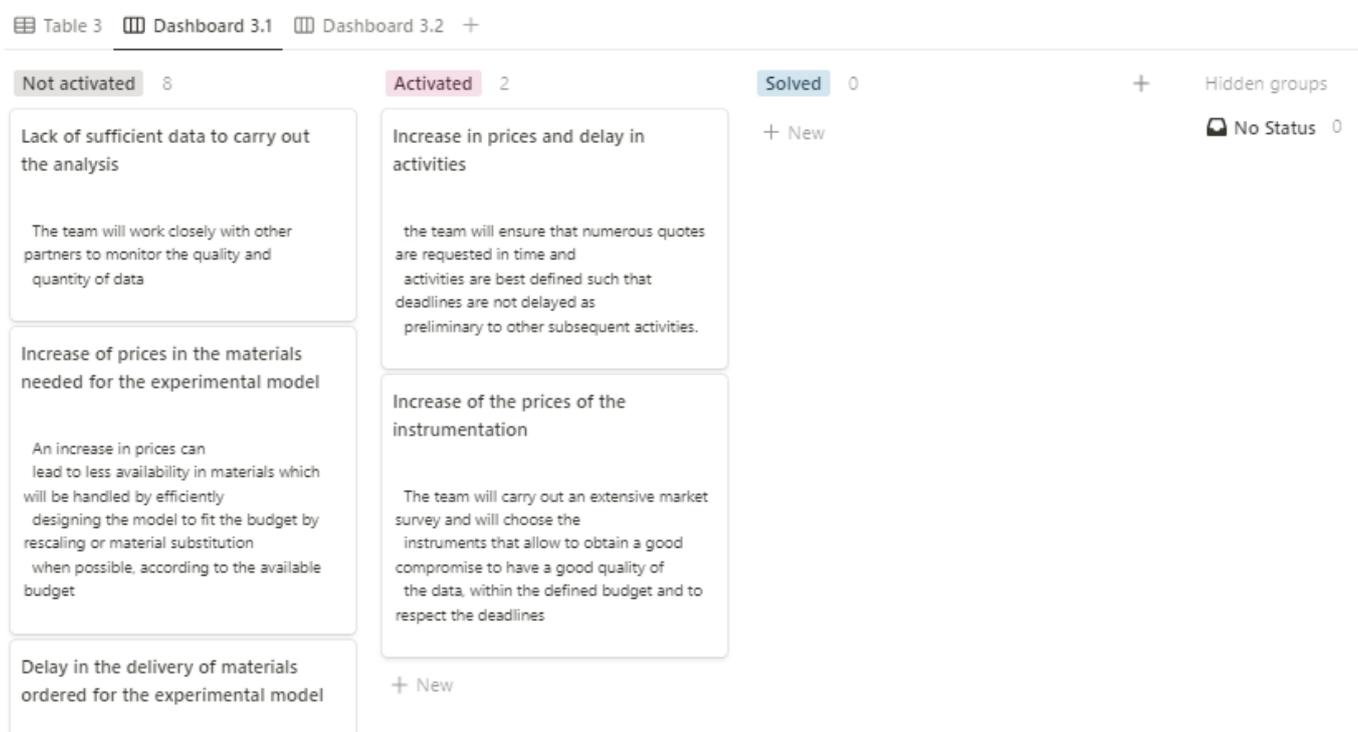


**Figure 38.** View of Dashboard 2.2. for Toscana Region at M5.

### 4.1.4.3. Risks identification and measures to minimize the risks

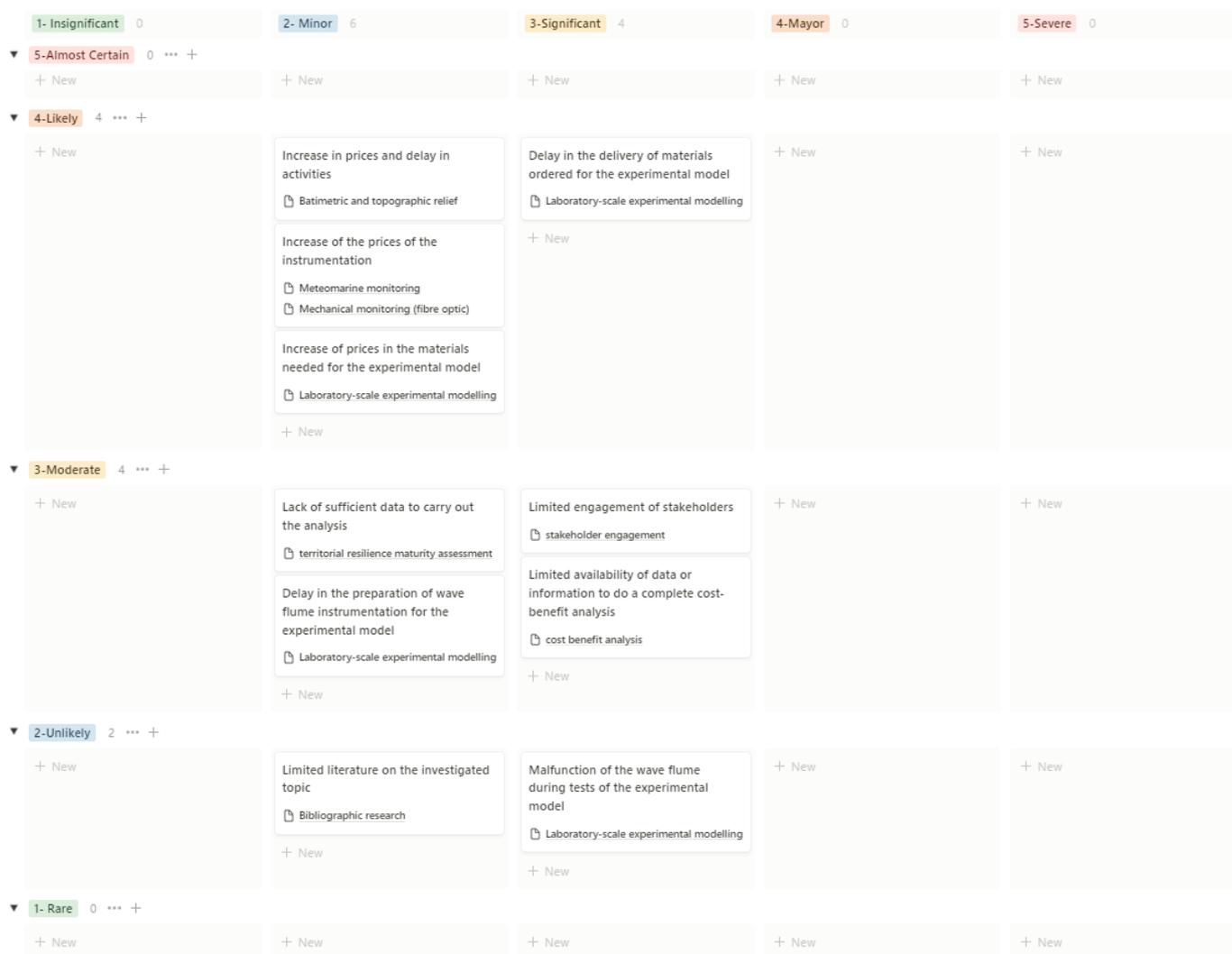
With regard to the assessment of risks associated with innovation actions, a total of 10 risks have been identified and evaluated. 7 action does not have an associated risk. Some of these actions has already started; therefore, it is recommended that the risk assessment be carried out prior to the start date of this action. It is also necessary to assign at least one person from the team in the region responsible for risk monitoring (Participants Involved column in Table 3).

The Kanban board analysis of the status of these identified risks shows that 2 of the 11 risks are activated and 8 are not activated. These risks also have personnel assigned to monitor them. The view of this panel can be seen in the figure below.



**Figure 39.** View of Dashboard 3.1. for Toscana Region at M5.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.



**Figure 40.** View of Dashboard 3.2. for Toscana Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 1 risks have been identified as **High**, 8 as **Medium** and 1 as **Low**. Intensive monitoring of the risks identified as High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					
Likely		●●●●	●		
Moderate		●●	●●		
Unlikely		●	●		
Rare					

**Table 18.** Risk assessment for Toscana Region

### 4.1.4.4. Cross-border cooperation actions and transfer of best practices

So far (M5) no transfer and cooperation actions have been identified in the Tuscany Region. It is recommended that in the coming months priority be given to the definition of a series of actions for the transfer of good practices and cooperation between regions. Section 2.3 identifies some practices identified for the Tuscany Region that can provide guidance in this process:

- *Modelling of coastal dynamics and structures, both leveraging on experimental and numerical models*
- *Organization of specific participatory events with the municipality authorities.*
- *Design and realization of an artificial dune and its ecosystem*
- *Modelling of coastal dynamics and structures, both leveraging on experimental and numerical models*

## 4.2. Challenge Suite 2. Focus on Smarter.

### 4.2.1. Roadmap for Køge Bay

#### 4.2.1.1. Partners involved

The partners involved in this region are five, all direct partners of the project. These partners are: RGH, DCA, UCP, VIA and ZEA. The people involved in each of them have been identified and tasks have been assigned to each of them, with a few exceptions. There are no people without an assigned entity and no participation of entities outside the project has been declared.

The following figure shows the final result of the Dashboard 1.1 view at M5.

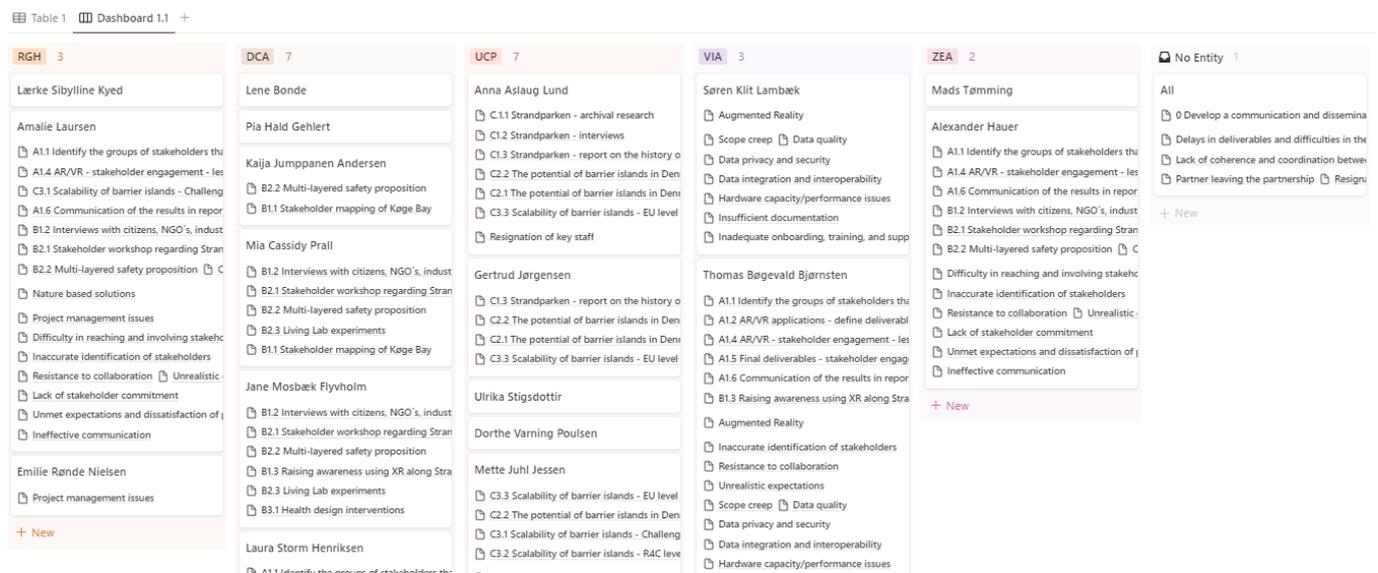


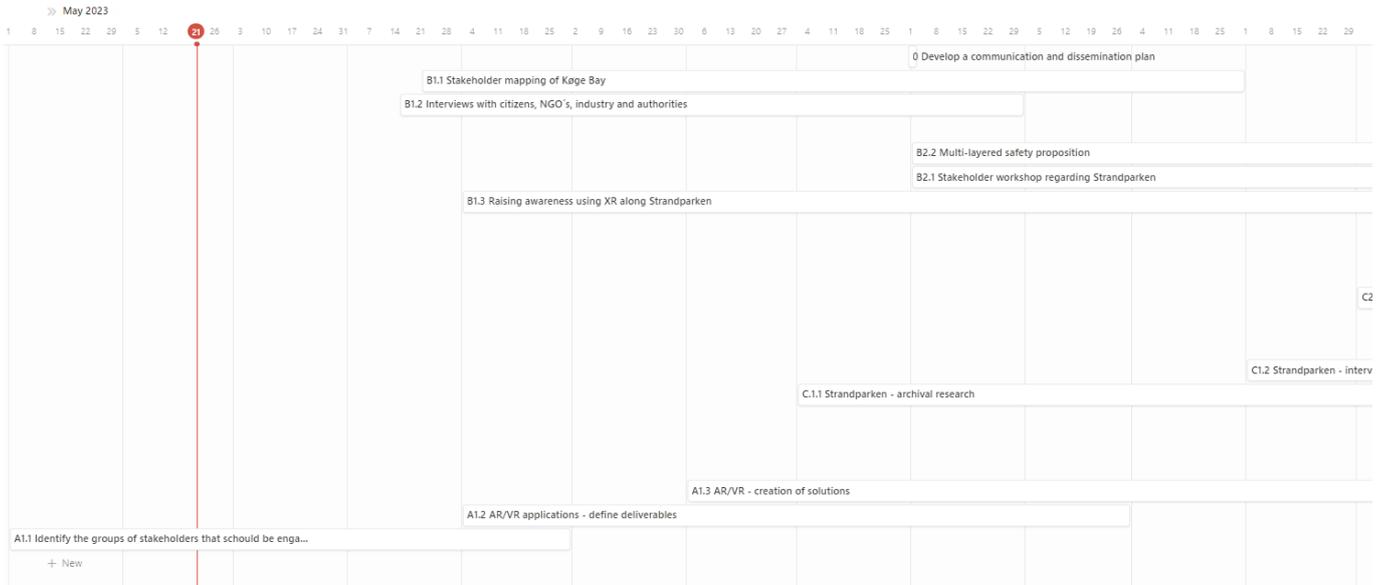
Figure 41. View of Dashboard 1.1. for Køge Bay Region at M5.

### 4.2.1.2. Planned innovation actions

Regarding the Planned Innovation Actions, 23 innovation actions have been described, of which 1 is already in progress (\*):

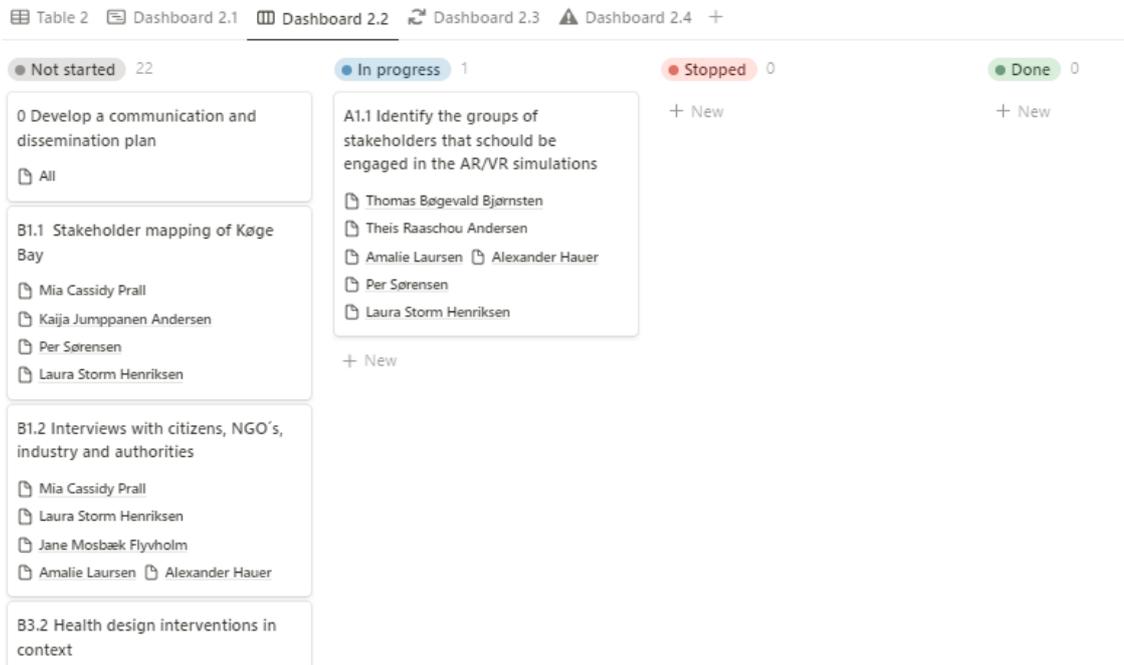
1. 0 Develop a communication and dissemination plan
2. (\*) A1.1 Identify the groups of stakeholders that should be engaged in the AR/VR simulations
3. A1.2 AR/VR applications - define deliverables
4. A1.3 AR/VR - creation of solutions
5. A1.4 AR/VR - stakeholder engagement - lessons learned
6. A1.5 Final deliverables - stakeholder engagement
7. A1.6 Communication of the results in reports, movies etc
8. B1.1 Stakeholder mapping of Køge Bay
9. B1.2 Interviews with citizens, NGO´s, industry and authorities
10. B1.3 Raising awareness using XR along Strandparken
11. B2.1 Stakeholder workshop regarding Strandparken
12. B2.2 Multi-layered safety proposition
13. B2.3 Living Lab experiments
14. B3.1 Health design interventions
15. B3.2 Health design interventions in context
16. C.1.1 Strandparken - archival research
17. C1.2 Strandparken - interviews
18. C1.3 Strandparken - report on the history of Strandparken
19. C2.1 The potential of barrier islands in Denmark - analysis
20. C2.2 The potential of barrier islands in Denmark - report
21. C3.1 Scalability of barrier islands - Challenge Suite 2 level
22. C3.2 Scalability of barrier islands - R4C level
23. C3.3 Scalability of barrier islands - EU level framework

The figure below shows the timeline resulting from the first action planning at M5, for the next year. The date marked in red corresponds to 21/06/2023 and the graph marks the passage of the date approximately every 7 days. This view starts in May 2023 and finalises in May 2024.



**Figure 42.** View of Dashboard 2.1. for Køge Bay Region at M5.

1 action is listed on the Kanban board as in progress and the rest as “Not started”, as shown in the figure below. In addition, staff has been correctly assigned to each of them, including the unstarted actions.

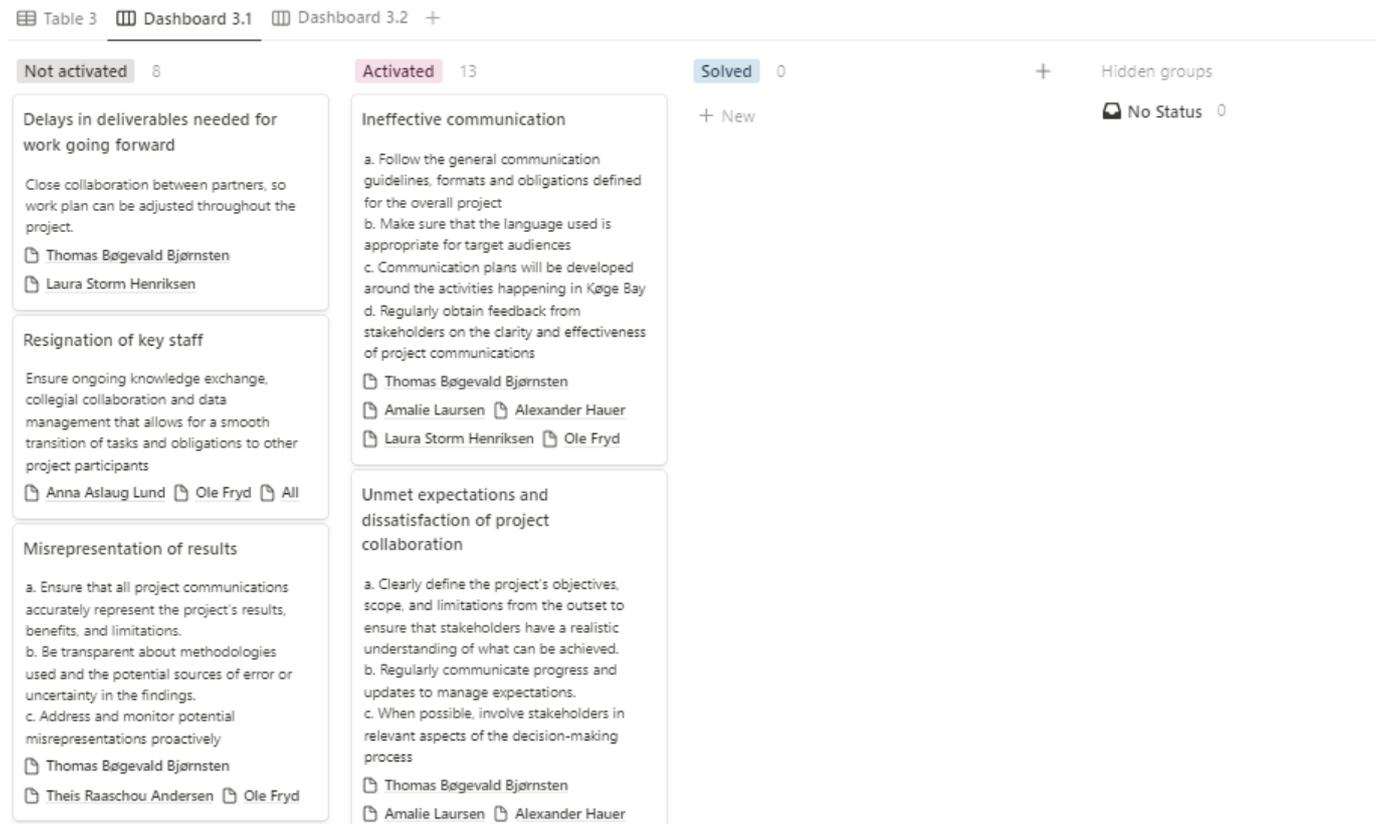


**Figure 43.** View of Dashboard 2.2. for Køge Bay Region at M5.

### 4.2.1.3. Risks identification and measures to minimize the risks

With regard to the assessment of risks associated with innovation actions, a total of 21 risks have been identified and evaluated.

The Kanban board analysis of the status of these identified risks shows that 13 of the 21 risks are activated and 8 are not activated, and there are no risks without associated status. These risks also have personnel assigned to monitor them. The view of this panel can be seen in the figure below.



**Figure 44.** View of Dashboard 3.1. for Køge Bay Region at M5.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.

Table 3 Dashboard 3.1 Dashboard 3.2 +

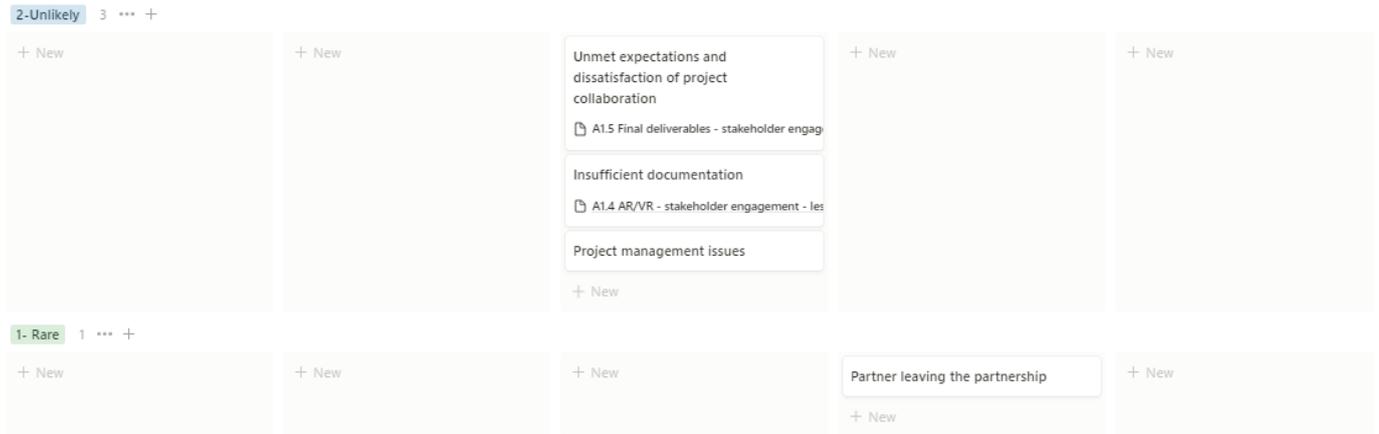
1- Insignificant 0    2- Minor 0    3- Significant 13    4- Mayor 7    5- Severe 1

5- Almost Certain 0 ... +

+ New	+ New	+ New	+ New	+ New
4- Likely 4 ... +	+ New	<p>Data integration and interoperability</p> <ul style="list-style-type: none"> <li>A1.3 AR/VR - creation of solutions</li> </ul> <p>Data privacy and security</p> <ul style="list-style-type: none"> <li>A1.3 AR/VR - creation of solutions</li> </ul> <p>Inaccurate identification of stakeholders</p> <ul style="list-style-type: none"> <li>A1.1 Identify the groups of stakeholders that</li> <li>B1.1 Stakeholder mapping of Køge Bay</li> <li>B1.2 Interviews with citizens, NGO's, indust</li> <li>B2.1 Stakeholder workshop regarding Stran</li> <li>B2.2 Multi-layered safety proposition</li> <li>B3.1 Health design interventions</li> </ul> <p>Delays in deliverables and difficulties in the fulfillment of the objectives.</p>	+ New	+ New

3- Moderate 13 ... +

+ New	+ New	<p>Delays in deliverables needed for work going forward</p> <ul style="list-style-type: none"> <li>B1.3 Raising awareness using XR along Stra</li> </ul> <p>Resignation of key staff</p> <ul style="list-style-type: none"> <li>C1.2 Strandparken - interviews</li> <li>C1.1 Strandparken - archival research</li> </ul> <p>Ineffective communication</p> <ul style="list-style-type: none"> <li>A1.6 Communication of the results in repor</li> <li>C1.3 Strandparken - report on the history o</li> </ul> <p>Inadequate onboarding, training, and support</p> <ul style="list-style-type: none"> <li>A1.5 Final deliverables - stakeholder engag</li> </ul> <p>Data quality</p> <ul style="list-style-type: none"> <li>A1.3 AR/VR - creation of solutions</li> </ul> <p>Unrealistic expectations</p> <ul style="list-style-type: none"> <li>A1.2 AR/VR applications - define deliverabl</li> </ul>	<p>Lack of stakeholder commitment</p> <ul style="list-style-type: none"> <li>A1.4 AR/VR - stakeholder engagement - les</li> <li>B1.1 Stakeholder mapping of Køge Bay</li> <li>B1.2 Interviews with citizens, NGO's, indust</li> <li>B2.1 Stakeholder workshop regarding Stran</li> <li>B2.2 Multi-layered safety proposition</li> <li>B2.3 Living Lab experiments</li> <li>B3.1 Health design interventions</li> <li>C1.2 Strandparken - interviews</li> </ul> <p>Hardware capacity/performance issues</p> <ul style="list-style-type: none"> <li>A1.3 AR/VR - creation of solutions</li> </ul> <p>Scope creep</p> <ul style="list-style-type: none"> <li>A1.2 AR/VR applications - define deliverabl</li> </ul> <p>Resistance to collaboration</p> <ul style="list-style-type: none"> <li>A1.1 Identify the groups of stakeholders th</li> <li>B1.1 Stakeholder mapping of Køge Bay</li> <li>B1.2 Interviews with citizens, NGO's, indust</li> <li>B2.1 Stakeholder workshop regarding Stran</li> <li>B2.2 Multi-layered safety proposition</li> <li>B3.1 Health design interventions</li> </ul> <p>Lack of coherence and coordination between the IPs</p> <p>Difficulty in reaching and involving stakeholders</p>	<p>Misrepresentation of results</p> <ul style="list-style-type: none"> <li>A1.6 Communication of the results in repor</li> <li>C1.3 Strandparken - report on the history o</li> <li>C2.2 The potential of barrier islands in Den</li> <li>C3.3 Scalability of barrier islands - EU level</li> </ul>
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**Figure 45.** View of Dashboard 3.2. for Køge Bay Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 1 risk has been identified as **Very high**, 10 as **High** and 10 as **Medium**. Intensive monitoring of the risks identified as Very High, High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					
Likely			●●●●		
Moderate			●●●●●●	●●●●●●	●
Unlikely			●●●		
Rare				●	

**Table 19.** Risk assessment for Køge Bay Region

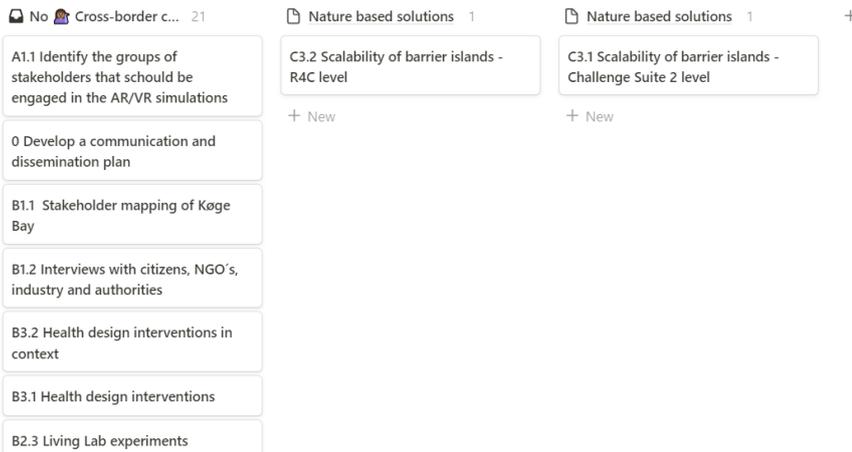
#### 4.2.1.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 3 actions for cooperation and transfer of good practices have been identified, covering 2 of the 23 proposed innovation actions. Specifically, the actions involved in the transfer are:

- C3.1 Scalability of barrier islands - Challenge Suite 2 level
- C3.2 Scalability of barrier islands - R4C level

There is one transfer action to which no innovation actions have been associated. It is recommended that this transfer action be framed within the framework of one or more innovative actions.

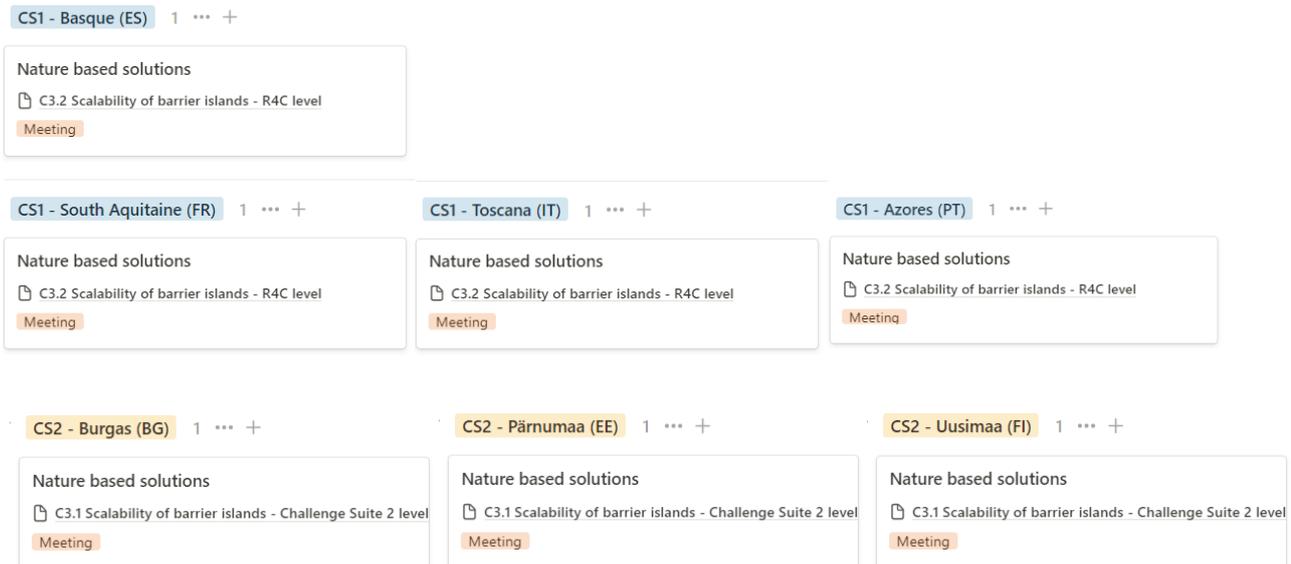
The distribution of actions is shown in the figure below.

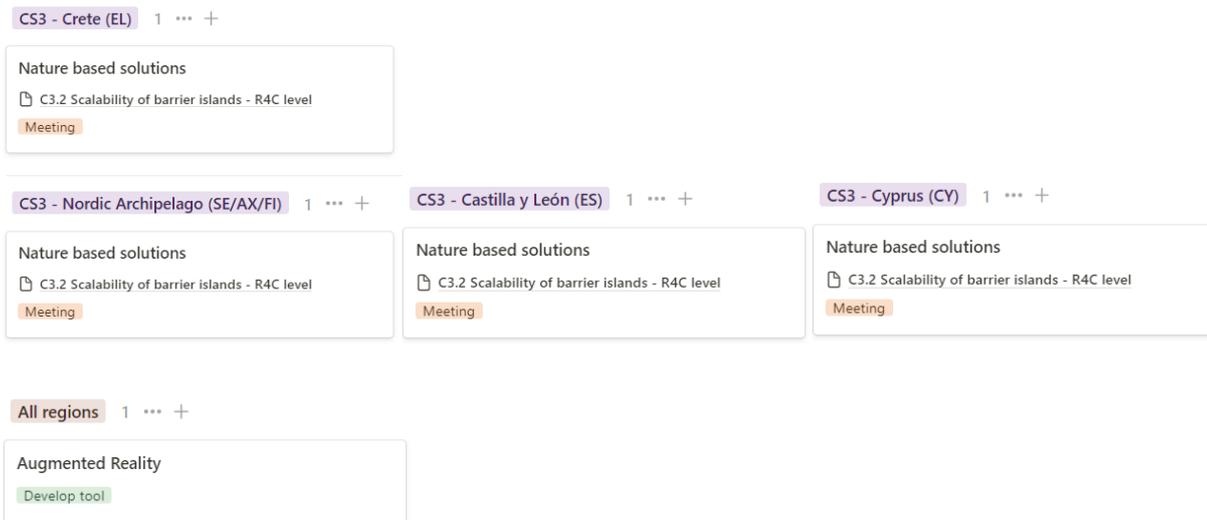


**Figure 46.** View of Dashboard 2.3. for Køge Bay Region at M5.

All proposed transfer and cooperation actions have a proposed date. 2 actions appear as "not started" on the Kanban board, and one as "In Progress" (Dashboard 4.2).

All of them have also identified the Region(s) with which to collaborate, as shown in the figure below. The result of this view shows the collaborative actions identified by region, and sorted by CS.





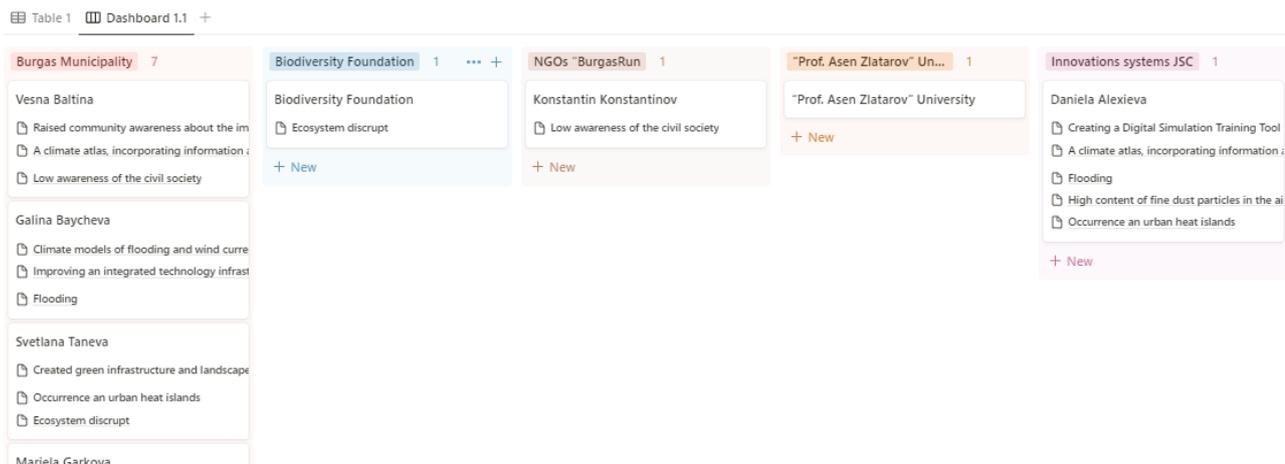
**Figure 47.** View of Dashboard 4.3. for Køge Bay Region at M5.

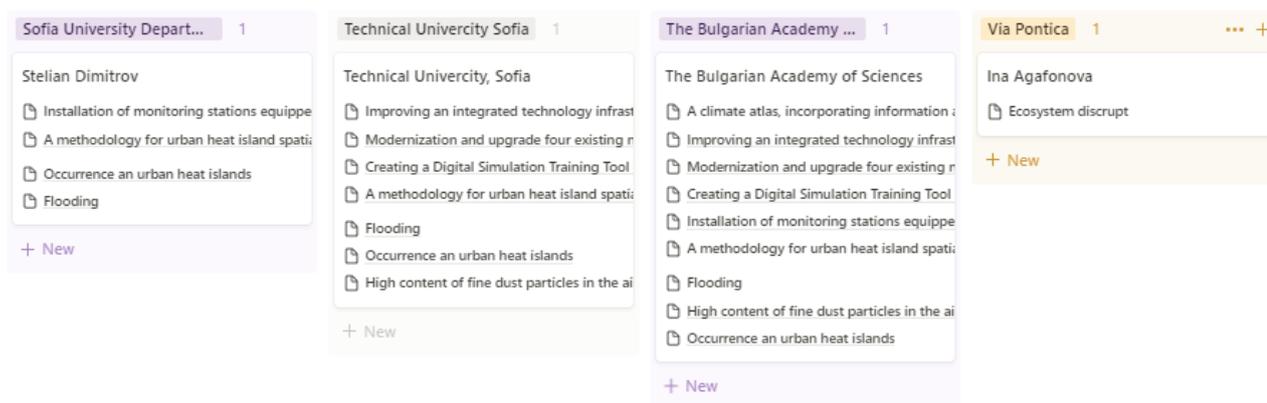
## 4.2.2. Roadmap for Burgas

### 4.2.2.1. Partners involved

The partners involved in this region are 5. These partners are Burgas Municipality, Innovations systems JSC, NGOs “BurgasRun”, “Prof. Asen Zlatarov” University, Biodiversity Foundation. The people involved in each of them have been identified and tasks have been assigned to each of them, with a few exceptions. There are no people without an assigned entity and no participation of entities outside the project has been declared.

The following figure shows the final result of the Dashboard 1.1 view at M5.





**Figure 48.** View of Dashboard 1.1. for Burgas Region at M5.

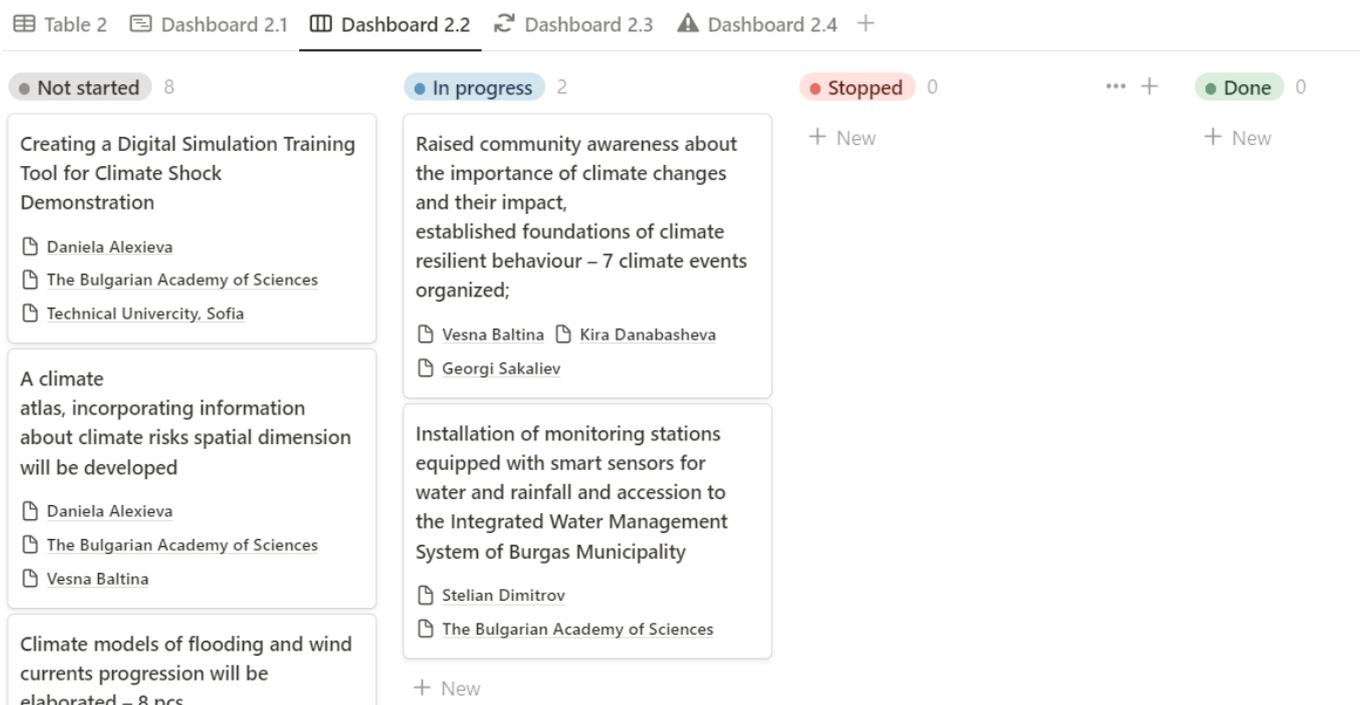
#### 4.2.2.2. Planned innovation actions

Regarding the Planned Innovation Actions, 10 innovation actions have been described, of which 2 are already in progress (\*):

1. (\*) *Installation of monitoring stations equipped with smart sensors for water and rainfall and accession to the Integrated Water Management System of Burgas Municipality*
2. *Modernization and upgrade of four existing monitoring stations with hardware for precipitation monitoring*
3. *Improving an integrated technology infrastructure for early warning and information on population for impending flood risk in flood-prone areas*
4. *Created green infrastructure and landscaped space*
5. *A methodology for urban heat island spatial modelling will be developed*
6. *Climate models of flooding and wind currents progression will be elaborated – 8 pcs*
7. *A climate atlas, incorporating information about climate risks spatial dimension will be developed*
8. *Creating a Digital Simulation Training Tool for Climate Shock Demonstration*
9. (\*) *Raised community awareness about the importance of climate changes and their impact, established foundations of climate resilient behaviour – 7 climate events organized;*
10. *Enhanced capacity of local administration to take decision and implementation of climate adaptation measures*

Only one of the actions has been scheduled. It is necessary to assign an estimated start and end date to all actions in order to be able to carry out the relevant analysis and planning. It is therefore recommended to do this exercise. In addition, according to the Kanban board, 2 actions are "In Progress", so they must have associated start dates. The rest of the actions are marked as "Not Started".

These four actions are listed on the Kanban board as in progress, as shown in the figure below. In addition, staff has been correctly assigned to each of them, including the unstarted actions.

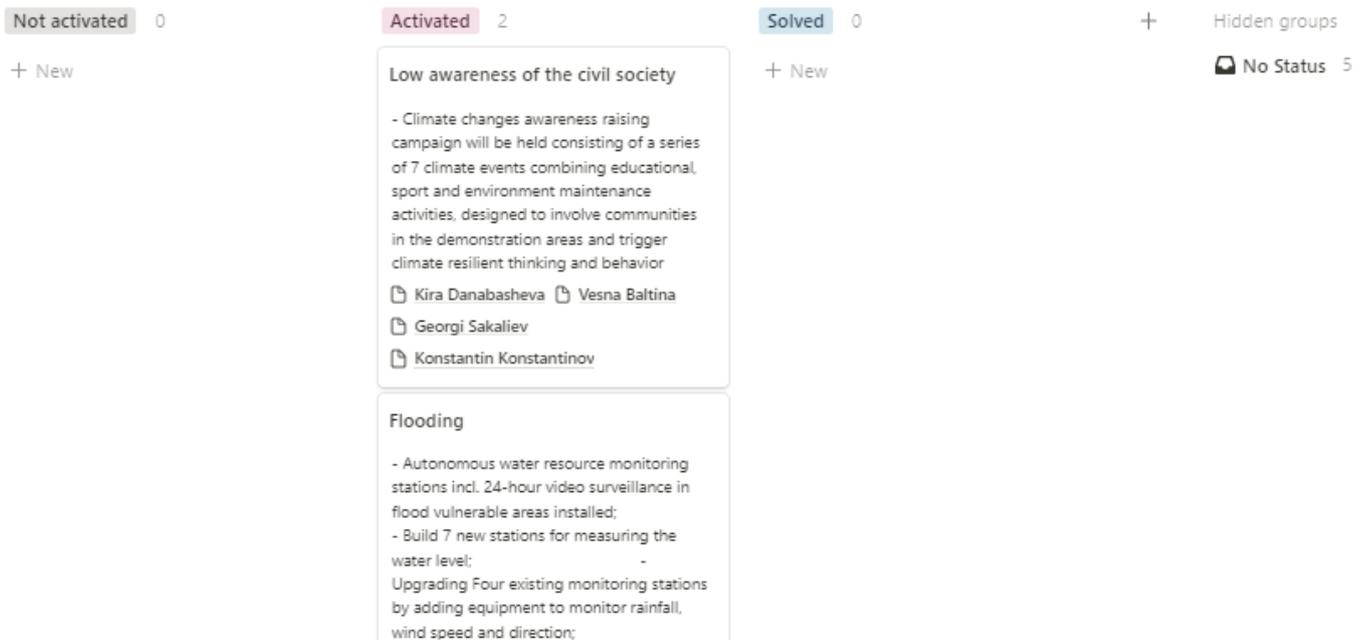


**Figure 49.** View of Dashboard 2.2. for Burgas Region at M5.

#### 4.2.2.3. Risks identification and measures to minimize the risks

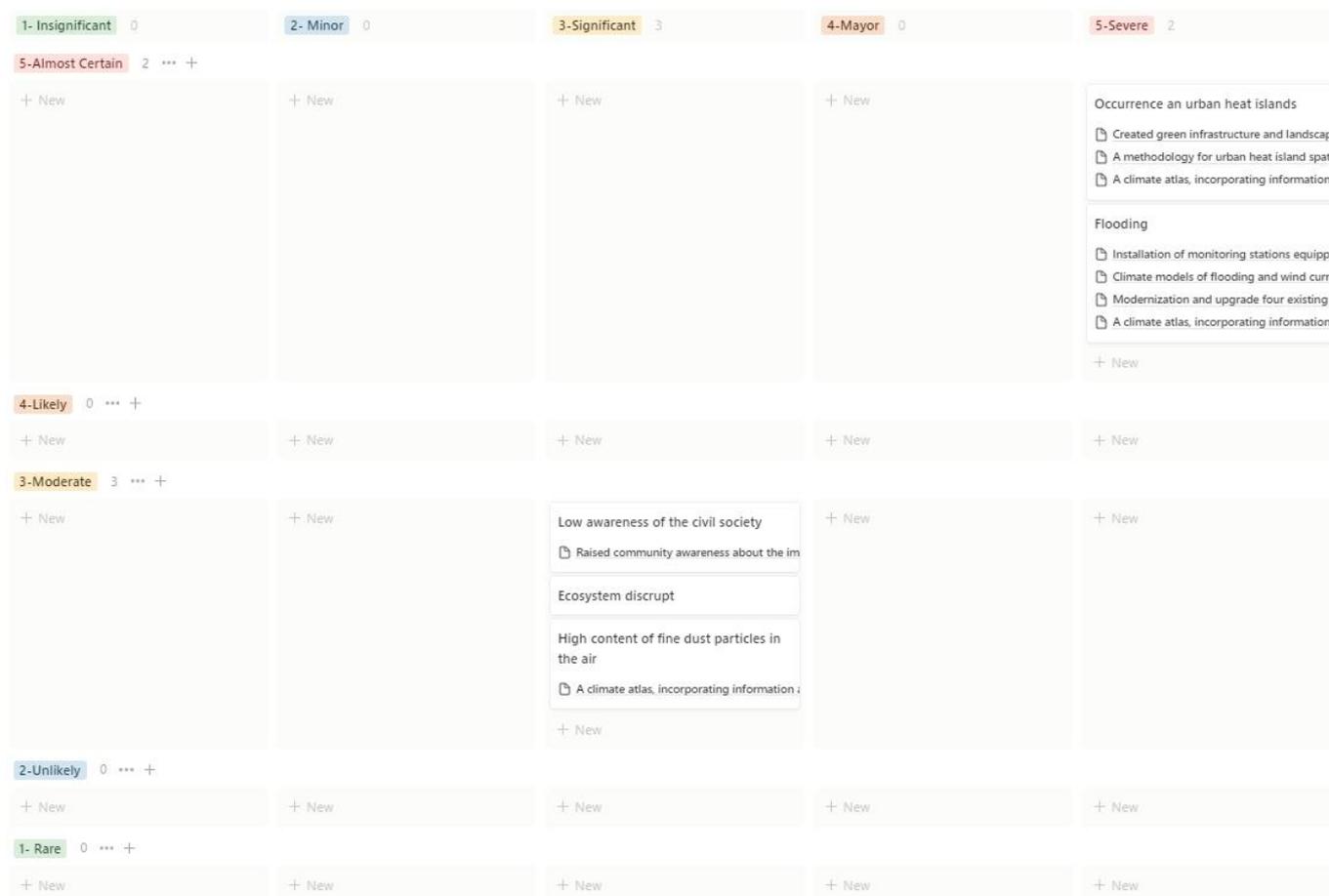
With regard to the assessment of risks associated with innovation actions, a total of 5 risks have been identified and evaluated. Only 3 actions do not have an associated risk. It is recommended that the risk assessment be carried out prior to the start date of the actions. Two rows in the risk table only have content in the Measures column. It is recommended to fit these measures into the corresponding risk. These two rows have not been considered for this analysis.

The Kanban board analysis of the status of these identified risks shows that 2 of the 5 risks are activated. The rest do not have an assigned status, so it is recommended that the status of the “No Status” risks be changed to "Not activated" so that they can be correctly displayed in the analysis. These risks also have personnel assigned to monitor them. The view of this panel can be seen in the figure below.



**Figure 50.** View of Dashboard 3.1. for Burgas Region at M5.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.



**Figure 51.** View of Dashboard 3.2. for Burgas Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 2 risks have been identified as **Severe** and 3 as **Medium**. Immediate activation of corrective measures and intensive risk monitoring is recommended (at the start of the associated actions) for those classified as Severe and continuous monitoring for those classified as Medium. This is why the timing of all actions is a priority. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					●●
Likely					
Moderate			●●●		
Unlikely					
Rare					

**Table 20.** Risk assessment for Burgas Region

### 4.2.2.4. Cross-border cooperation actions and transfer of best practices

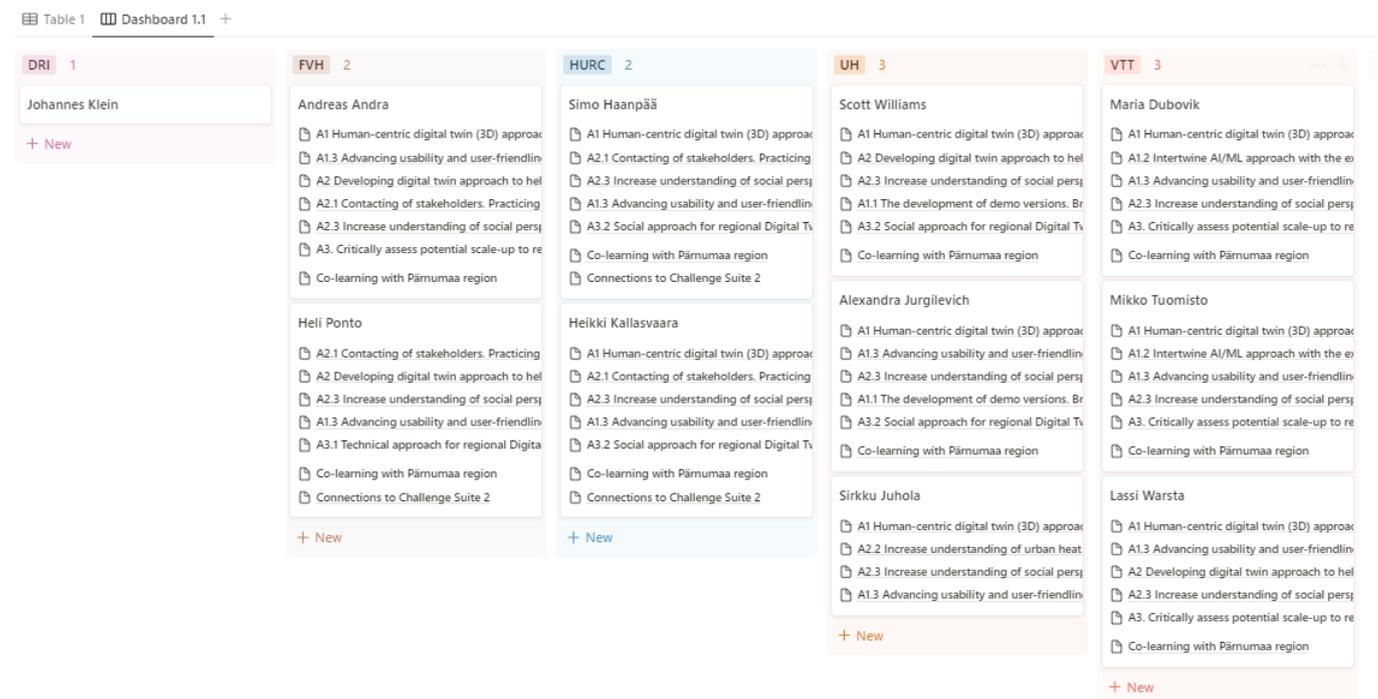
So far (M5) no transfer and cooperation actions have been identified in the Burgas Region. No transfer opportunities have been identified in Section 2.3 either. It is recommended that in the coming months priority be given to the definition of a series of actions for the transfer of good practices and cooperation between regions.

## 4.2.3. Roadmap for Uusimaa

### 4.2.3.1. Partners involved

The partners involved in this region are five, all direct partners of the project. These partners are: FVH, HURC, VTT, DRI. The people involved in each of them have been identified and tasks have been assigned to each of them, with a few exceptions. There are no people without an assigned entity and no participation of entities outside the project has been declared.

The following figure shows the final result of the Dashboard 1.1 view at M5.



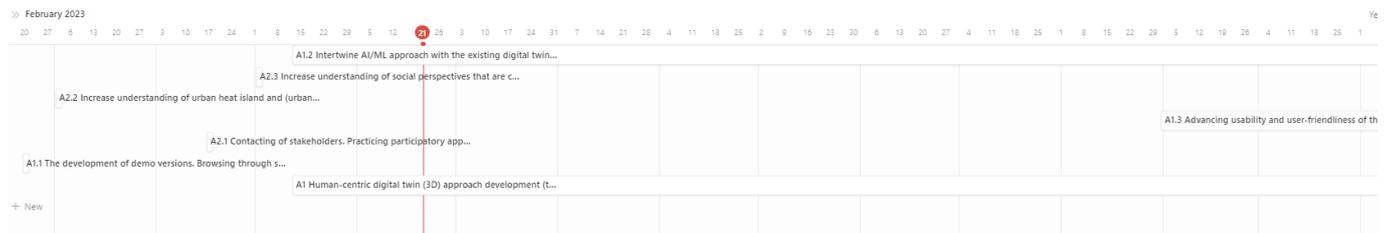
**Figure 52.** View of Dashboard 1.1. for Uusimaa Region at M5.

### 4.2.3.2. Planned innovation actions

Regarding the Planned Innovation Actions, 3 innovation actions have been described, with a total of 9 tasks. All tasks are “In progress”, except for 3 that are “Not Started” (\*):

- (\*) A1 Human-centric digital twin (3D) approach development (technical dev.)
  - o (\*) A1.1 The development of demo versions. Browsing through suitable data sources. Using Copernicus Services when possible.
  - o (\*) A1.2 Intertwine AI/ML approach with the existing digital twin development
  - o A1.3 Advancing usability and user-friendliness of the technical approach.
- (\*) A2 Developing digital twin approach to help urban and regional planners to advance to adapt on climate change in socially justice ways
  - o (\*) A2.1 Contacting of stakeholders. Practicing participatory approach in (socio-)technological development. Discussing possible adaptation methods.
  - o (\*) A2.2 Increase understanding of urban heat island and (urban) flooding in the region
  - o (\*) A2.3 Increase understanding of social perspectives that are connected to urban heat islands and flooding. Suggest possible adaptation methods via digital twin approach and discussions. Connections to D5.3 and D5.4 (Innovation stories & synthesis)
- (\*) A3. Critically assess potential scale-up to regional level. Creating a regional level approach to digital twin.
  - o (\*) A3.1 Technical approach for regional Digital Twin
  - o A3.2 Social approach for regional Digital Twin
  - o A3.3 Upscaling of the composed Digital Twin to regional level

The figure below shows the timeline resulting from the first action planning at M5, for the next year. The date marked in red corresponds to 21/06/2023 and the graph marks the passage of the date approximately every 7 days. This view starts in February 2023 and finalises in February 2024.



**Figure 53.** View of Dashboard 2.1. for Uusimaa Region at M5.

All actions are "In Progress", although actions 1 and 3 have tasks "Not started" on the Kanban board. In addition, staff has been correctly assigned to each of them, including the unstarted actions.

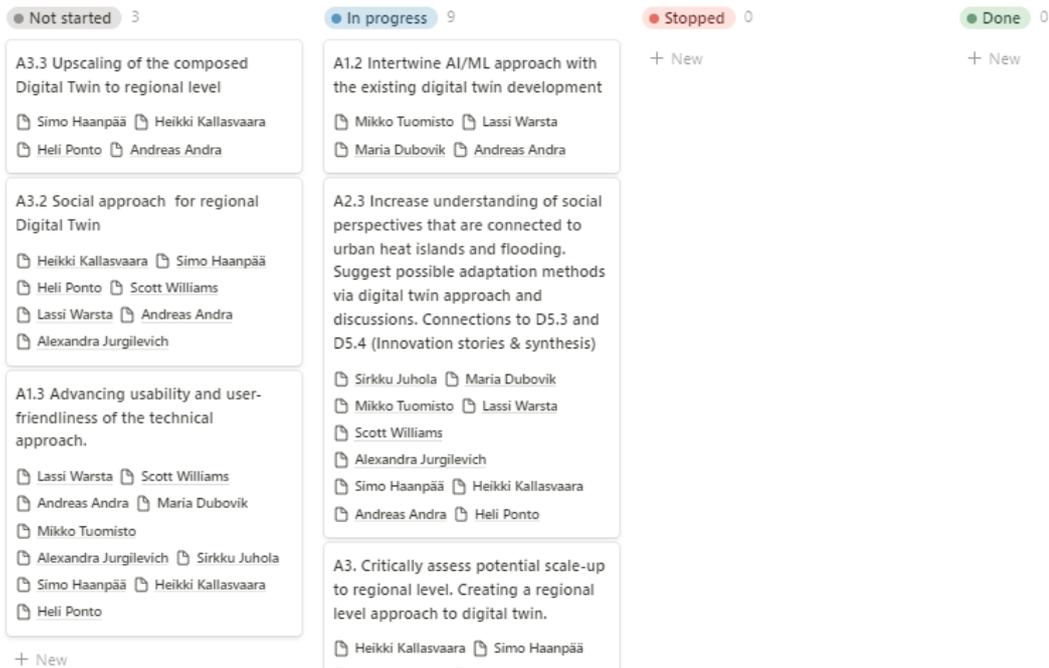


Figure 54. View of Dashboard 2.2. for Uusimaa Region at M5.

### 4.2.3.3. Risks identification and measures to minimize the risks

With regard to the assessment of risks associated with innovation actions, a total of 9 risks have been identified and evaluated. All the actions have an associated risk. However, the status of the risks has not been established, although some of the associated actions are already underway. It is therefore recommended to set the status analysis to "Activated" for actions in progress, and "Not activated" for actions not yet initiated, in order to correctly perform the analysis of responsibilities and implementation of measures if necessary.

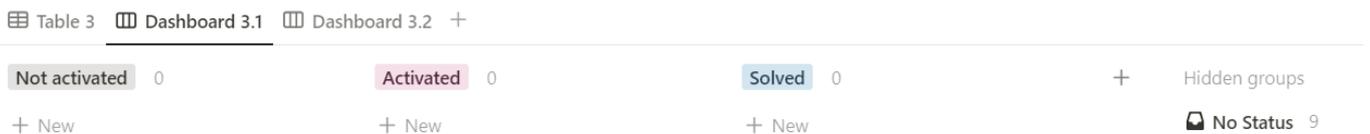
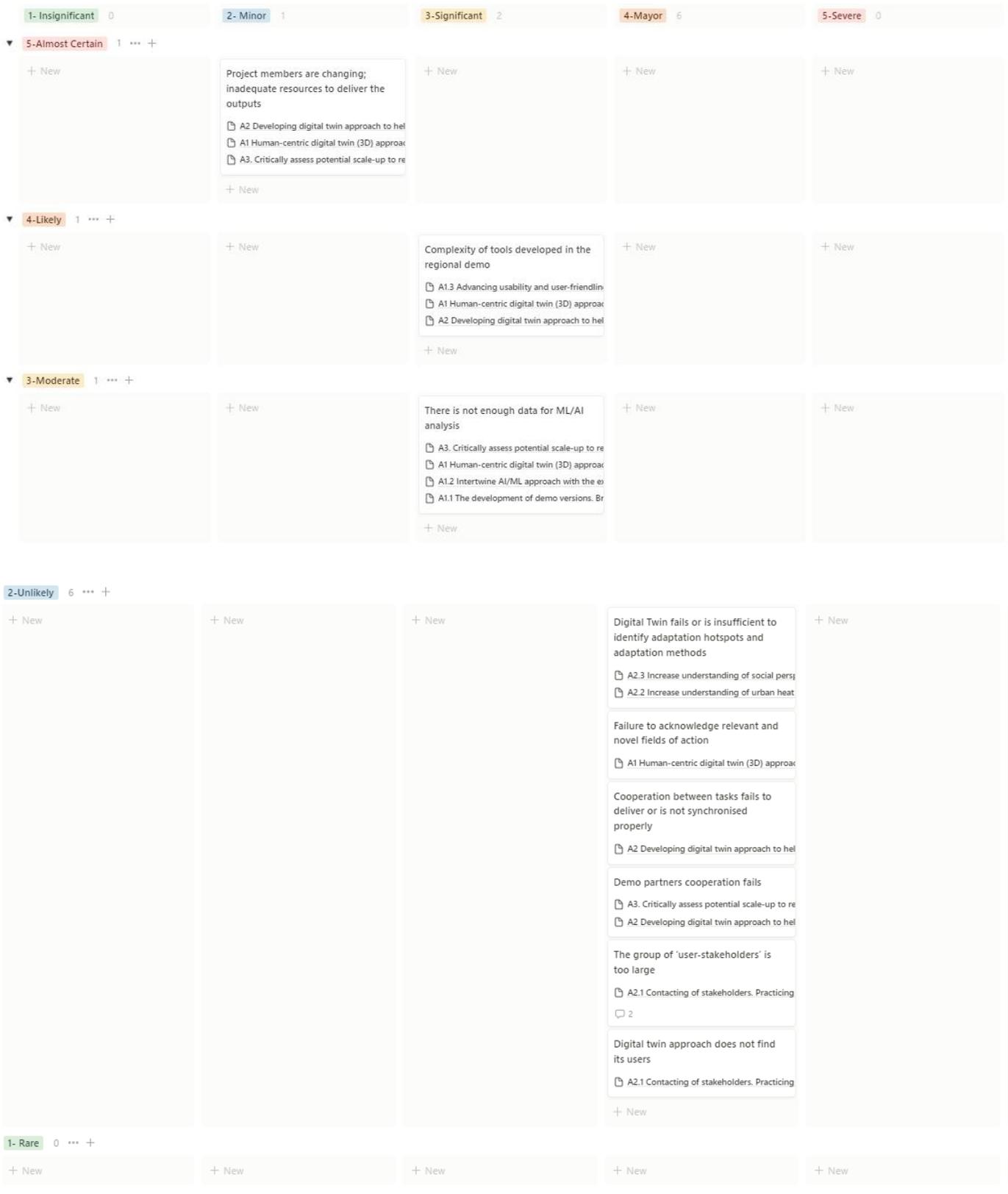


Figure 55. View of Dashboard 3.1. for Uusimaa Region at M5.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.

## D5.1. VISION TOWARDS IMPLEMENTATION



**Figure 56.** View of Dashboard 3.2. for Uusimaa Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 2 risks have been identified as **High** and 7 as **Medium**. Intensive monitoring of the risks identified as High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain		●			
Likely			●		
Moderate			●		
Unlikely				●●●●●	
Rare					

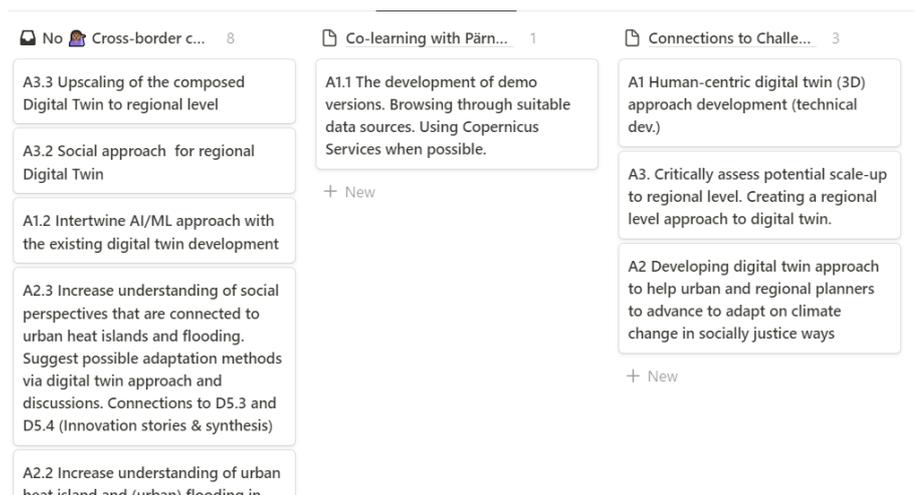
**Table 21.** Risk assessment for Uusimaa Region

### 4.2.3.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 3 actions for cooperation and transfer of good practices have been identified, covering the 3 proposed innovation actions. Specifically, the actions involved in the transfer are:

- A1 Human-centric digital twin (3D) approach development (technical dev.)
  - o A1.1 The development of demo versions. Browsing through suitable data sources. Using Copernicus Services when possible.
- A2 Developing digital twin approach to help urban and regional planners to advance to adapt on climate change in socially justice ways
- A3. Critically assess potential scale-up to regional level. Creating a regional level approach to digital twin.

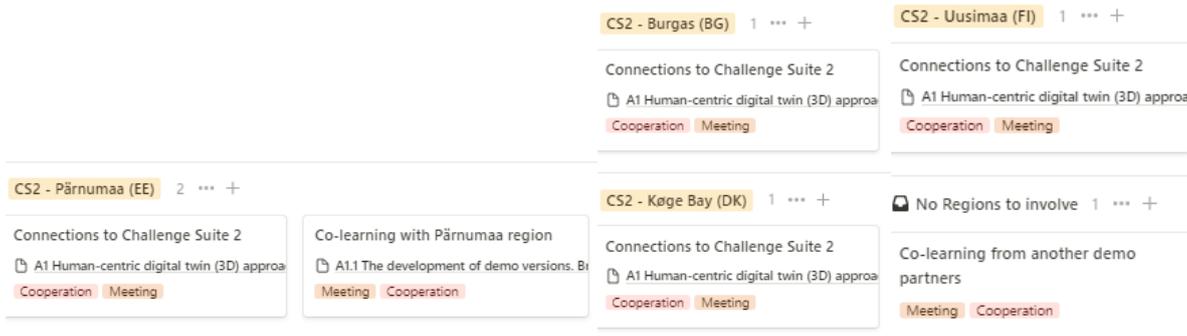
The distribution of actions is shown in the figure below.



**Figure 57.** View of Dashboard 2.3. for Uusimaa Region at M5.

1 from the 3 proposed transfer and cooperation actions have a proposed date. Consequently, 2 actions appear as "not started" on the Kanban board and 1 as "In progress" (Dashboard 4.2).

Most of them have also identified the Region(s) with which to collaborate, as shown in the figure below. The transfer action without an assigned region, however, seems to be a cross-cutting action with all regions. It is recommended to create a label (e.g. "All project regions" to show up correctly in the analysis (Dashboard 4.3). The result of this view shows the collaborative actions identified by region, and sorted by CS.



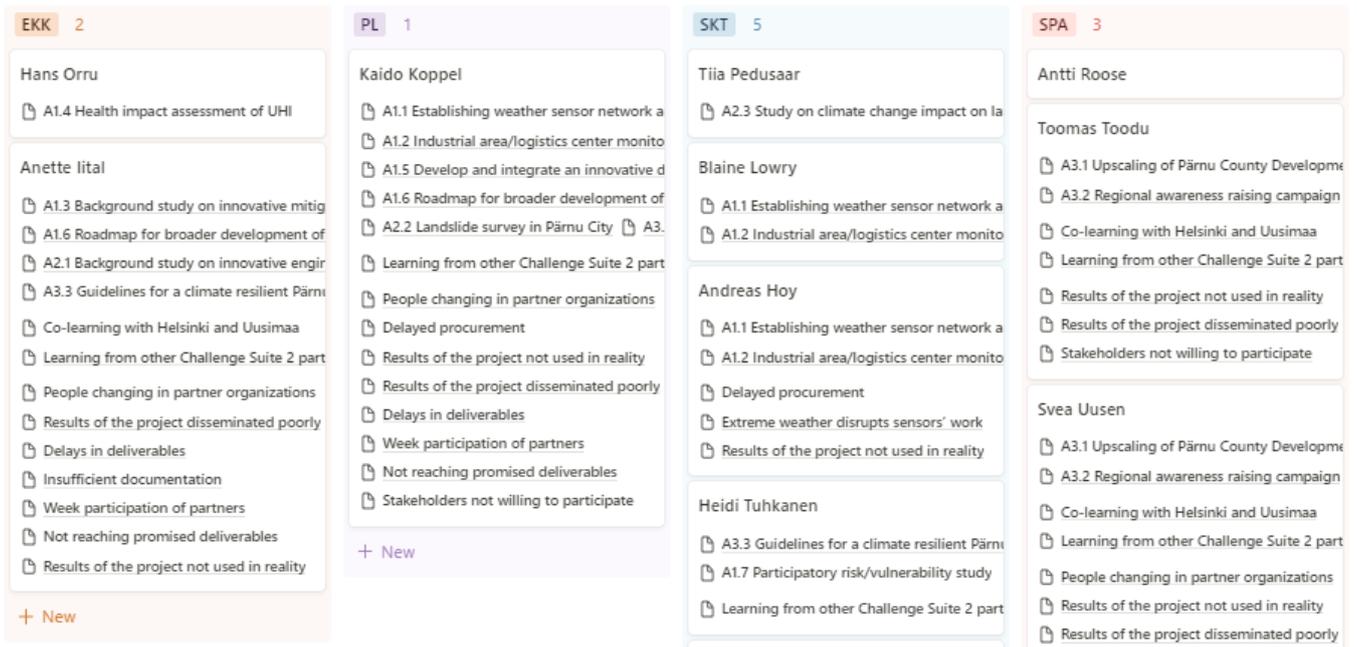
**Figure 58.** View of Dashboard 4.3. for Uusimaa Region at M5.

## 4.2.4. Roadmap for Pärnumaa

### 4.2.4.1. Partners involved

The partners involved in this region are 4, all direct partners of the project. These partners are: EKK, SKT, PL, SPA. The people involved in each of them have been identified and tasks have been assigned to each of them, with a few exceptions. There are no people without an assigned entity and no participation of entities outside the project has been declared.

The following figure shows the final result of the Dashboard 1.1 view at M5.



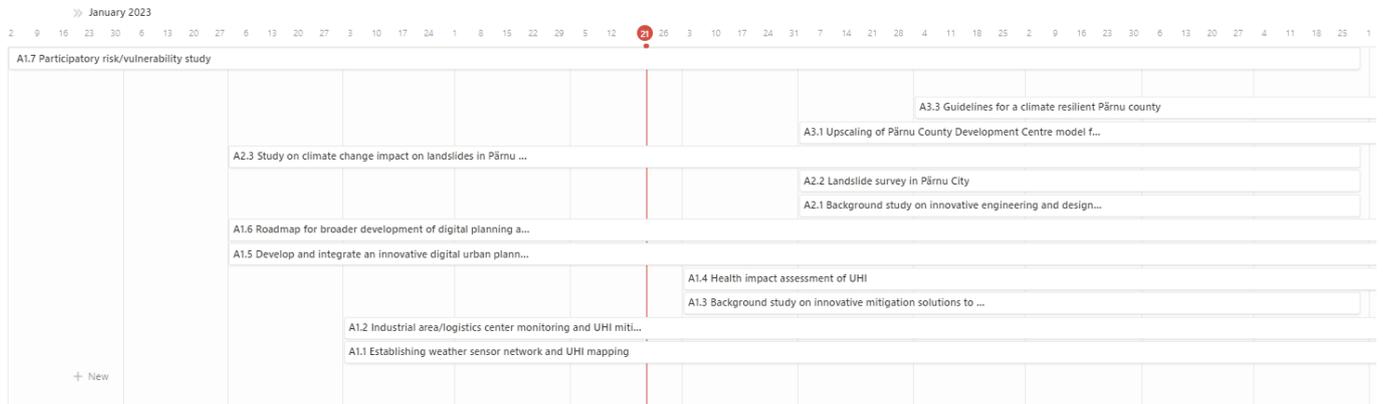
**Figure 59.** View of Dashboard 1.1. for Pärnumaa Region at M5.

#### 4.2.4.2. Planned innovation actions

Regarding the Planned Innovation Actions, 14 innovation actions have been described, grouped into 3 Innovation Packages, of which 2 are already in progress (\*):

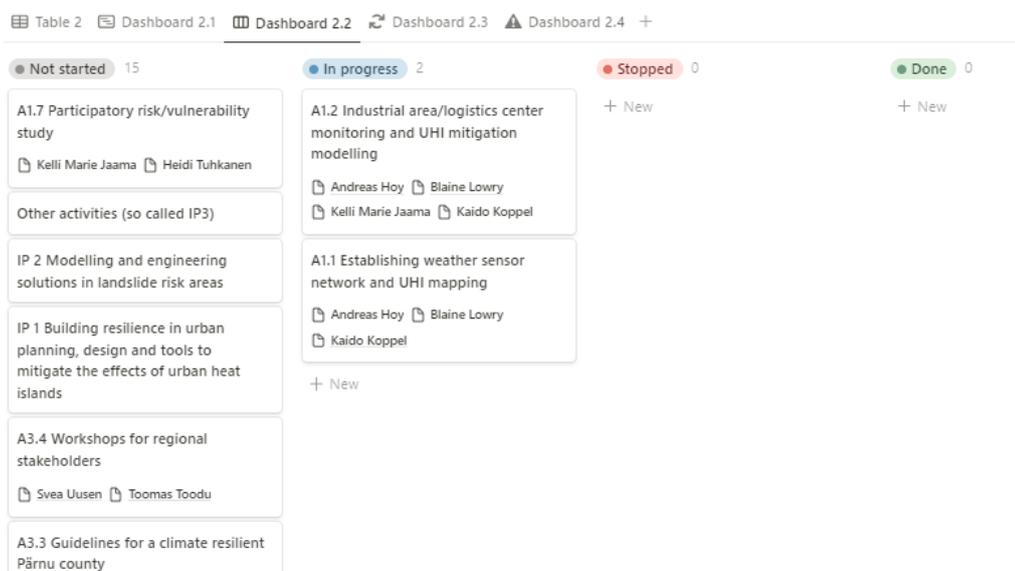
- *IP 1 Building resilience in urban planning, design and tools to mitigate the effects of urban heat islands*
  - o (\*) *A1.1 Establishing weather sensor network and UHI mapping*
  - o (\*) *A1.2 Industrial area/logistics center monitoring and UHI mitigation modelling*
  - o *A1.3 Background study on innovative mitigation solutions to prevent UHI*
  - o *A1.4 Health impact assessment of UHI*
  - o *A1.5 Develop and integrate an innovative digital urban planning application*
  - o *A1.6 Roadmap for broader development of digital planning application/digital twin*
  - o *A1.7 Participatory risk/vulnerability study*
- *IP 2 Modelling and engineering solutions in landslide risk areas*
  - o *A2.1 Background study on innovative engineering and design solutions*
  - o *A2.2 Landslide survey in Pärnu City*
  - o *A2.3 Study on climate change impact on landslides in Pärnu County*
- *Other activities (so called IP3)*
  - o *A3.1 Upscaling of Pärnu County Development Centre model for supporting resilience in other regions*
  - o *A3.2 Regional awareness raising campaign*
  - o *A3.3 Guidelines for a climate resilient Pärnu county*
  - o *A3.4 Workshops for regional stakeholders*

The figure below shows the timeline resulting from the first action planning at M5, for the next year. The date marked in red corresponds to 21/06/2023 and the graph marks the passage of the date approximately every 7 days. This view starts in January 2023 and finalises in January 2024.



**Figure 60.** View of Dashboard 2.1. for Pärnumaa Region at M5.

There are 2 actions are listed on the Kanban board as in progress, as shown in the figure below. It is recommended to consider changing the status of other actions that appear on the timeline as currently in progress to "In progress". On the other hand, some actions have also been detected without assigned staff. It is recommended that responsible personnel be assigned to all actions, who are responsible for monitoring their correct implementation.



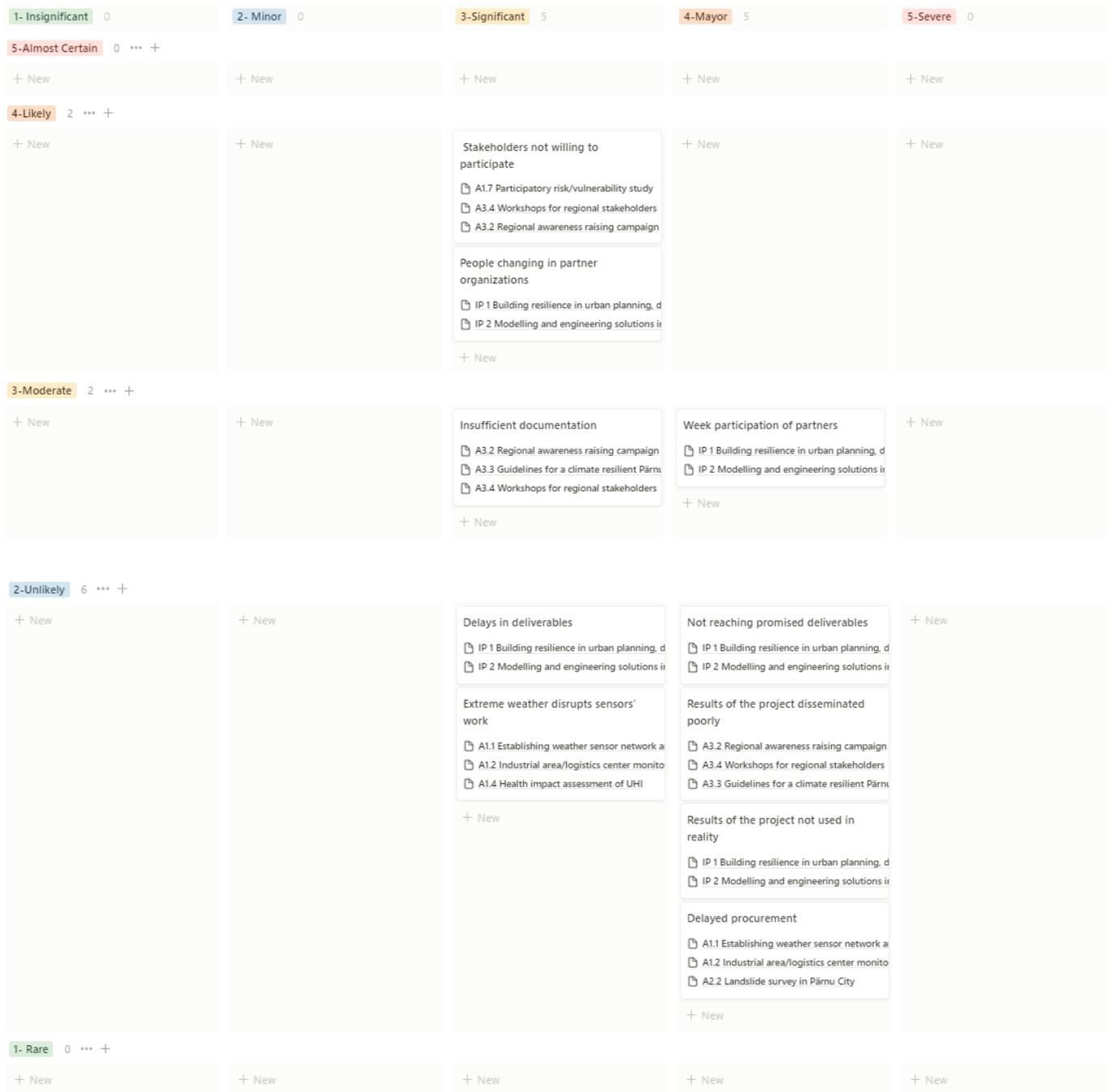
**Figure 61.** View of Dashboard 2.2. for Pärnumaa Region at M5.

#### 4.2.4.3. Risks identification and measures to minimize the risks

With regard to the assessment of risks associated with innovation actions, a total of 11 risks have been identified and evaluated. 6 actions do not have an associated risk, so it is recommended that the risk assessment be carried out prior to the start date of these actions.

It is recommended to use the Kanban in Dashboard 3.1 to assign a status to risks, and in particular to mark as "Active" those risks associated with tasks that have already started. All the risks have personnel assigned to monitor them.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.



**Figure 62.** View of Dashboard 3.2. for Pärnumaa Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 3 risks have been identified as **High**, and 7 as **Medium**. Intensive monitoring of the risks identified as High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					
Likely			● ●	●	
Moderate			●	●	
Unlikely			● ●	● ● ● ●	
Rare					

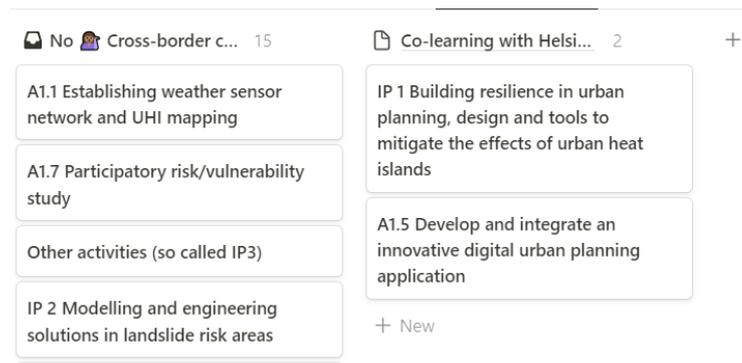
**Table 22.** Risk assessment for Pärnumaa Region

#### 4.2.4.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 2 actions for cooperation and transfer of good practices have been identified, covering 1 IP and 1 IA. Specifically, the actions involved in the transfer are:

- *IP 1 Building resilience in urban planning, design and tools to mitigate the effects of urban heat islands*
  - o *A1.5 Develop and integrate an innovative digital urban planning application*

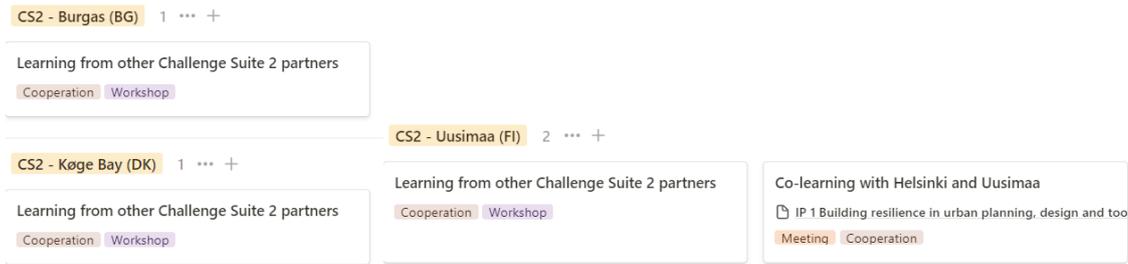
The distribution of actions is shown in the figure below.



**Figure 63.** View of Dashboard 2.3. for Pärnumaa Region at M5.

1 of the 2 proposed transfer and cooperation actions have a proposed date. Consequently, this action appears as "In progress" on the Kanban board (Dashboard 4.2).

The regions in which cooperation and transfer actions are to be carried out have also been identified. They are shown. The result of this view shows the collaborative actions identified by region, and sorted by CS.



**Figure 64.** View of Dashboard 4.3. for Pärnumaa Region at M5.

It is recommended to seek more collaborative actions with other regions outside CS2.

## 4.3. Challenge Suite 3. Focus on More Systemic

### 4.3.1. Roadmap for Sitia

#### 4.3.1.1. Partners involved

The partners involved in this region are 2, all direct partners of the project. These partners are: SIT and NCSR. The people involved in each of them have been identified and tasks have been assigned to each of them, with a few exceptions. There are no people without an assigned entity and no participation of entities outside the project has been declared.

The following figure shows the final result of the Dashboard 1.1 view at M5.

Table 1 Dashboard 1.1 +

NCSRDR 8	SIT 6
<p><b>Yiota Dimitropoulou</b></p> <ul style="list-style-type: none"> <li>▢ A1. Educational Activities in Geopark</li> <li>▢ A1.1 Course material production</li> <li>▢ A1.4 Educational courses ▢ A2.2 Impleme</li> <li>▢ C2. Training and exercises for local disaster</li> <li>▢ C2.1 Design of exercises and production of</li> <li>▢ C2.2 Conduction of exercises</li> <li>▢ D2. Citizen climate awareness app</li> </ul>	<p><b>External expert (TBD)</b></p> <ul style="list-style-type: none"> <li>▢ B1 Supporting local female entrepreneurship</li> <li>▢ B3.1 Preliminary study on oil factory energy</li> <li>▢ B3.2 Oil factory conversion</li> <li>▢ Transfer of data across SIT communities</li> </ul>
<p><b>Popi Konte</b></p> <ul style="list-style-type: none"> <li>▢ C1. Water scarcity risk assessment</li> <li>▢ D3. Municipal GIS with climate information</li> </ul>	<p><b>Vagelis Perrakis</b></p> <ul style="list-style-type: none"> <li>▢ A. Sitia Geopark</li> <li>▢ A1. Educational Activities in Geopark</li> <li>▢ A2. Touristic Activities with zero carbon foc</li> <li>▢ A2.1 Design of activities</li> <li>▢ A1.4 Educational courses</li> <li>▢ A3. Geopark promotional activities</li> <li>▢ A4. Climate Impacts on endemic plants</li> <li>▢ A4.2 Local studies</li> <li>▢ Links between SIT and TRO geoparks</li> <li>▢ Outdoor activities disrupted by extreme ev</li> <li>▢ Citizen participation</li> <li>▢ Weak commitment of participants</li> </ul>
<p><b>Petri Betsi</b></p> <ul style="list-style-type: none"> <li>▢ A. Sitia Geopark</li> <li>▢ B. Maintain local traditions and way of life</li> <li>▢ B2 IPM for biological olive oil production</li> <li>▢ B2.2 IPM field studies</li> </ul>	<p><b>Eleftheria Koumentaki</b></p> <ul style="list-style-type: none"> <li>▢ A. Sitia Geopark</li> <li>▢ A1.3 Preparation and safety provisions for f</li> <li>▢ A2. Touristic Activities with zero carbon foc</li> </ul>
<p><b>Nikos Gounaris</b></p> <ul style="list-style-type: none"> <li>▢ C. Water scarcity and disaster risk reduction</li> <li>▢ C1. Water scarcity risk assessment</li> <li>▢ C2.1 Design of exercises and production of</li> <li>▢ C2. Training and exercises for local disaster</li> </ul>	

**Figure 65.** View of Dashboard 1.1. for Sitia Region at M5.

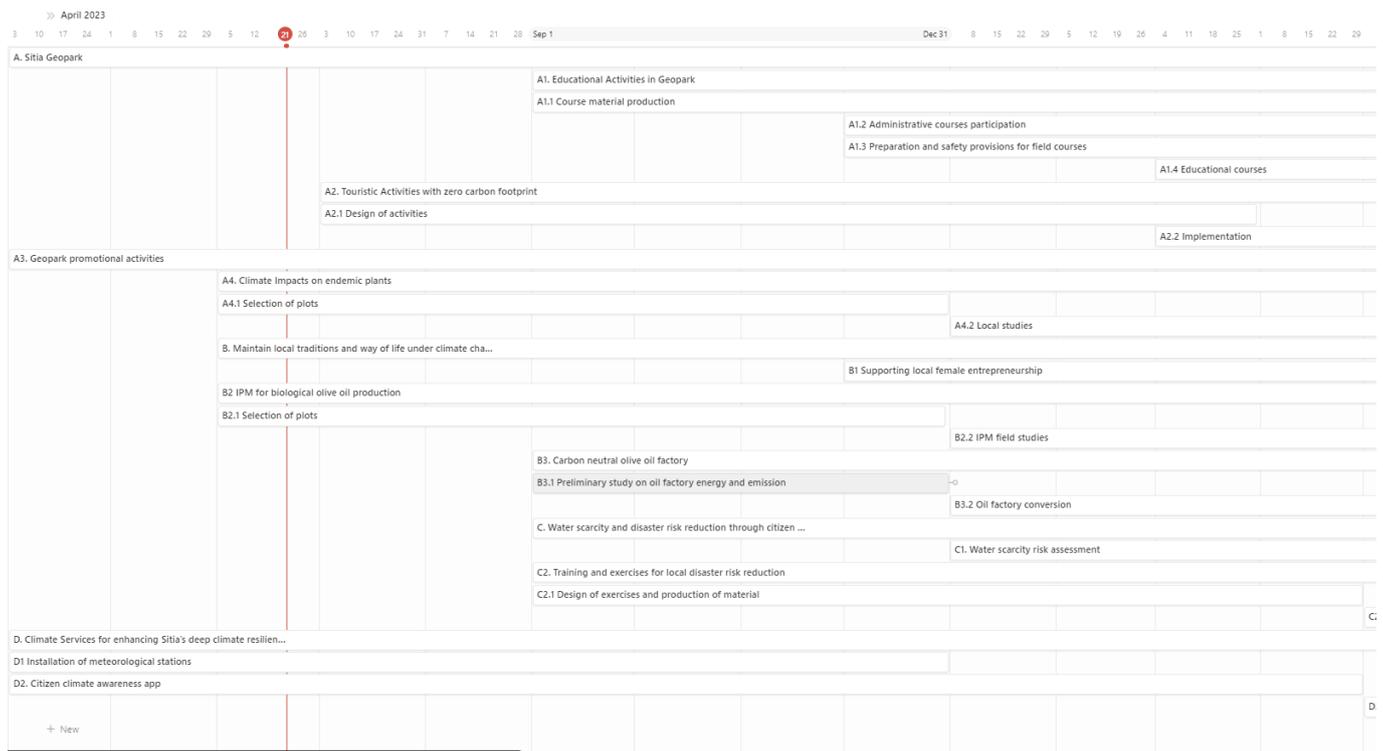
### 4.3.1.2. Planned innovation actions

Regarding the Planned Innovation Actions, 30 actions have been described, of which 5 are already in progress (\*):

- (\*) *A. Sitia Geopark*
  - *A1. Educational Activities in Geopark*
    - *A1.1 Course material production*
    - *A1.2 Administrative courses participation*
    - *A1.3 Preparation and safety provisions for field courses*
    - *A1.4 Educational courses*
  - *A2. Touristic Activities with zero carbon footprint*
    - *A2.1 Design of activities*
    - *A2.2 Implementation*
  - (\*) *A3. Geopark promotional activities*
  - *A4. Climate Impacts on endemic plants*
    - *A4.1 Selection of plots*
    - *A4.2 Local studies*
- *B. Maintain local traditions and way of life under climate change*
  - *B1 Supporting local female entrepreneurship*
  - *B2 IPM for biological olive oil production*

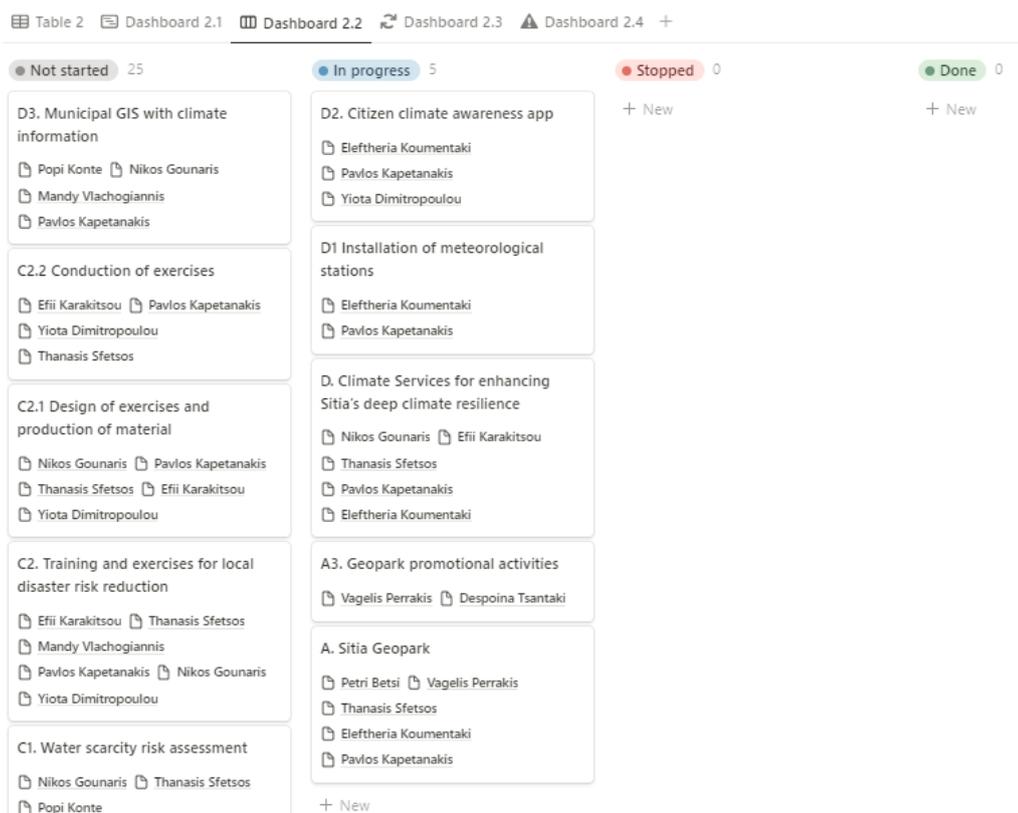
- B2.1 Selection of plots
    - B2.2 IPM field studies
  - B3. Carbon neutral olive oil factory
    - B3.1 Preliminary study on oil factory energy and emission
    - B3.2 Oil factory conversion
- C. Water scarcity and disaster risk reduction through citizen participation
  - C1. Water scarcity risk assessment
  - C2. Training and exercises for local disaster risk reduction
    - C2.1 Design of exercises and production of material
    - C2.2 Conduction of exercises
- (\*) D. Climate Services for enhancing Sitia's deep climate resilience
  - (\*) D1 Installation of meteorological stations
  - (\*) D2. Citizen climate awareness app
  - D3. Municipal GIS with climate information

The figure below shows the timeline resulting from the first action planning at M5, for the next year. The date marked in red corresponds to 21/06/2023 and the graph marks the passage of the date approximately every 7 days. This view starts in April 2023 and finalises in April 2024.



**Figure 66.** View of Dashboard 2.1. for Sitia Region at M5.

These 5 actions are listed on the Kanban board as in progress, as shown in the figure below. In addition, staff has been correctly assigned to each of them, including the unstarted actions.

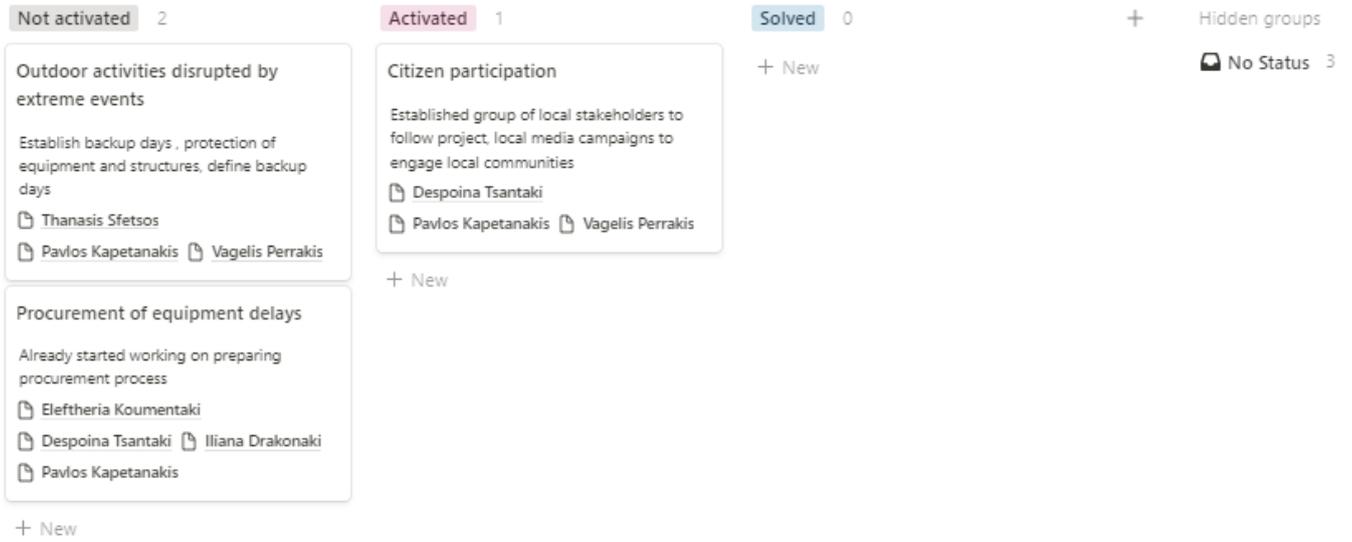


**Figure 67.** View of Dashboard 2.2. for Sitia Region at M5.

### 4.3.1.3. Risks identification and measures to minimize the risks

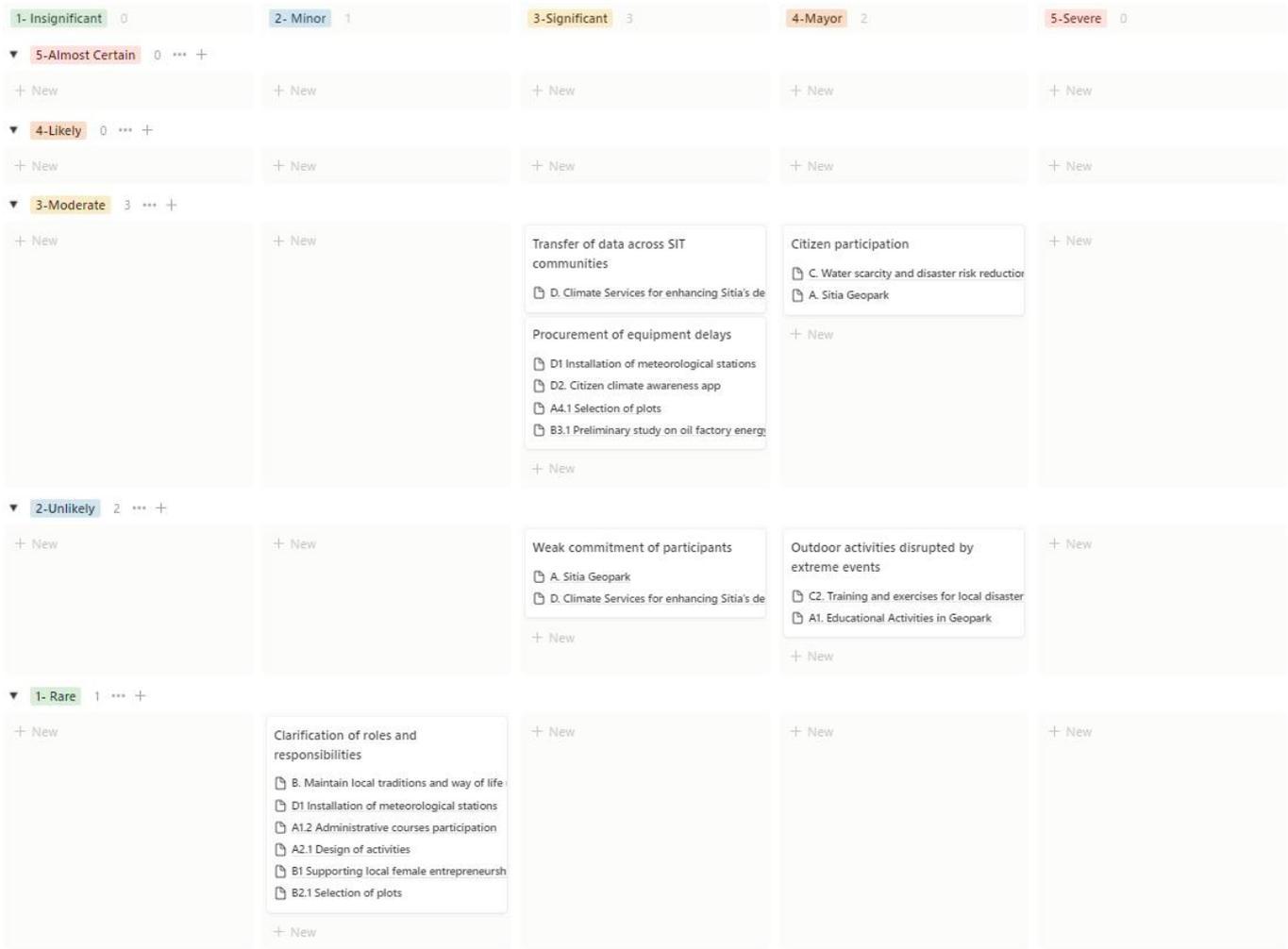
With regard to the assessment of risks associated with innovation actions, a total of 6 risks have been identified and evaluated. However, 16 actions do not have an associated risk, so it is recommended to evaluate the potential risks associated to them prior to the start date of these actions.

The Kanban board analysis of the status of these identified risks shows that 1 of the 6 risks is activated and 2 are not activated. The rest (3) do not have an assigned status, so it is recommended that the status of the "No Status" risks be changed to "Not activated" so that they can be correctly displayed in the analysis. These risks also have personnel assigned to monitor them. The view of this panel can be seen in the figure below.



**Figure 68.** View of Dashboard 3.1. for Sitia Region at M5.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.



**Figure 69.** View of Dashboard 3.2. for Sitia Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 1 risk has been identified as **High**, 4 as **Medium** and 1 as **Very Low**. Intensive monitoring of the risks identified as High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					
Likely			● ●	●	
Moderate			●	●	
Unlikely			●	●	
Rare		●			

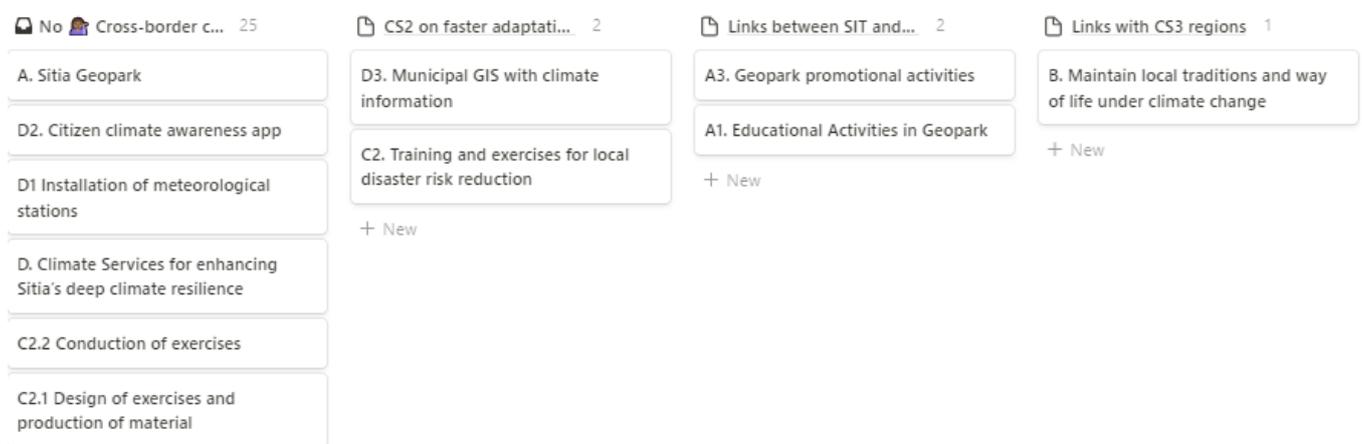
**Table 23.** Risk assessment for Sitia Region

### 4.3.1.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 3 actions for cooperation and transfer of good practices have been identified, covering 5 of the proposed innovation actions. Specifically, the actions involved in the transfer are:

- A1. Educational Activities in Geopark
- A3. Geopark promotional activities
- B. Maintain local traditions and way of life under climate change
- C2. Training and exercises for local disaster risk reduction
- D3. Municipal GIS with climate information

The distribution of actions is shown in the figure below.

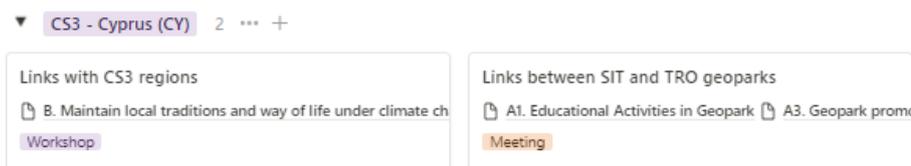


**Figure 70.** View of Dashboard 2.3. for Sitia Region at M5.

All proposed transfer and cooperation actions have a proposed date, with the first action planned for September 2023 (Dashboard 4.1). Consequently, all actions appear as "not started" on the Kanban board (Dashboard 4.2).

All the identified actions have also identified the Region(s) with which to collaborate, as shown in the figure below. The result of this view shows the collaborative actions identified by region, and sorted by CS.





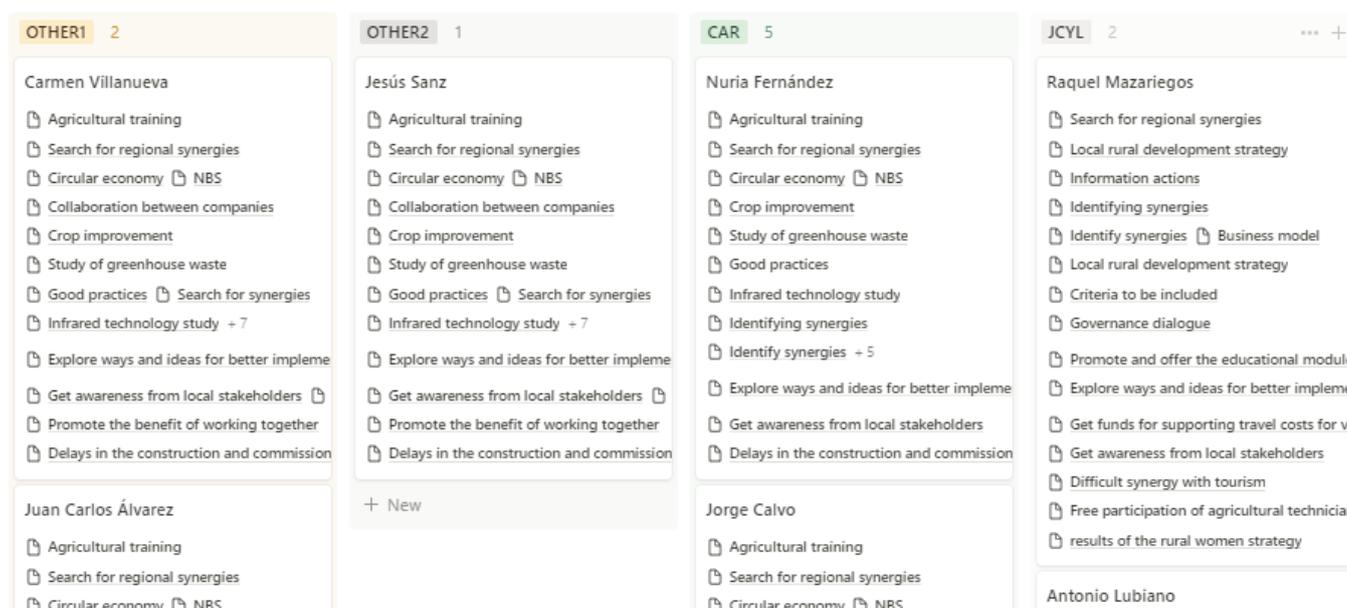
**Figure 71.** View of Dashboard 4.3. for Sitia Region at M5.

## 4.3.2. Roadmap for Castilla y León

### 4.3.2.1. Partners involved

The partners involved in this region are 4, 2 of them (CAR and JCYL) are direct partners of the project. Two partners (OTHER 1 and OTHER 2) have also been identified who are currently outside the project but who, at the time of writing, are in the process of joining the project to replace APA. The people involved in each of them have been identified and tasks have been assigned to each of them.

The following figure shows the final result of the Dashboard 1.1 view at M5.



**Figure 72.** View of Dashboard 1.1. for Castilla y León Region at M5.

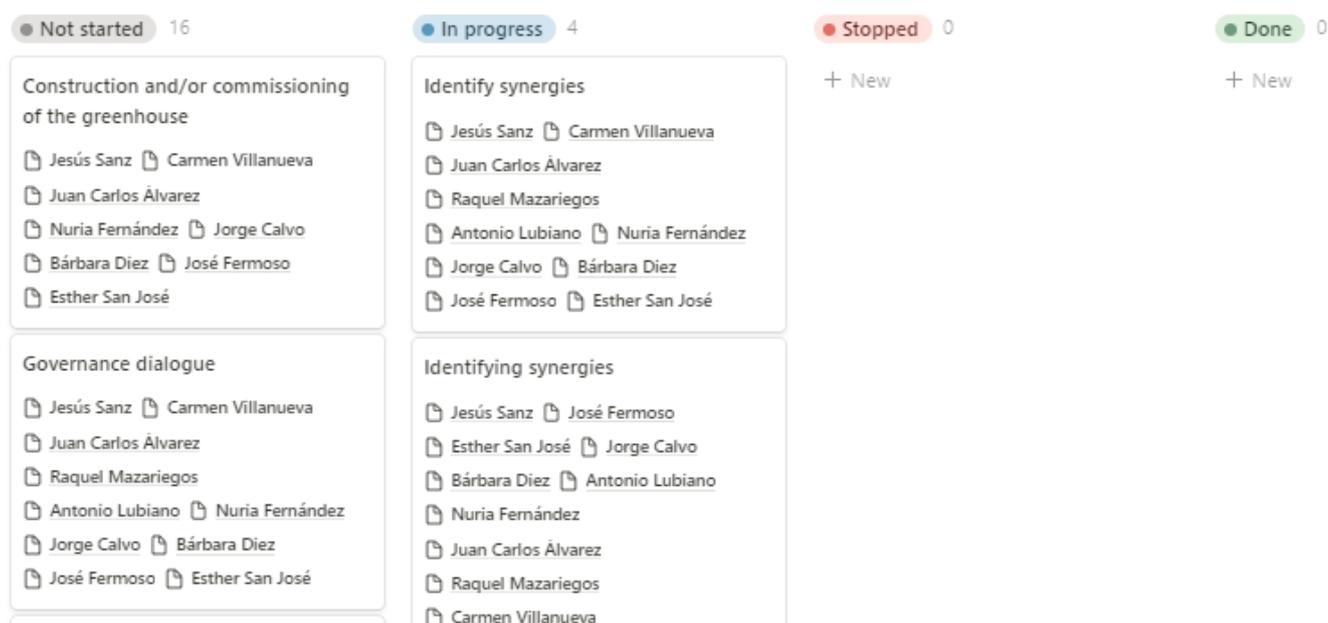
### 4.3.2.2. Planned innovation actions

Regarding the Planned Innovation Actions, 20 actions have been described, of which 4 are already in progress (\*):

1. *Agricultural training*



These 4 actions are listed on the Kanban board as in progress, as shown in the figure below. In addition, staff has been correctly assigned to each of them, including the unstarted actions.

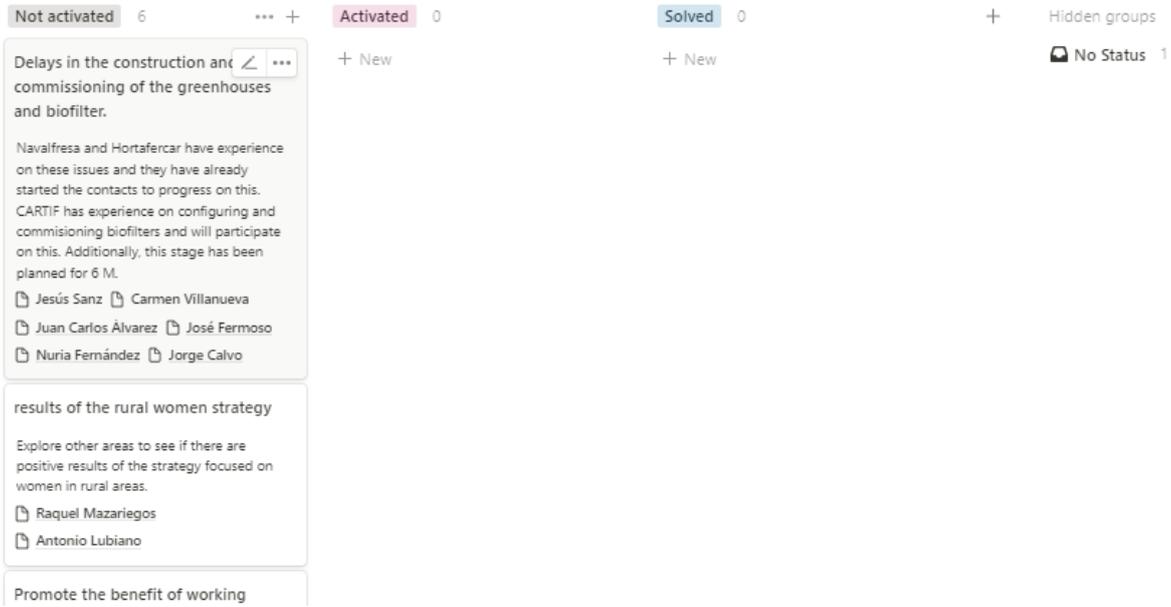


**Figure 74.** View of Dashboard 2.2. for Castilla y León Region at M5.

### 4.3.2.3. Risks identification and measures to minimize the risks

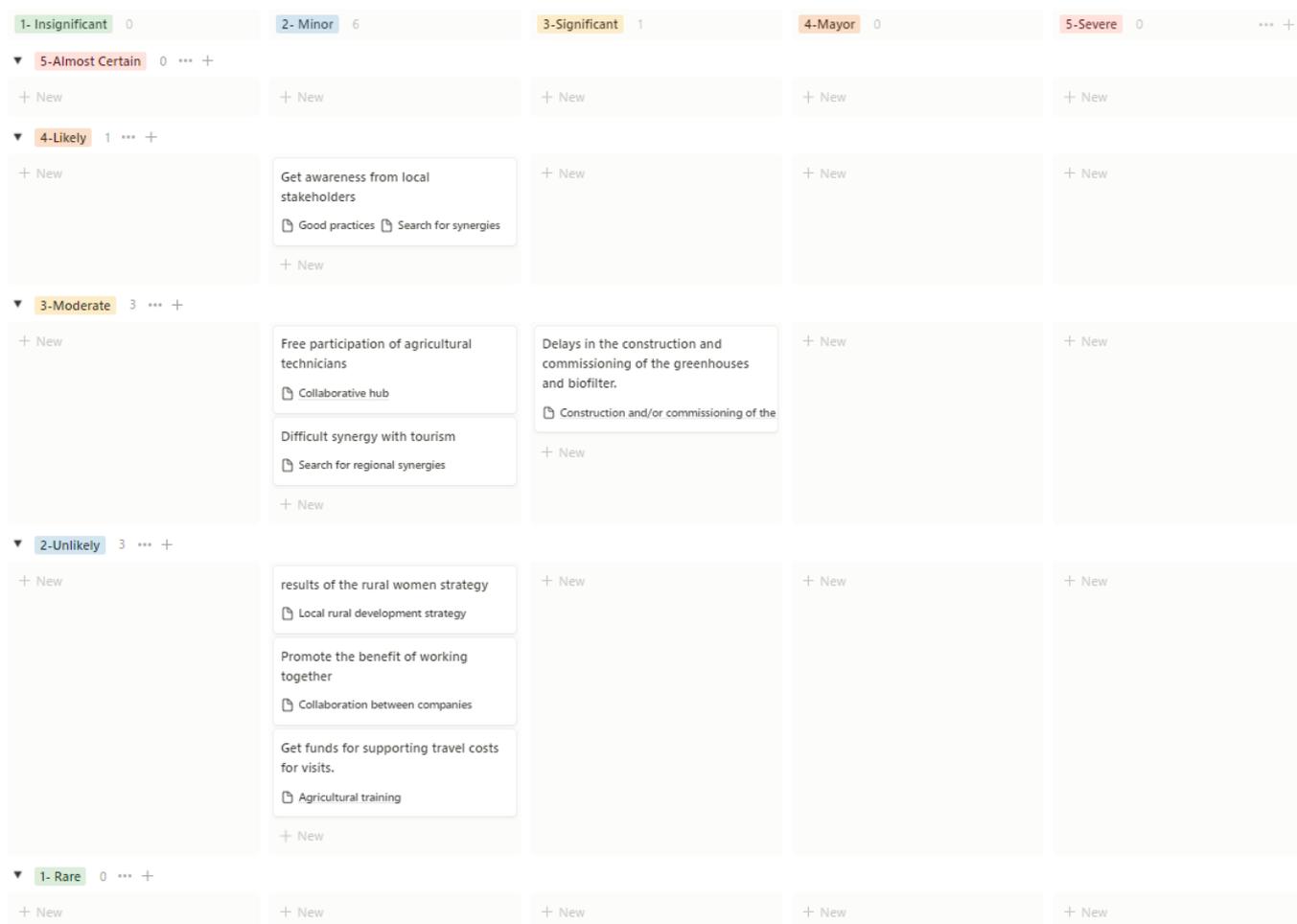
With regard to the assessment of risks associated with innovation actions, a total of 7 risks have been identified and evaluated. However, 12 actions do not have an associated risk, so it is recommended to evaluate the potential risks associated to them prior to the start date of these actions.

The Kanban board analysis of the status of these identified risks shows almost all of them are not activated (6). One risk has not an assigned status, so it is recommended that the status of the "No Status" risks be changed to "Not activated" so that they can be correctly displayed in the analysis. These risks also have personnel assigned to monitor them. The view of this panel can be seen in the figure below.



**Figure 75.** View of Dashboard 3.1. for Castilla y León Region at M5.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.



**Figure 76.** View of Dashboard 3.2. for Castilla y León Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 4 risks have been identified as **Medium** and 3 as **Low**. Intensive monitoring of the risks identified as Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					
Likely		●			
Moderate		●●	●		
Unlikely		●●●			
Rare					

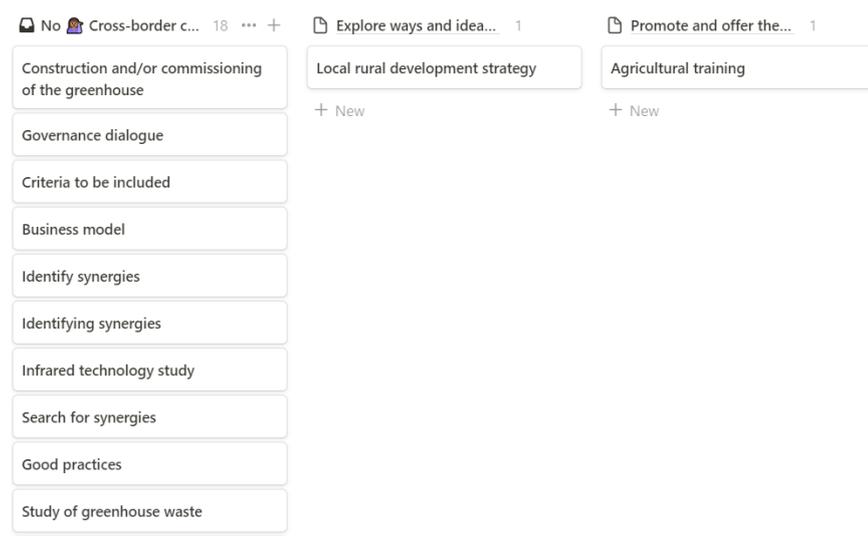
**Table 24.** Risk assessment for Castilla y León Region

#### 4.3.2.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 2 actions for cooperation and transfer of good practices have been identified, covering 2 of the proposed innovation actions. Specifically, the actions involved in the transfer are:

- *Agricultural training*
- *Local rural development strategy*

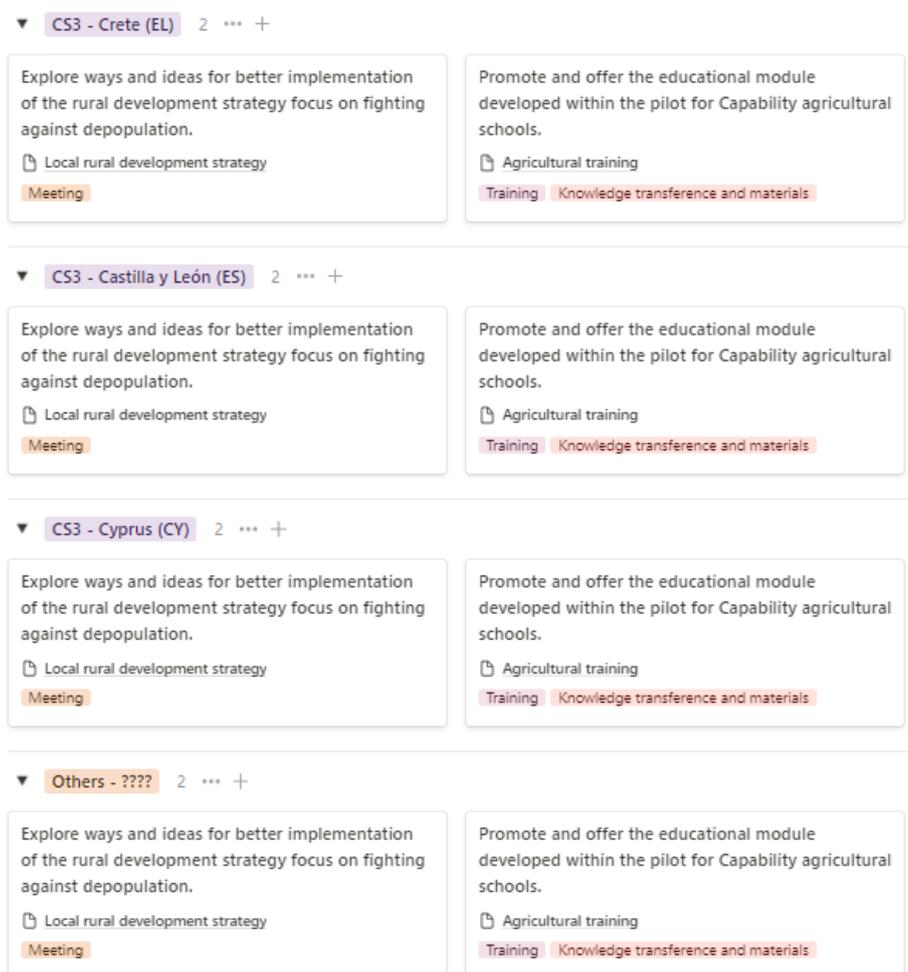
The distribution of actions is shown in the figure below.



**Figure 77.** View of Dashboard 2.3. for Castilla y León Region at M5.

All proposed transfer and cooperation actions have a proposed date, with the first action planned for May 2025 (Dashboard 4.1). Consequently, all actions appear as "not started" on the Kanban board (Dashboard 4.2).

All the identified actions have also identified the Region(s) with which to collaborate, as shown in the figure below. The result of this view shows the collaborative actions identified by region, and sorted by CS. It is recommended to seek opportunities for collaboration with regions outside the SC.



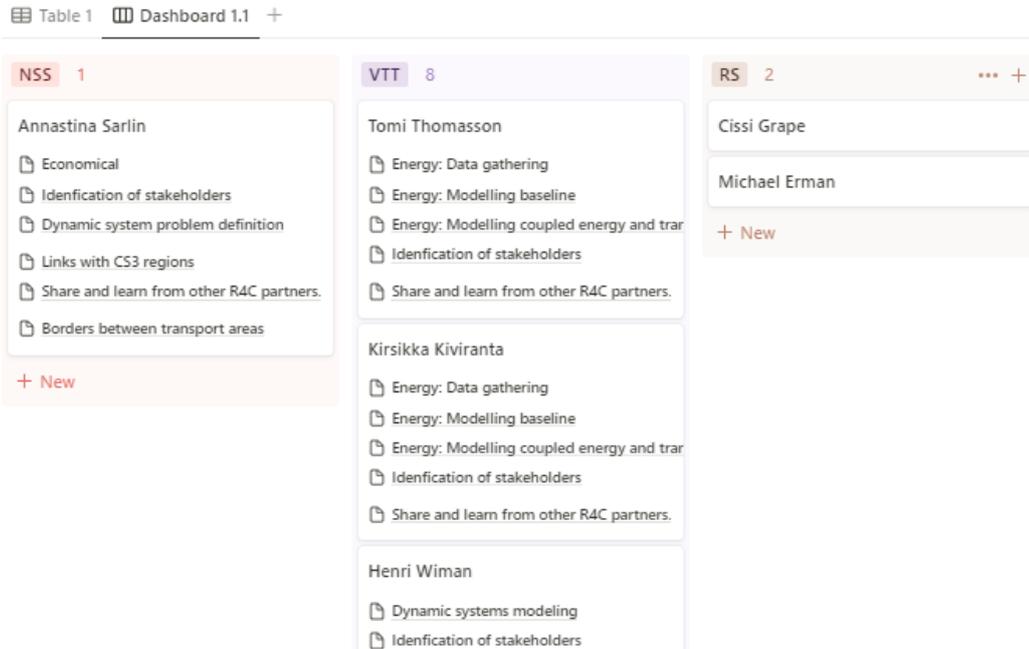
**Figure 78.** View of Dashboard 4.3. for Castilla y León Region at M5.

### 4.3.3. Roadmap for Nordic Archipelago

#### 4.3.3.1. Partners involved

The partners involved in this region are 3, all direct partners of the project. These partners are: NSS, VTT and RS. The people involved in each of them have been identified and tasks have been assigned to each of them, with a few exceptions. There are no people without an assigned entity and no participation of entities outside the project has been declared.

The following figure shows the final result of the Dashboard 1.1 view at M5.



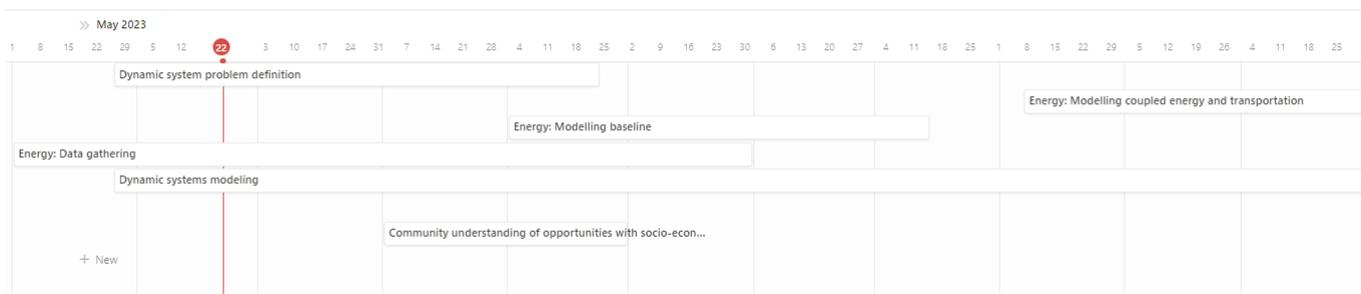
**Figure 79.** View of Dashboard 1.1. for Nordic Archipelago Region at M5.

### 4.3.3.2. Planned innovation actions

Regarding the Planned Innovation Actions, 14 actions have been described, of which 5 are already in progress (\*):

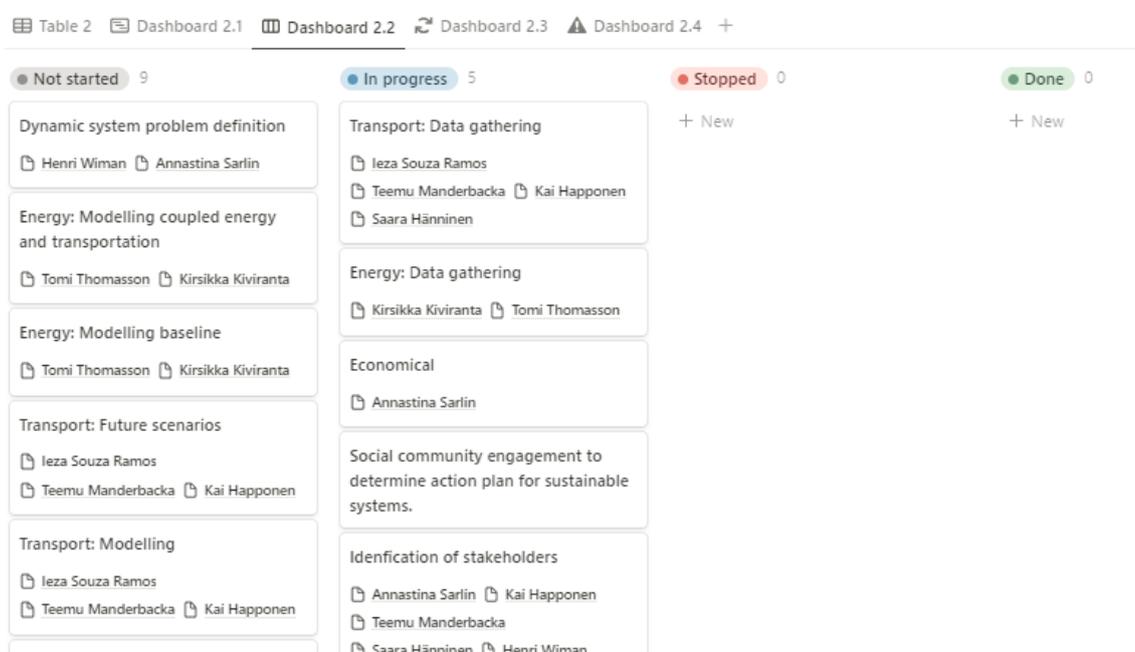
1. (\*) *Identification of stakeholders*
2. *Community understanding of opportunities with socio-economic developments (energy and transport)*
3. (\*) *Social community engagement to determine action plan for sustainable systems.*
4. *Improve liveability of region, economic growth through optimisat*
5. *Systematically assess climate change risk vulnerabilities*
6. *Dynamic system problem definition*
7. *Dynamic systems modelling*
8. (\*) *Energy: Data gathering*
9. *Energy: Modelling baseline*
10. *Energy: Modelling coupled energy and transportation*
11. (\*) *Transport: Data gathering*
12. *Transport: Modelling*
13. *Transport: Future scenarios*
14. (\*) *Economical*

The figure below shows the timeline resulting from the first action planning at M5, for the next year. The date marked in red corresponds to 22/06/2023 and the graph marks the passage of the date approximately every 7 days. This view starts in May 2023 and finalises in May 2024.



**Figure 80.** View of Dashboard 2.1. for Nordic Archipelago Region at M5.

These 5 actions are listed on the Kanban board as in progress, as shown in the figure below. Staff has been assigned to each of them, except for one of the actions. It is recommended to identify at least one person responsible for this action.



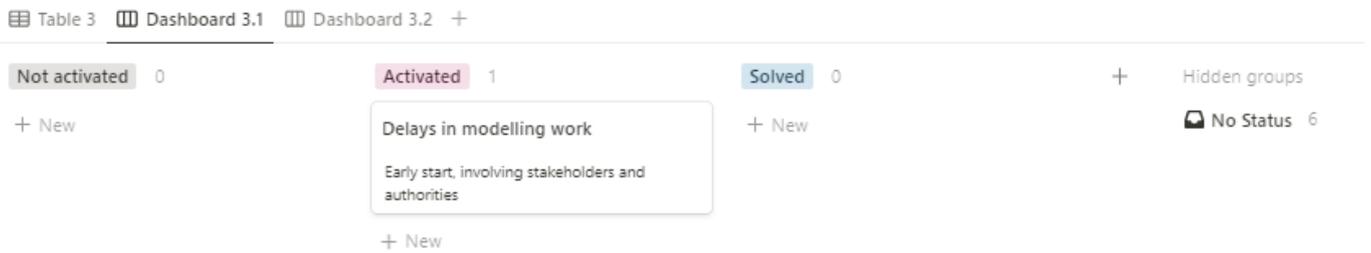
**Figure 81.** View of Dashboard 2.2. for Nordic Archipelago Region at M5.

### 4.3.3.3. Risks identification and measures to minimize the risks

With regard to the assessment of risks associated with innovation actions, a total of 7 risks have been identified and evaluated. However, 6 actions do not have an associated risk, so it is recommended to evaluate the potential risks associated to them prior to the start date of these actions.

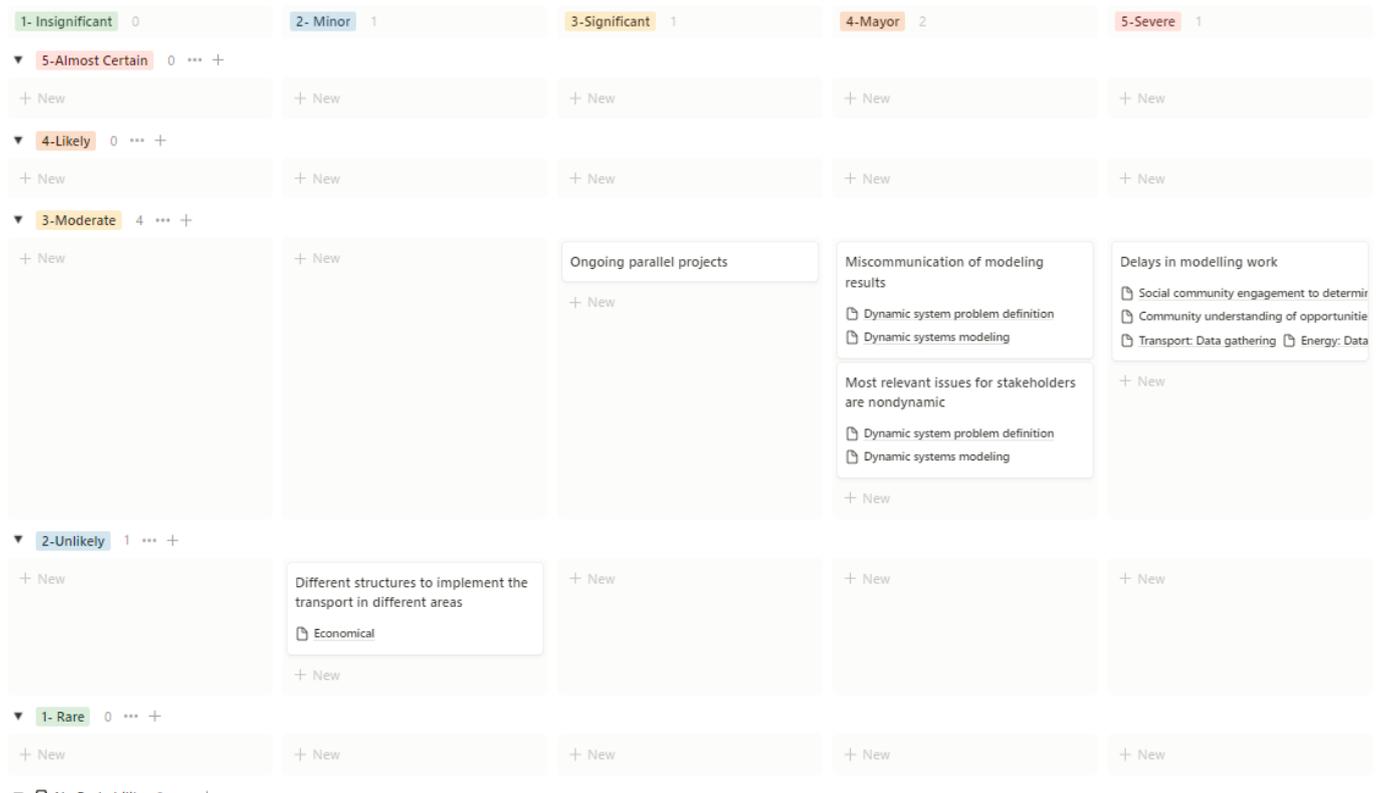
The Kanban board analysis of the status of these identified risks shows that 1 of the 7 risks is activated. The rest (6) do not have an assigned status, so it is recommended that the status of the “No Status” risks be changed to

"Not activated" so that they can be correctly displayed in the analysis. These risks also have personnel assigned to monitor them. The view of this panel can be seen in the figure below.



**Figure 82.** View of Dashboard 3.1. for Nordic Archipelago Region at M5.

On the other hand, risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified, with one exception. It is recommended to carry out the risk analysis for the action "Borders between transport areas". The result is shown below.



**Figure 83.** View of Dashboard 3.2. for Nordic Archipelago Region at M5.

Based on the analysis proposed in Section 3.3.3.2, 1 risk has been identified as **Very High**, 2 as **High**, 1 as **Medium** and 1 as **Low**. Intensive monitoring of the risks identified as Very High, High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					
Likely					
Moderate			●	●●	●
Unlikely		●			
Rare					

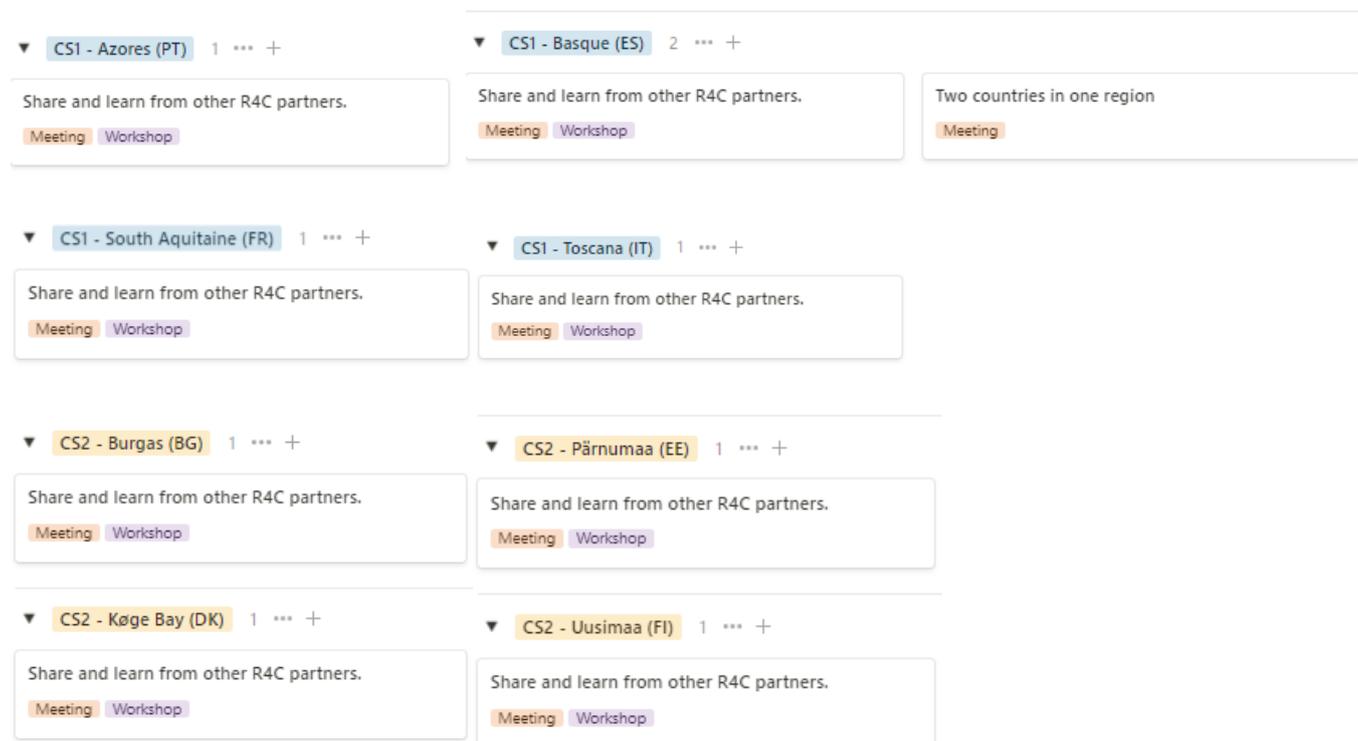
**Table 25.** Risk assessment for Nordic Archipelago Region

### 4.3.3.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 4 actions for cooperation and transfer of good practices have been identified, but none of the proposed innovation actions are related to them. So, it is recommended to associate at least 1 innovation action to each practice to transfer or cooperation actions.

One of the proposed transfer and cooperation actions have set a date, starting in October 2023 (Dashboard 4.1). Consequently, all actions appear as "not started" on the Kanban board (Dashboard 4.2).

All the identified actions have also identified the Region(s) with which to collaborate, as shown in the figure below. The result of this view shows the collaborative actions identified by region, and sorted by CS.



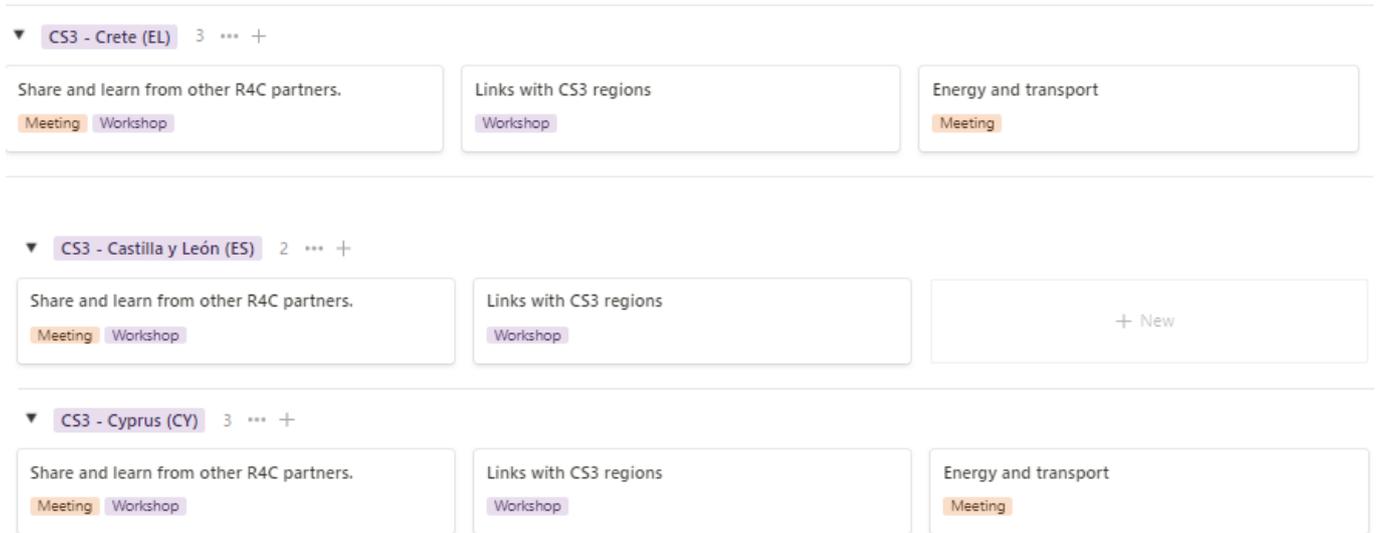


Figure 84. View of Dashboard 4.3. for Nordic Archipelago Region at M5.

### 4.3.4. Roadmap for Troodos

#### 4.3.4.1. Partners involved

The partners involved in this region are 6. These partners are: Cyprus Energy Agency, Troodos Network, Troodos Tourism Board, Troodos Development Company, Deputy Ministry of Tourism, Department of Forests. The people involved in each of them have been identified and tasks have been assigned to each of them, with one exception. There are no people without an assigned entity.

The following figure shows the final result of the Dashboard 1.1 view at M5.

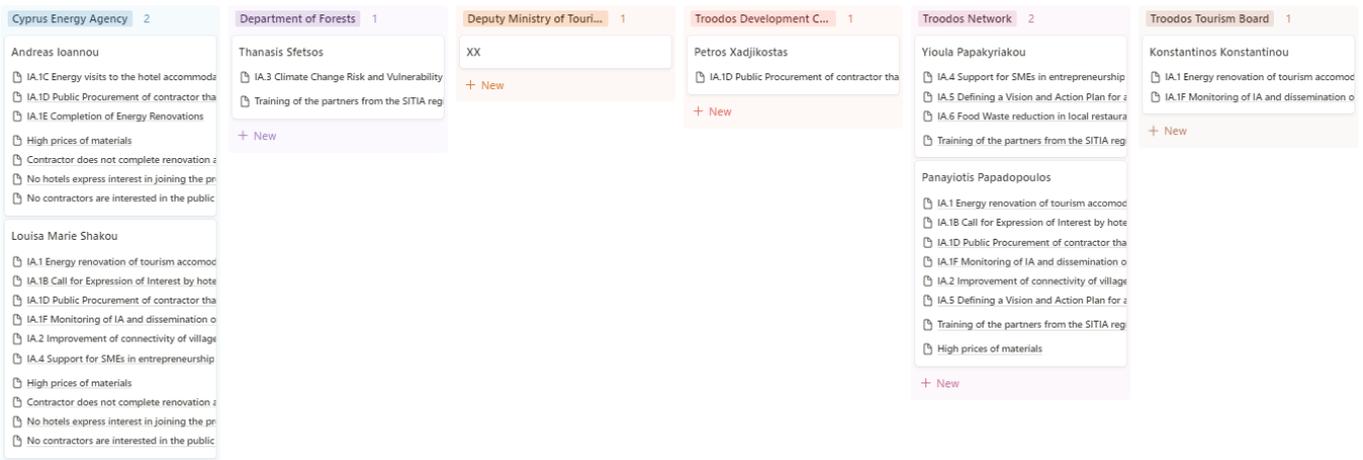


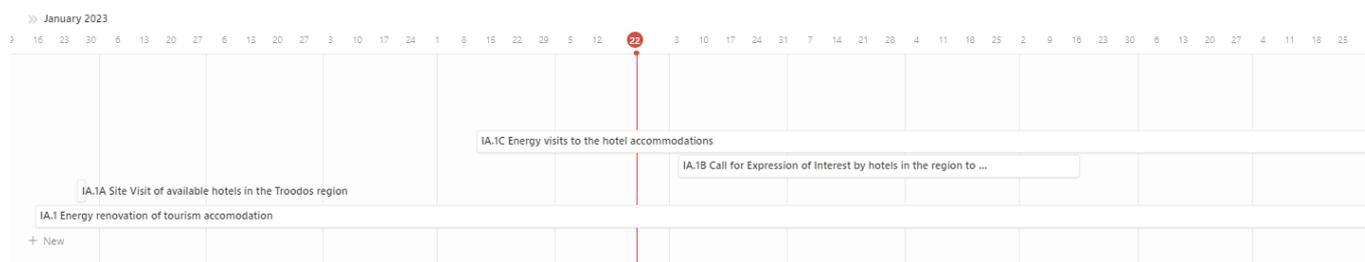
Figure 85. View of Dashboard 1.1. for Troodos Region at M5.

### 4.3.4.2. Planned innovation actions

Regarding the Planned Innovation Actions, 13 actions have been described, of which 1 is already in progress (\*):

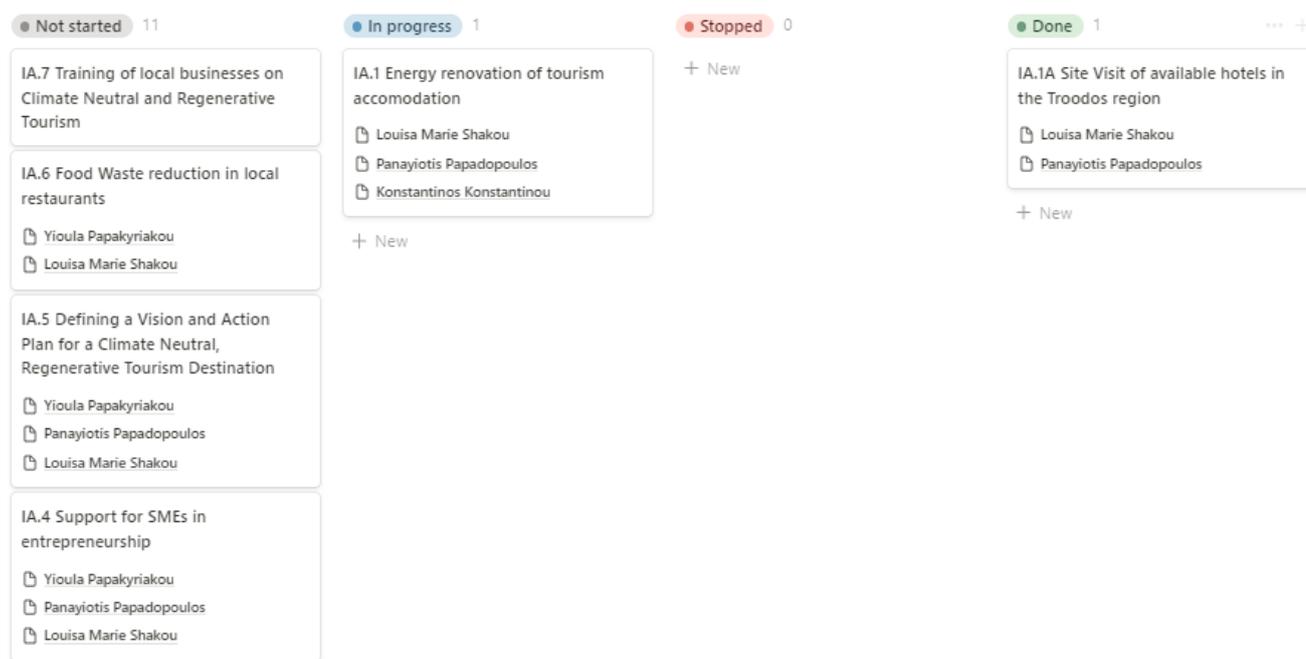
- (\*) IA.1 Energy renovation of tourism accommodation
  - o (\*) IA.1A Site Visit of available hotels in the Troodos region
  - o IA.1B Call for Expression of Interest by hotels in the region to join the demo
  - o IA.1C Energy visits to the hotel accommodations
  - o IA.1D Public Procurement of contractor that will complete the energy renovations
  - o IA.1E Completion of Energy Renovations
  - o IA.1F Monitoring of IA and dissemination of outcomes to the other tourist accommodation in the region to promote the uptake of energy renovations by others
- IA.2 Improvement of connectivity of villages using sustainable mobility options
- IA.3 Climate Change Risk and Vulnerability Assessment
- IA.4 Support for SMEs in entrepreneurship
- IA.5 Defining a Vision and Action Plan for a Climate Neutral, Regenerative Tourism Destination
- IA.6 Food Waste reduction in local restaurants
- IA.7 Training of local businesses on Climate Neutral and Regenerative Tourism

The figure below shows the timeline resulting from the first action planning at M5, for the next year. The date marked in red corresponds to 22/06/2023 and the graph marks the passage of the date approximately every 7 days. This view starts in January 2023 and finalises in January 2024.



**Figure 86.** View of Dashboard 2.1. for Troodos Region at M5.

There is 1 action listed on the Kanban board as in progress, and 1 action already done, as shown in the figure below. In addition, staff has been correctly assigned to each of them, with some exceptions. It is recommended that at least one task manager be identified before the task begins.

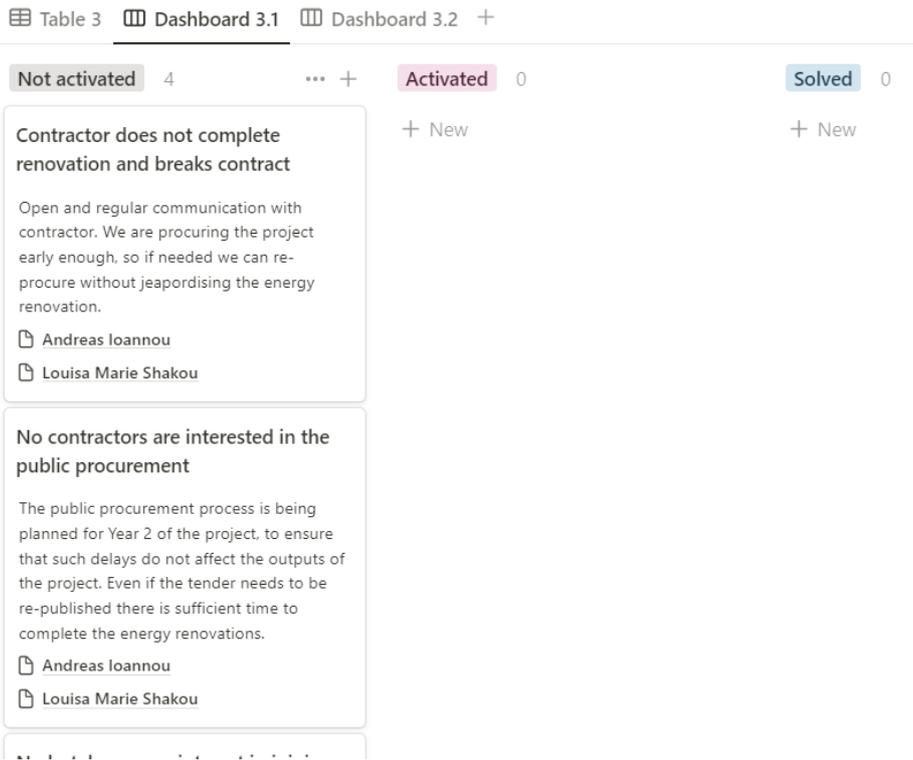


**Figure 87.** View of Dashboard 2.2. for Troodos Region at M5.

#### 4.3.4.3. Risks identification and measures to minimize the risks

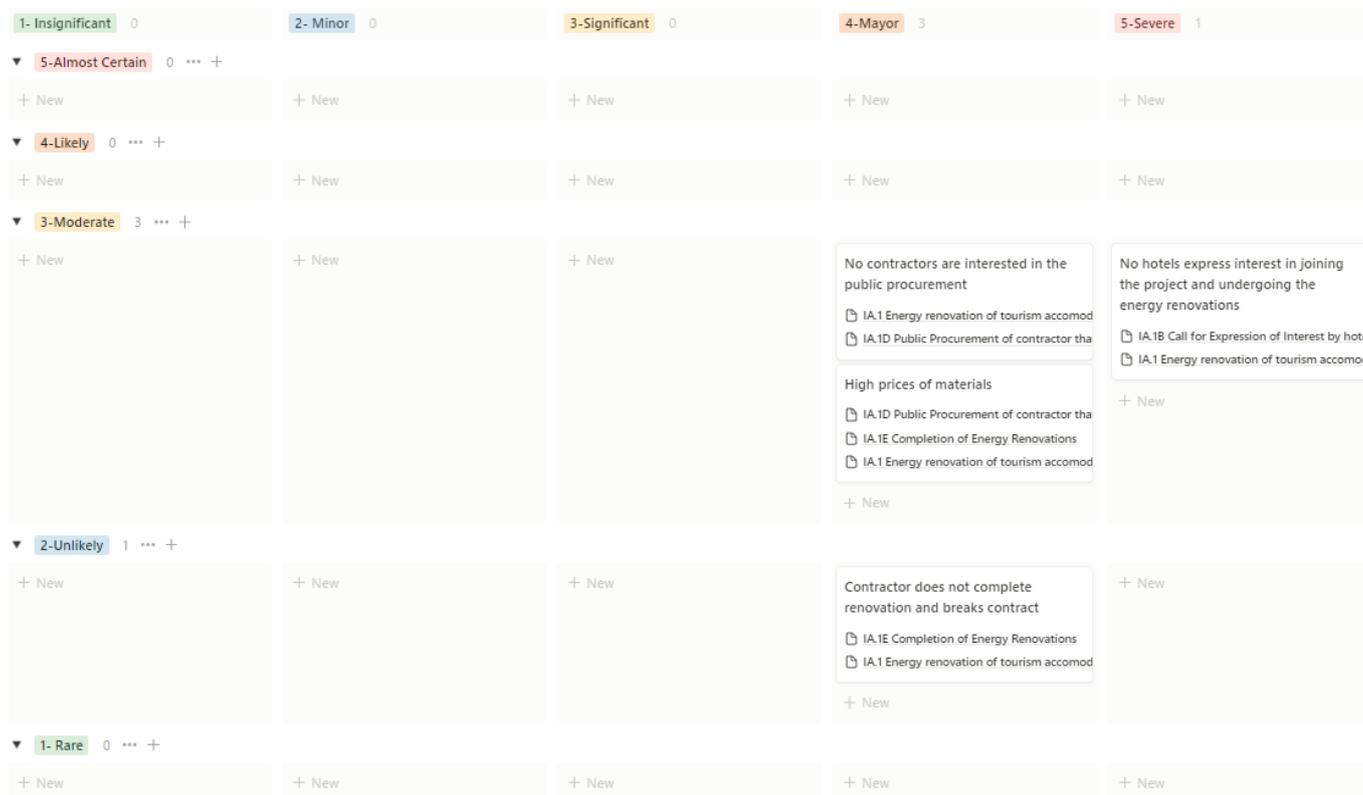
With regard to the assessment of risks associated with innovation actions, a total of 4 risks have been identified and evaluated. However, 9 actions do not have an associated risk, so it is recommended to evaluate the potential risks associated to them prior to the start date of these actions.

The Kanban board analysis of the status of these identified risks shows that all of them are not activated. Since there is an action in place, the risk(s) associated with this action should at least be activated and its review is recommended. These risks also have personnel assigned to monitor them. The view of this panel can be seen in the figure below.



**Figure 88.** View of Dashboard 3.1. for Troodos Region at M5.

On the other hand, a correct risk assessment has been carried out, assigning a level of impact and probability to each of the risks identified. The result is shown below.



**Figure 89.** View of Dashboard 3.2. for Troodos Region at M5.

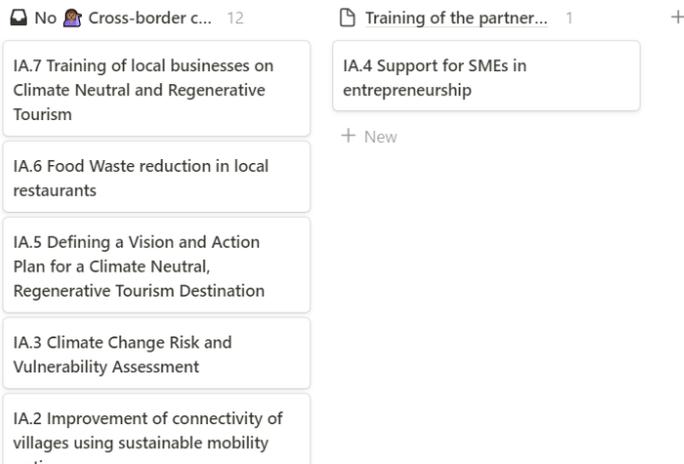
Based on the analysis proposed in Section 3.3.3.2, 1 risk has been identified as **Very High**, 2 as **High**, and 1 as **Medium**. Intensive monitoring of the risks identified as Very High, High and Moderate is recommended, and the implementation of corrective measures. These results are shown in the following table.

	Insignificant	Minor	Significant	Major	Severe
Almost Certain					
Likely					
Moderate				●●	●
Unlikely				●	
Rare					

**Table 26.** Risk assessment for Troodos Region

#### 4.3.4.4. Cross-border cooperation actions and transfer of best practices

For the identified actions, 1 action for cooperation and transfer of good practices has been identified, covering 1 of the proposed innovation actions. The action to transfer and the distribution of actions is shown in the figure below.



**Figure 90.** View of Dashboard 2.3. for Troodos Region at M5.

No date has been set for this action, although the practice to be transferred and the Region with which to participate have been identified. It is recommended to identify more actions to transfer and/or Regions to collaborate with.



**Figure 91.** View of Dashboard 4.3. for Troodos Region at M5.

## 5. Conclusions

This document explores the potential for cross-border collaboration and cooperation between regions, with a specific focus on developing a common vision and fostering the transfer of best practices. It also describes and summarizes the regional demonstration innovation roadmaps and provides the regions with a tool they can use to monitor and record progress on innovation actions for the duration of the Regions4Climate project.

The analysis of the cross-border actions has identified regions that, being particularly isolated, should pay special attention to the potential collaborative actions. This is the case of the Azores and Troodos regions, which should look for regions outside their immediate borders with common interests to collaborate. It is recommended that collaboration be sought between the Azores and Troodos regions with other surrounding regions with similar characteristics. Although these two regions present a particular and interesting case, it is recommended that the other regions study the current collaborations they have foreseen and strengthen them, and that they explore collaboration opportunities with other regions in the area or among the same regions but in other areas that are not contemplated within this document yet.

Most of the practices identified in relation to climate change are related to risk management issues. This contrasts with the lack of a common strategy between bordering regions, particularly in land use management and climate change adaptation. Thus, the development of a common strategy to join efforts across regions and their borders, is strongly necessary. In addition, there is a need for more collaboration between institutions, and for the creation of policies that foster collaboration between regions by building bridges for strategic management and collaborative action on climate change adaptation. Internally (i.e. within the R4C consortium), a total of 17 opportunities for collaboration and exchange between regions have been identified, on the basis of which, together with the planning of activities, the calendar of exchange activities between regions will be established.

The information provided by the regions for each section of the roadmap is of particular interest, as it links the innovation actions of each region to potential associated risks and the measures to minimize them. It also provides an accurate timeline for the Innovation actions, the cross-border collaboration activities, and an overview of the status of these actions and all partners and stakeholders involved in the implementation of the demonstrations.

The cross-border cooperation actions, is one of the most controversial points because many of the actions to be transferred are still at an early stage. However, the foundations for their characterisation have been laid and a preliminary analysis of opportunities has been carried out, which will guide the Regions in updating their Roadmaps as progress is made in this area.

Overall, the Regions have successfully carried out the initial planning of the actions within the project through the Roadmap tool. The innovation actions have been identified, the partners involved, the associated risks have been assessed and cooperation actions have been detected. However, the Roadmaps generated are living documents that will have to be fed by the progress achieved and serve as a guide for the Regions to ensure a successful implementation based on the exchange of experiences and mutual cooperation between Regions.

## 6. Annex

### 6.1. Cross-border collaboration survey

#### Cross-border vision

Your region

Las respuestas están conectadas a su cuenta Nextcloud. Un asterisco (\*) indica preguntas obligatorias.

**Your region**

Enter your answer

---

**How many regions do you share border with? \***

**Does your region have a Climate Change Action Plan (CCAP)? \***

- Yes
- No
- Ongoing

**Can you identify some of good practices in your region regarding CC adaptation? \***

Enter your answer

**Can you identify also bad practices in your region regarding CC adaptation? \***

Enter your answer

---

**Do you have collaborative actions with your neighbour regions? \***

- Yes
- No, but I would like to

**Do you find any barriers to collaborate with your neighbours in CC adaptation related actions or to implement best practices?**

- No
- Yes, related with social issues
- Yes, related with environmental issues (wild fires, water management, coastal resilience, etc.)
- Yes, related with economic issues
- Yes, related with policies & governance

**Could you tell us which is your institution? \***

Enter your answer

---

**Could you share with us your email, please? \***

Enter your answer

---

**Other comments, potential ideas to collaborate among cross-border regions, etc.**

Enter your answer

Enviar

## 6.2. Collaboration opportunities

Note for the tables:

- ★ Indicates an action in which the region has expertise to share.
- ? Indicates an action in which the region would benefit from the experience of others.

### 6.2.1. Challenge Suite 1

Note: Core pillars on CS1: (1) Benchmarking of techniques for coastal protection and restoration, including biodiversity. (2) Examination of opportunities for Blue Carbon Credits. (3) Citizen education & engagement in resilience building actions. (4) Cross-border actions, including multi-scale monitoring & multi-sectoral adaptation planning.

REGION	CORE PILLAR	ACTION	★	?
South Aquitaine	3	XR visualization of coastal flooding events to support awareness raising		?
	3	training of local administration services to the use of ocean monitoring and forecasting systems	★	
Tuscany	4	capacity building initiatives with relevant general public (citizens association, schools...)	★	
	2	stakeholder engagement workshop around M54 for presenting project results	★	
	1	stakeholder engagement workshop in the first 12 months, for sharing project objectives and acquire requirements, user needs, etc.	★	
	3	participation to relevant local events for raising awareness on the demonstration	★	
Azores	1	marine life monitoring app	★	
	3	2 workshops to educate and raise awareness of general public	★	
	1	Azorean footprint app	★	
		1 <sup>o</sup> workshop to educate and raise awareness of general public	★	
		complete educational sessions with academic and school communities		
Basque	3	social vulnerable groups identification and engagement strategy		?

REGION	CORE PILLAR	ACTION	★	?
region	4	Stakeholders mapping + CC resilience initiatives mapping - Collaboration opportunities (gaps, overlapping, synergies...)	★	

**Table 27.** Challenge Suite 1. Social innovation actions.

REGION	CORE PILLAR	ACTION	★	?
Basque region	2	Tidal floods restoration in Txingudi, zosteria nottei plantation/growth	★	
	1	Restore degraded areas dedicated to agriculture or other uses that were originally marshes	★	
	1	recover the estimate dynamics and the state of the associated ecosystems	★	
	4	high resolution hazard assessment at Txingudi with different adaptation planning local monitoring	★	
	4	regional monitoring programme: Copernicus, hydrodynamic campaigns, bathymetric	★	
	1	vulnerability and risk assessment - gap awareness	★	
South Aquitaine	1, 4	video monitoring stations deployment , EWS implementation coastal defence survey	★	
		coastal defence survey	★	
Azores	1	interactive digital coastal vulnerability map for Azores islands		?
		vulnerability and risk assessment alteration		
Tuscany	2	realisation of a monitoring system and an ICT resilience data management platform	★	
	1	design and realization of an artificial dune and its ecosystem	★	
	3	modelling of coastal dynamics and structures, both leveraging on experimental and numerical models		
		public tender for the restoration of the dune by municipality of Piombino		
		resilience assessment platform operation and use		
		monitoring the effectiveness on the installed dune		

**Table 28.** Challenge Suite 1. Environmental innovation actions.

REGION	CORE PILLAR	ACTION	★	?
South Aquitaine	3, 4	Assess local impact of CC on coastal activities	★	
Basque region	4	strategic planning of the basque adaptation mission	★	
	2	funding opportunities identification	★	
Tuscany	1	cost-benefit analyse of the artificial dunal system for promoting its replication	★	
	2	impact analysis of demonstrated solutions for each stakeholder category	★	
		implementation of the work-construction completed		

**Table 29.** Challenge Suite 1. Economic innovation actions.

REGION	CORE PILLAR	ACTION	★	?
Basque region	4	strategic planning of the basque adaptation mission	★	
	4	policy & governance integration of adaptation measures into planning development instruments (master plans, Hendaya, Hondarribi)	★	
	4	policy & governance criteria for coherent planning in the cross-border area (FR/ES) and how to mainstream in planning instruments and decision making	★	
TUSCANY	2	Creation of policy participation events with hotels and touristic associations as well as bathing establishment	★	
	1	Organization of specific participatory events with the municipality authorities.	★	
		design of the artificial dunal system-design approved and authorised by public authorities		
South Aquitaine		video monitoring stations deployment	★	
		EWS implementation	★	
	4	include real time monitoring system and EWS into decision making procedure	★	
Azores		provide recommendation to improve policies implementation	★	

**Table 30.** Challenge Suite 1. Policy & Governance innovation actions.

## 6.2.2. Challenge Suite 2

Note: Core pillars on CS2: (1) Bridging the science-stakeholder-policy gap via innovative evidence-based digital tools (2) Raising citizens' awareness of climate issues, adaptation solutions, & potential trade-offs (3) Improving the use of existing data via fusion of heterogeneous data sources & advanced analytics to support decision-making

REGION	CORE PILLAR	ACTION	★	?
BURGAS	2	The voice of young generation	X	
	2	Climate events and raising awareness campaigns	X	
KOGEBAY	2	Psychosocial learning activities		X
	2	Social resilience		X
		AR & VR	X	
PÄRUUMAA	3	Data-driven UMI. Mapping and analysis	X	
		citizen which most benefits most enough from new green spaces		
UUSIMAA	2	Modelling social impact of green space		
	2	Social Value/valuation of green space		X
	2	Participatory workshop		
	2	Social value overlap W/ adaptation value		X

**Table 31.** Challenge Suite 2. Social innovation actions.

REGION	CORE PILLAR	ACTION	★	?
BURGAS	3	Launching the green necklace of Burgas	X	
	3	Increasing the capacity for early flood warning and prevention	X	
KOGEBAY	1	Highlight benefits of strandparken	X	
		Illustration of future risks with VR and AR	X	
PÄRUUMAA	1	Ecosystem services preservation		X
		defining case continuous		
UUSIMAA	3	NBS mitigation solutions		
	3	Landslide analysis	X	
	3	UHI modelling		X
	3	Landslide modelling		X
		establish weather sensor network		

**Table 32.** Challenge Suite 2. Environmental innovation actions.

REGION	CORE PILLAR	ACTION	★	?
KOGEBAY	3	Business model for multifunctional coastal protection	X	
BURGAS	3	3D modelling / digital tool business case		X
	1	Involving business in spatial design and green criteria for urban development		X
UUSIMAA	1	Climate resilience logistics centre development	X	
PÄRUUMAA	3	Predictive modelling	X	

**Table 33.** Challenge Suite 2. Economic innovation actions.

REGION	CORE PILLAR	ACTION	★	?
BURGAS	1	Increasing the capacity and expertise of city administration to resilient urban planning	X	
	1	Involving national authority responsible for green transition		X
KOGEBAY	3	Promote AR&VR for decision making	X	
	1	Improve policy integration		X
	1	Cooperation across admin. Boundaries		X
PÄRUUMAA	2	Climate change awareness adaptation		
		regions level model		
UUSIMAA	1	Climate resilient planning guidelines		
	3	Including UHI and landslide survey into master planning	X	

**Table 34.** Challenge Suite 2. Policy & Governance innovation actions.

### 6.2.3. Challenge Suite 3

Note: Core pillars on CS3: (1) Green Social Business Models (GSBMs) for sustainable socioeconomic renewal, largely focused on primary industries (2) Community engagement in regional climate resilience-building, including sustainable resource use (3) Resource resilience strategy development supported by monitoring & modelling

REGION	CORE PILLAR	ACTION	★	?
Castilla y León	2,3	Involvement of local actions groups in the identification of the needs and the definition of governance and policy actions.	X	
	3	creation of round tables among local actors to create the GSBM	X	
Cyprus	1	empowerment of local women to access markets for their local products	X	
Nordic A	2	community understanding of opportunities with socio-economic developments (energy and transport)		
	1	Social community engagement to determine action plan for sustainable energy systems		
	3	Improve liveability of region, economic growth through optimisation of transport and energy		
Sitia	2,3	citizen empowerment through community education in climate neutral and regenerative tourism. Using Sitia UNESCO as part of outdoor classroom	X	
	2	Support vulnerable groups. Highschool children/teachers/parents by educating on "how to prepare" for climate change. Educating future citizens on climate change.	X	
	1,2	communicating to farmers, packers and cooperatives for best environmental practices	X	

**Table 35.** Challenge Suite 3. Social innovation actions.

REGION	CORE PILLAR	ACTION	★	?
Castilla y León	1	Elaboration of procedures to use CO2 in GH to increase crop production	X	
	2	production of organic fertilizer at local levels by collaborative model		
	1	use of CO2 from solid fuels heaters to increase GH production	X	
	1	biofilter for filtering combustion emissions for solid fuel heaters of the GH	X	
	1	creation of recipes for composting local waste		
	2	logistic and technical development of a plant to feed the GH heaters with local biomass waste		
Cyprus	3	Zero energy hotel	X	
	3	E-bike centres and routes	X	
	3	climate change risk assessment of Troodos region		X
Nordic A	3	systematically assess climate change risk vulnerabilities of region, focus impacts to existing planned transport	X	
	3	monitoring, modelling and impact assessment (to determine progress towards climate resilience, change to liveability)	X	
	3	enhance long-term regional sustainability and reduce emissions --> update energy and transport sectors		
Sitia	1&2	inform farmers, packers and co-operatives zero polluting processing	X	

**Table 36.** Challenge Suite 3. Environmental innovation actions.

REGION	CORE PILLAR	ACTION	★	?
Castilla y León	2	design and create GSBM for food processing		X
	1,2	creation and development of GSBM (Green societal business models) for rural areas with rural women and young people as target groups		X
	1	promotion of multisectoral activities, cooperatives, agriculture, wastes management, livestock	X	
Cyprus	1	co-creation of menus with more green options and less food waste		
Nordic A	1	Derive sustainable green business model for EU company/cooperative to support administration for transport issues.	X	
Sitia	1,2,3	exploit geopark as centre of economic activities	X	
	2,3	finance models targeting to increase market, through geopark as a centre of tourism		

**Table 37.** Challenge Suite 3. Economic innovation actions.

REGION	CORE PILLAR	ACTION	★	?
Castilla y León	2	Use of regional and local channels to establish long-term relationships among local businesses	X	
	3	prepare mechanisms to make more agile procedures, location selection, permissions and licences for GSBM		
	2	create and implement innovative educational programmes linked to GSBM	X	
	2	further the implementation and replication of GSBM through integral cooperatives and entrepreneurial engagement	X	
Cyprus	1	Development of climate neutral and regenerative tourism strategy		X
Nordic A	1	Develop standardised workflows + processes for (intra) regional issues		X
Sitia	2,3	Sensitize women cooperatives for promoting local products through specialised seminars		X

**Table 38.** Challenge Suite 3. Policy & Governance innovation actions.

## 6.3. Survey on Common vision

### 6.3.1. Challenge suite 1

(1) Benchmarking of techniques for coastal protection and restoration, including biodiversity. (2) Examination of opportunities for Blue Carbon Credits. (3) Citizen education & engagement in resilience building actions. (4) Cross-border actions, including multi-scale monitoring & multi-sectoral adaptation planning.

- |   |  |
|---|--|
| 1 | <ul style="list-style-type: none"> <li>• <i>stakeholder engagement workshop in the first 12 months, for sharing project objectives and acquire requirements, user needs, etc.</i></li> <li>• <i>marine life monitoring app</i></li> <li>• <i>Azorean footprint app</i></li> <li>• <i>Restore degraded areas dedicated to agriculture or other uses that were originally marshes</i></li> <li>• <i>recover the estimate dynamics and the state of the associated ecosystems</i></li> <li>• <i>video monitoring stations deployment, EWS implementation coastal defence survey</i></li> <li>• <i>interactive digital coastal vulnerability map for Azores islands</i></li> <li>• <i>design and realization of an artificial dune and its ecosystem</i></li> <li>• <i>vulnerability and risk assessment - gap awareness</i></li> <li>• <i>cost-benefit analyse of the artificial dunal system for promoting its replication</i></li> <li>• <i>Organization of specific participatory events with the municipality authorities.</i></li> </ul> |
| 2 | <ul style="list-style-type: none"> <li>• <i>stakeholder engagement workshop around M54 for presenting project results</i></li> <li>• <i>Tidal floods restoration in Txiugudi, zostera nottei plantation/growth</i></li> <li>• <i>realisation of a monitoring system and an ICT resilience data management platform</i></li> <li>• <i>funding opportunities identification</i></li> <li>• <i>impact analysis of demonstrated solutions for each stakeholder category</i></li> <li>• <i>Creation of policy participation events with hotels and touristic associations as well as bathing establishment</i></li> </ul>   |
| 3 | <ul style="list-style-type: none"> <li>• <i>XR visualization of coastal flooding events to support awareness raising</i></li> <li>• <i>participation to relevant local events for raising awareness on the demonstration</i></li> <li>• <i>2 workshops to educate and raise awareness of general public</i></li> <li>• <i>training of local administration services to the use of ocean monitoring and forecasting systems</i></li> <li>• <i>social vulnerable groups identification and engagement strategy</i></li> <li>• <i>modelling of coastal dynamics and structures, both leveraging on experimental and numerical models</i></li> <li>• <i>Assess local impact of CC on coastal activities</i></li> </ul>   |
| 4 | <ul style="list-style-type: none"> <li>• <i>capacity building initiatives with relevant general public (citizens association, schools...)</i></li> <li>• <i>Stakeholders mapping + CC resilience initiatives mapping - Collaboration opportunities (gaps,</i></li> </ul>   |

*overlapping, synergies...)*

- *video monitoring stations deployment, EWS implementation coastal defence survey*
- *high resolution hazard assessment at Txingudi with different adaptation planning local monitoring*
- *regional monitoring programme: Copernicus, hydrodynamic campaigns, bathymetric*
- *Assess local impact of CC on coastal activities*
- *strategic planning of the basque adaptation mission*
- *policy & governance integration of adaptation measures into planning development instruments (master plans, Hendaya, Hondarribi)*
- *policy & governance criteria for coherent planning in the cross-border area (FR/ES) and how to mainstream in planning instruments and decision making*
- *include real time monitoring system and Ews into decision making procedure*

**Table 39.** Challenge Suite 1. Actions by Core pillars.

SOCIAL	ENVIRONMENTAL
<ul style="list-style-type: none"> <li>• <i>XR visualization of coastal flooding events to support awareness raising</i></li> <li>• <i>capacity building initiatives with relevant general public (citizens association, schools,)</i></li> <li>• <i>stakeholder engagement workshop around M54 for presenting project results</i></li> <li>• <i>stakeholder engagement workshop in the first 12 months, for sharing project objectives and acquire requirements, user needs, etc.</i></li> <li>• <i>participation to relevant local events for raising awareness on the demonstration</i></li> <li>• <i>marine life monitoring app</i></li> <li>• <i>2 workshops to educate and raise awareness of general public</i></li> <li>• <i>Azorean footprint app</i></li> <li>• <i>training of local administration services to the use of ocean monitoring and forecasting systems</i></li> <li>• <i>Social vulnerable groups identification and engagement strategy</i></li> <li>• <i>Stakeholders mapping + CC resilience initiatives mapping - Collaboration oportunities (gaps, overlapping, synergies...)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Tidal floods restoration in Txingudi, zostera nottei plantation/growth</i></li> <li>• <i>Restore degraded areas dedicated to agriculture or other uses that were originally marshes</i></li> <li>• <i>recover the estimate dynamics and the state of the associated ecosystems</i></li> <li>• <i>video monitoring stations deployment, EWS implementation coastal defence survey</i></li> <li>• <i>high resolution hazard assessment at Txingudi with different adaptation planning local monitoring</i></li> <li>• <i>regional monitoring programme: Copernicus, hydrodynamic campaigns, bathymetric</i></li> <li>• <i>interactive digital coastal vulnerability map for Azores islands</i></li> <li>• <i>realisation of a monitoring system and an ICT resilience data management platform</i></li> <li>• <i>design and realization of an artificial dune and its ecosystem</i></li> <li>• <i>vulnerability and risk assessment - gap awareness</i></li> <li>• <i>modelling of coastal dynamics and structures, both leveraging on experimental and numerical models</i></li> </ul>
ECONOMIC	GOVERNANCE
<ul style="list-style-type: none"> <li>• <i>Assess local impact of CC on coastal activities</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>strategic planning of the basque adaptation mission</i></li> </ul>

<ul style="list-style-type: none"> <li>• <i>strategic planning of the basque adaptation mission</i></li> <li>• <i>funding opportunities identification</i></li> <li>• <i>cost-benefit analyse of the artificial dunal system for promoting its replication</i></li> <li>• <i>impact analysis of demonstrated solutions for each stakeholder category</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>policy &amp; governance integration of adaptation measures into planning development instruments (master plans, Hendaya, Hondarribi)</i></li> <li>• <i>policy &amp; governance criteria for coherent planning in the cross-border area (FR/ES) and how to mainstream in planning instruments and decision making</i></li> <li>• <i>include real time monitoring system and Ews into decision making procedure</i></li> <li>• <i>Creation of policy participation events with hotels and touristic associations as well as bathing establishment</i></li> <li>• <i>Organization of specific participatory events with the municipality authorities.</i></li> </ul>
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**Table 40.** Challenge Suite 1. Actions by Areas.

### 6.3.2. Challenge suite 2

(1) Bridging the science-stakeholder-policy gap via innovative evidence-based digital tools (2) Raising citizens' awareness of climate issues, adaptation solutions, & potential trade-offs (3) Improving the use of existing data via fusion of heterogeneous data sources & advanced analytics to support decision-making

1	<ul style="list-style-type: none"> <li>• <i>Involving business in spatial design and green criteria for urban development</i></li> <li>• <i>Climate resilience logistics centre development</i></li> <li>• <i>Improve policy integration</i></li> <li>• <i>Cooperation across admin. Boundaries</i></li> <li>• <i>Increasing the capacity and expertise of city administration to resilient urban planning</i></li> <li>• <i>Involving national authority responsible for green transition</i></li> <li>• <i>Climate resilient planning guidelines</i></li> </ul>
2	<ul style="list-style-type: none"> <li>• <i>Psychosocial learning activities</i></li> <li>• <i>Social resilience</i></li> <li>• <i>AR &amp; VR</i></li> <li>• <i>The voice of young generation</i></li> <li>• <i>Climate events and raising awareness campaigns</i></li> <li>• <i>Modelling social impact of green space</i></li> <li>• <i>Social Value/valuation of green space</i></li> <li>• <i>Participatory workshop</i></li> <li>• <i>Social value overlap W/ adaptation value</i></li> </ul>

	<ul style="list-style-type: none"> <li>• <i>Climate change awareness adaptation</i></li> </ul>
3	<ul style="list-style-type: none"> <li>• <i>Data-driven UMI. Mapping and analysis</i></li> <li>• <i>Business model for multifunctional coastal protection</i></li> <li>• <i>3D modelling / digital tool business case</i></li> <li>• <i>Predictive modelling</i></li> <li>• <i>Promote AR&amp;VR for decision making</i></li> <li>• <i>Including UHI and landslide survey into master planning</i></li> </ul>

**Table 41.** Challenge Suite 2. Actions by Core pillars.

SOCIAL	ENVIRONMENTAL
<ul style="list-style-type: none"> <li>• <i>Psychosocial learning activities</i></li> <li>• <i>Social resilience</i></li> <li>• <i>AR &amp; VR</i></li> <li>• <i>The voice of young generation</i></li> <li>• <i>Climate events and raising awareness campaigns</i></li> <li>• <i>Modelling social impact of green space</i></li> <li>• <i>Social Value/valuation of green space</i></li> <li>• <i>Participatory workshop</i></li> <li>• <i>Social value overlap W/ adaptation value</i></li> <li>• <i>Data-driven UMI. Mapping and analysis</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Highlight benefits of strandparken</i></li> <li>• <i>Illustration of future risks with VR and AR</i></li> <li>• <i>Launching the green necklace of Burgas</i></li> <li>• <i>Increasing the capacity for early flood warning and prevention</i></li> <li>• <i>NBS mitigation solutions</i></li> <li>• <i>Landslide analysis</i></li> <li>• <i>UHI modelling</i></li> <li>• <i>Landslide modelling</i></li> <li>• <i>Ecosystem services preservation</i></li> </ul>
ECONOMIC	GOVERNANCE
<ul style="list-style-type: none"> <li>• <i>Business model for multifunctional coastal protection</i></li> <li>• <i>3D modelling / digital tool business case</i></li> <li>• <i>Involving business in spatial design and green criteria for urban development</i></li> <li>• <i>Climate resilience logistics centre development</i></li> <li>• <i>Predictive modelling</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Promote AR&amp;VR for decision making</i></li> <li>• <i>Improve policy integration</i></li> <li>• <i>Cooperation across admin. Boundaries</i></li> <li>• <i>Increasing the capacity and expertise of city administration to resilient urban planning</i></li> <li>• <i>Involving national authority responsible for green transition</i></li> <li>• <i>Climate resilient planning guidelines</i></li> <li>• <i>Including UHI and landslide survey into master planning</i></li> <li>• <i>Climate change awareness adaptation</i></li> </ul>

**Table 42.** Challenge Suite 2. Actions by Core Areas.

### 6.3.3. Challenge suite 3

(1) Green Social Business Models (GSBMs) for sustainable socioeconomic renewal, largely focused on primary industries (2) Community engagement in regional climate resilience-building, including sustainable resource use (3) Resource resilience strategy development supported by monitoring & modelling

- |   |   |
|---|---|
| 1 | <ul style="list-style-type: none"> <li>• <i>communicating to farmers, packers and cooperatives for best environmental practices</i></li> <li>• <i>empowerment of local women to access markets for their local products</i></li> <li>• <i>Social community engagement to determine action plan for sustainable energy systems</i></li> <li>• <i>inform farmers, packers and co-operatives zero polluting processing</i></li> <li>• <i>Elaboration of procedures to use CO2 in GH to increase crop production</i></li> <li>• <i>use of CO2 from solid fuels heaters to increase GH production</i></li> <li>• <i>biofilter for filtering combustion emissions for solid fuel heaters of the GH</i></li> <li>• <i>creation of recipes for composting local waste</i></li> <li>• <i>exploit geopark as centre of economic activities</i></li> <li>• <i>Derive sustainable green business model for EU company/cooperative to support administration for transport issues.</i></li> <li>• <i>creation and development of GSBM (Green societal business models) for rural areas with rural women and young people as target groups</i></li> <li>• <i>promotion of multisectoral activities, cooperatives, agriculture, wastes management, livestock</i></li> <li>• <i>co-creation of menus with more green options and less food waste</i></li> <li>• <i>Develop standardised workflows + processes for (intra) regional issues</i></li> <li>• <i>Development of climate neutral and regenerative tourism strategy</i></li> </ul>   |
| 2 | <ul style="list-style-type: none"> <li>• <i>citizen empowerment through community education in climate neutral and regenerative tourism. Using Sitia UNESCO as part of outdoor classroom</i></li> <li>• <i>Support vulnerable groups. Highschool children/teachers/parents by educating on "how to prepare" for climate change. Educating future citizens on climate change.</i></li> <li>• <i>communicating to farmers, packers and cooperatives for best environmental practices</i></li> <li>• <i>Involvement of local actions groups in the identification of the needs and the definition of governance and policy actions.</i></li> <li>• <i>community understanding of opportunities with socio-economic developments (energy and transport)</i></li> <li>• <i>inform farmers, packers and co-operatives zero polluting processing</i></li> <li>• <i>logistic and technical development of a plant to feed the GH heaters with local biomass waste</i></li> <li>• <i>exploit geopark as centre of economic activities</i></li> <li>• <i>finance models targeting to increase market, through geopark as a centre of tourism</i></li> <li>• <i>design and create GSBM for food processing</i></li> <li>• <i>creation and development of GSBM (Green societal business models) for rural areas with rural women and young people as target groups</i></li> <li>• <i>Sensitize women's cooperatives for promoting local products through specialised seminars</i></li> <li>• <i>Use of regional and local channels to establish long-term relationships among local businesses</i></li> <li>• <i>create and implement innovative educational programmes linked to GSBM</i></li> </ul> |

	<ul style="list-style-type: none"> <li>• <i>further the implementation and replication of GSBM through integral cooperatives and entrepreneurial engagement</i></li> </ul>
3	<ul style="list-style-type: none"> <li>• <i>citizen empowerment through community education in climate neutral and regenerative tourism. Using Sitia UNESCO as part of outdoor classroom</i></li> <li>• <i>Involvement of local actions groups in the identification of the needs and the definition of governance and policy actions.</i></li> <li>• <i>creation of round tables among local actors to create the GSBM</i></li> <li>• <i>Improve liveability of region, economic growth through optimisation of transport and energy</i></li> <li>• <i>Zero energy hotel</i></li> <li>• <i>E-bike centres and routes</i></li> <li>• <i>climate change risk assessment of Troodos region</i></li> <li>• <i>systematically assess climate change risk vulnerabilities of region, focus impacts to existing planned transport</i></li> <li>• <i>monitoring, modelling and impact assessment (to determine progress towards climate resilience, change to liveability)</i></li> <li>• <i>enhance long-term regional sustainability and reduce emissions --&gt; update energy and transport sectors</i></li> <li>• <i>exploit geopark as centre of economic activities</i></li> <li>• <i>finance models targeting to increase market, through geopark as a centre of tourism</i></li> <li>• <i>Sensitize women's cooperatives for promoting local products through specialised seminars</i></li> <li>• <i>prepare mechanisms to make more agile procedures, location selection, permissions and licences for GSBM</i></li> </ul>

**Table 43.** Challenge Suite 3. Actions by Core pillars.

SOCIAL	ENVIRONMENTAL
<ul style="list-style-type: none"> <li>• <i>citizen empowerment through community education in climate neutral and regenerative tourism. Using Sitia UNESCO as part of outdoor classroom</i></li> <li>• <i>Support vulnerable groups. Highschool children/teachers/parents by educating on "how to prepare" for climate change. Educating future citizens on climate change.</i></li> <li>• <i>communicating to farmers, packers and cooperatives for best environmental practices</i></li> <li>• <i>Involvement of local actions groups in the identification of the needs and the definition of governance and policy actions.</i></li> <li>• <i>creation of round tables among local actors to create the GSBM</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Zero energy hotel</i></li> <li>• <i>E-bike centres and routes</i></li> <li>• <i>inform farmers, packers and co-operatives zero polluting processing</i></li> <li>• <i>climate change risk assessment of Troodos region</i></li> <li>• <i>Elaboration of procedures to use CO2 in Gh to increase crop production</i></li> <li>• <i>production of organic fertilizer at local levels by collaborative model</i></li> <li>• <i>use of CO2 from solid fuels heaters to increase GH production</i></li> <li>• <i>biofilter for filtering combustion emissions for solid fuel heaters of the GH</i></li> </ul>

<ul style="list-style-type: none"> <li>• <i>empowerment of local women to access markets for their local products</i></li> <li>• <i>community understanding of opportunities with socio-economic developments (energy and transport)</i></li> <li>• <i>Social community engagement to determine action plan for sustainable energy systems</i></li> <li>• <i>Improve liveability of region, economic growth through optimisation of transport and energy</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>creation of recipes for composting local waste</i></li> <li>• <i>logistic and technical development of a plant to feed the GH heaters with local biomass waste</i></li> <li>• <i>systematically assess climate change risk vulnerabilities of region, focus impacts to existing planned transport</i></li> <li>• <i>monitoring, modelling and impact assessment (to determine progress towards climate resilience, change to liveability)</i></li> <li>• <i>enhance long-term regional sustainability and reduce emissions --&gt; update energy and transport sectors</i></li> </ul>
<b>ECONOMIC</b>	<b>GOVERNANCE</b>
<ul style="list-style-type: none"> <li>• <i>exploit geopark as centre of economic activities</i></li> <li>• <i>finance models targeting to increase market, through geopark as a centre of tourism</i></li> <li>• <i>Derive sustainable green business model for EU company/cooperative to support administration for transport issues.</i></li> <li>• <i>design and create GSBM for food processing</i></li> <li>• <i>creation and development of GSBM (Green societal business models) for rural areas with rural women and young people as target groups</i></li> <li>• <i>promotion of multisectoral activities, cooperatives, agriculture, wastes management, livestock</i></li> <li>• <i>co-creation of menus with more green options and less food waste</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Sensitize women's cooperatives for promoting local products through specialised seminars</i></li> <li>• <i>Develop standardised workflows + processes for (intra) regional issues</i></li> <li>• <i>Use of regional and local channels to establish long-term relationships among local businesses</i></li> <li>• <i>prepare mechanisms to make more agile procedures, location selection, permissions and licences for GSBM</i></li> <li>• <i>create and implement innovative educational programmes linked to GSBM</i></li> <li>• <i>further the implementation and replication of GSBM through integral cooperatives and entrepreneurial engagement</i></li> <li>• <i>Development of climate neutral and regenerative tourism strategy</i></li> </ul>

**Table 44.** Challenge Suite 3. Actions by Areas.