CLIMAAX
climate ready regions

Deliverable Phase 3 – Climate risk management

Advanced Risk assessment for ClimAte resilience Debates, Innovations and Actions in Dobrich (ARCADIA)

Dobrich Municipality, Bulgaria

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HORIZON-MISS-2021-CLIMA-02-01 - Development of climate change risk assessments in European regions and communities based on a transparent and harmonised Climate Risk Assessment approach

Document Information

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Brief Description	Phase 3 of the CLIMAAX project ARCADIA of Dobrich municipality focuses on identification of strategic options for climate adaptation based on the CRA in phase 2 and on the comprehensive review of the local legal, financial, and administrative framework. The third phase of the project has explored and discussed with the key stakeholders the results of the multi-risk analysis carried out in Phases 1 and 2 to identify potential adaptation options and relevant actions at the municipal scale to address the local risks and vulnerabilities in Dobrich. These adaptation options are set within the legal and administrative framework and capacities of the municipality, e.g. through the review and proposals for revision of municipal disaster risk reduction program and other municipal strategic documents.
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Abbreviations and acronyms

Abbreviation / acronym	Description
ARCADIA	Advanced Risk assessment for ClimAte resilience Debates, Innovations and Actions in Dobrich
CRA	Climate Risk Assessment
CRM	Climate Risk Management
DRBD	Danube River Basin Directorate
DRRP	Disaster Risk Reduction Program
MIDP	Municipal Integrated Development Plan
NIMH	National Institute of Meteorology and Hydrology
NSI	National Statistical Institute
RHI	Regional Health Inspectorate
RIEW	Regional Inspectorate of Environment and Water
RDFSPP	Regional Directorate Fire Safety and Population Protection

Executive summary

This deliverable presents Phase 3 of the ARCADIA project implemented by Dobrich Municipality under the CLIMAAX framework. It was developed to translate the climate risk assessment results from Phases 1 and 2 into practical climate risk management options, adaptation measures and planning recommendations for the municipality. The deliverable addresses the need to move from evidence-based risk understanding towards concrete actions that can be integrated into local policies, municipal programmes, investment planning and disaster risk reduction.

The report builds on the previous project phases. Phase 1 established the first structured climate risk assessment for Dobrich Municipality, with a specific focus on river flooding along the Dobrichka River. Phase 2 expanded the assessment into a multi-hazard risk profile and prioritised the main climate risks affecting the municipality. Phase 3 uses these findings, together with the review of the legal, administrative and financial framework, to identify feasible climate risk management objectives and measures.

The main actions undertaken during this third phase included the consolidation of the key risk assessment results, the identification of priority climate risks for management action, the review of existing policy and implementation mechanisms, the mapping of relevant actors and responsibilities, and the formulation of potential adaptation measures. Particular attention was given to the way in which climate risk management can be embedded in existing municipal instruments, including the Municipal Integrated Development Plan, the Disaster Risk Reduction Programme, the Disaster Protection Plan, environmental and energy programmes, waste management policies, capital investment planning and project financing mechanisms.

The key result of this phase is a structured local profile for climate risk management in Dobrich Municipality. The assessment confirms that heatwaves and heavy rainfall/extreme precipitation require the highest level of attention, as they combine high or critical severity, immediate urgency and limited or medium resilience capacity. Windstorms are also identified as a high-priority risk because of their recurrent impacts, city-wide exposure and compound effects when combined with heavy rainfall. River flooding and snowfall/blizzards remain relevant risks, although their priority is assessed as medium due to their more episodic character, more spatially specific impacts and relatively stronger existing operational capacity.

The deliverable also identifies the main implementation conditions for effective climate risk management. Dobrich Municipality has an existing institutional and programmatic basis, including administrative capacity in infrastructure, environment, strategic development, project management, emergency response and disaster protection. However, climate risk is still distributed across several documents, units and procedures. A more integrated approach is therefore needed, based on formal coordination, a municipal climate risk register, better use of spatial data, climate-sensitive budgeting and systematic monitoring of adaptation measures.

The report highlights that climate risk management should not be limited to emergency response. It should become a regular part of urban development, infrastructure maintenance, public health protection, green system management, social support, energy planning, public procurement and investment prioritisation. This is particularly important for vulnerable groups, including elderly

people, children, people with chronic diseases, socially disadvantaged households, residents in exposed areas and small businesses affected by service disruptions.

The main conclusion of Phase 3 is that Dobrich Municipality has a solid starting point for improving climate resilience, but this capacity needs to be upgraded from separate sectoral actions into a coordinated municipal system for climate risk management. The CLIMAAX results provide an evidence base for this transition. They can support better prioritisation of investments, more targeted adaptation measures, stronger institutional coordination and improved access to external funding.

The key take-away message is that climate adaptation in Dobrich Municipality should be treated as a cross-cutting management priority. The most urgent actions should focus on heat stress, extreme precipitation, drainage capacity, green and blue-green infrastructure, early warning, public preparedness and protection of vulnerable groups. At the same time, continued monitoring and maintenance are required for river flooding, wind-related risks and winter extremes. The overall value of Phase 3 lies in connecting climate risk assessment with practical governance, financing and implementation pathways.

1 Introduction

Phase 3 of the ARCADIA project moves Dobrich Municipality from climate risk assessment to climate risk management. Phase 1 established a structured assessment focused on flooding along the Dobrichka River, while Phase 2 developed a prioritised multi-hazard profile. Phase 3 uses those results to define locally relevant objectives, measures, institutional arrangements and pathways for integrating climate risk into municipal planning and decision-making.

Heatwaves and heavy rainfall/extreme precipitation are the highest-priority risks because of their severity, urgency and limited or medium resilience capacity. Windstorms are a high-priority risk, while river flooding and snowfall/blizzards remain medium-priority risks requiring continued monitoring and preparedness. The report therefore combines this risk hierarchy with the review of Dobrich Municipality's legal, administrative and financial framework and its existing planning, investment, disaster protection, environmental, energy, health and social instruments. It put forward policy measures reflected in strategic documents like the municipal disaster risk reduction program.

1.1 Main objectives of the project

The main objective of the project is to transform the evidence from Phases 1 and 2 into feasible climate risk management options and planning recommendations for Dobrich Municipality. More specifically, Phase 3 aims to:

- consolidate the Climate Risk Assessment findings and define municipal CRM priorities;
- identify adaptation and risk-reduction measures for the priority climate hazards;
- integrate the measures into existing policies, programmes and operational procedures;
- support future updates of disaster risk reduction, disaster protection, spatial, infrastructure, environmental, energy and investment documents;
- strengthen the link between climate evidence, governance, budgeting and practical decisions;
- define the data, infrastructure, coordination, engagement, finance and leadership needed for effective CRM;
- promote a preventive, long-term and equity-sensitive approach rather than reliance on reactive emergency response.

The objectives treat climate risk as a cross-cutting municipal function. They combine short-, medium- and long-term structural, nature-based, social and governance options, prioritise measures that can be embedded in existing processes, and explicitly consider elderly people, children, people with chronic diseases or disabilities, socially disadvantaged households, residents of exposed areas and small businesses with limited coping capacity.

1.2. Project team

The interdisciplinary team combines municipal, scientific, financial, legal and technical expertise: Pavel Pavlov, Deputy Mayor, provides overall project management and control; Petia Dimitrova manages financial aspects and reporting; Prof. Nelly Hristova of the Climate, Atmosphere and Water Research Institute at the Bulgarian Academy of Sciences provides climate-risk expertise; Miroslava

Raynova coordinates data, communication and external stakeholders; and D and D Consulting Ltd. provides contracted technical, legal and administrative support. Cooperation with competent authorities and local stakeholders grounds the recommendations in municipal responsibilities and capacity.

1.3. Outline of the document's structure

The report follows the CLIMAAX Phase 3 template. Section 2 presents the local CRM profile; Section 3 defines objectives, enabling conditions, measures and integration pathways; Section 4 evaluates usability and lessons learned; Section 5 gives conclusions; Section 6 reports progress against outputs and milestones; Section 7 lists supporting documentation; and Section 8 provides references. Together, these sections connect the risk assessment with municipal planning, investment, coordination and future implementation.

2. Local profile

2.1. Summary of Key Risk Assessment results

Phase 3 starts from the results of the Climate Risk Assessment completed in Phases 1 and 2. Phase 1 provided an initial, science-based assessment of river flood risk along the Dobrichka River, including flood depth, exposure of buildings and population, possible damages, and evacuation needs under different return periods. Phase 2 broadened the assessment into a multi-hazard local risk profile and applied the CLIMAAX Key Risk Assessment logic to evaluate severity, urgency and resilience capacity. This creates the evidence base for moving from risk assessment to climate risk management (CRM).

The Key Risk Assessment identifies two very high-priority risks for Dobrich Municipality: heatwaves and heavy rainfall/extreme precipitation. Windstorms and strong winds are assessed as high priority, while river flooding and snowfall/blizzards are assessed as medium priority. The prioritisation does not mean that medium-priority risks are negligible. Rather, it means that for these risks Dobrich currently has stronger operational capacity, or that impacts are more episodic and spatially concentrated. The high and very high-priority risks require more systematic, near-term and cross-sectoral adaptation measures.

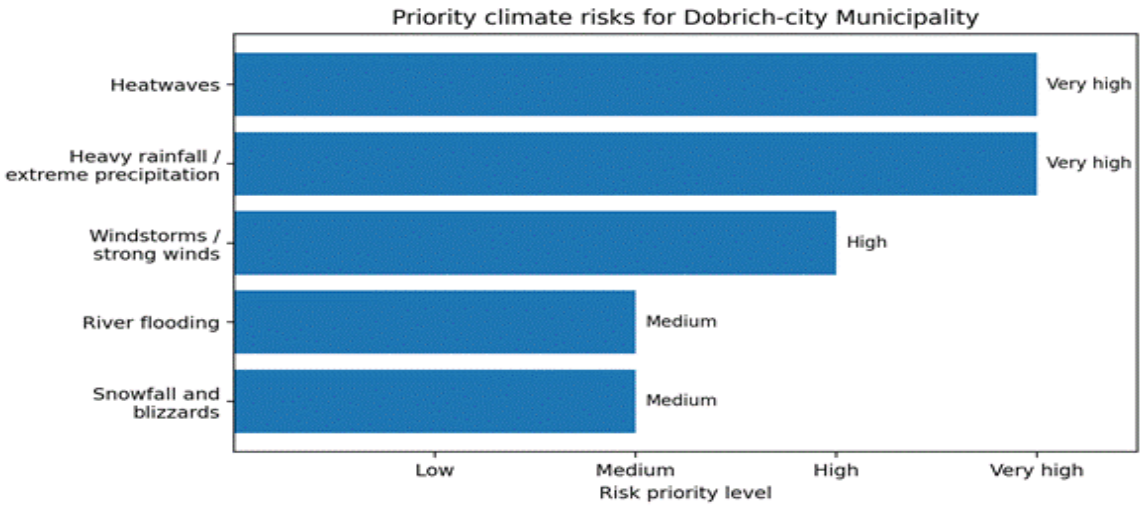


Figure 2.1 Priority climate risks for Dobrich Municipality. Source: elaborated based on CLIMAAX Phase 2 Key Risk Assessment results.

The priority profile confirms the transition from a hazard-specific assessment towards an integrated climate risk management approach. Flood risk remains important because of the Dobrichka River corridor, low-lying urban zones, and past events caused by torrential rainfall. However, the Phase 2 results show that the most urgent management challenge is the combined pressure of increasing heat, more intense short-duration rainfall, and frequent wind-related disruptions. These risks affect the same urban systems: public health, drainage, roads, electricity, emergency response, schools, health facilities, social services, businesses and residential buildings.

Table 2.1 Summary of priority climate risks, resilience capacity and stakeholder engagement.

Priority climate risk	**Resilience capacity**	**Description of resilience capacity**	**Stakeholders, experts and priority groups involved/modality of engagement**
Heatwaves	Medium	Basic capacity exists through health and social services, emergency medical response and municipal support for vulnerable groups. However, heat-specific action plans, local heat-warning protocols, cooling centres, shaded routes, and systematic outreach to elderly and socially isolated people are not yet fully institutionalised. The risk is city-wide and socially differentiated.	Municipal administration, Regional Health Inspectorate, healthcare providers, social services, schools, elderly residents, children, people with chronic diseases. Engagement through stakeholder survey, expert consultations and planned Phase 3 discussions on adaptation options.
Heavy rainfall/ extreme precipitation	Low–Medium	Stormwater drainage, emergency response and periodic maintenance exist, but the system is vulnerable due to ageing or undersized drainage infrastructure, high impervious surface cover, limited retention areas and insufficient blue-green infrastructure. The risk is highly sensitive to delayed action.	Infrastructure and Environment units, Water Supply and Sanitation operator, Fire Safety and Population Protection, road maintenance services, businesses, residents in low-lying areas. Engagement through survey, municipal consultations and review of disaster and infrastructure documents.
Windstorms/ strong winds	Medium	Emergency and maintenance services have operational experience with fallen trees, roof damage, blocked streets and power interruptions. Preventive measures are more limited, especially systematic tree-risk management, reduction of overhead utility exposure and building-level resilience checks.	Municipal maintenance and landscaping units, utility operators, Fire Safety and Population Protection, transport operators, schools, businesses and residents. Engagement through stakeholder survey and risk discussion in Phase 2.

Priority climate risk	Resilience capacity	Description of resilience capacity	Stakeholders, experts and priority groups involved/modality of engagement
River flooding	Substantial	The regulated Dobrichka River channel, known flood-risk areas, emergency procedures and awareness of river-related flood risk provide a stronger baseline capacity. Capacity depends on continued maintenance, drainage management, warning systems and avoidance of new exposure in flood-prone locations.	Dobrich Municipality, Danube River Basin Directorate, Fire Safety and Population Protection, Water Supply and Sanitation, residents and SMEs near the river corridor and the Northern industrial zone. Engagement through Phase 1 flood modelling, Phase 2 multi-risk assessment and stakeholder discussions.
Snowfall and blizzards	Substantial	Winter risk management is relatively well-established through snow removal, road maintenance, emergency response and coordination with utility providers. Capacity is adequate for episodic events, but still requires preparedness for compound winter events with wind, ice and power disruption.	Municipal winter maintenance units, road authorities, utility operators, emergency services, health and social services, commuters and vulnerable residents. Engagement through survey and review of disaster preparedness mechanisms.

Overall, Dobrich has a functional baseline capacity for emergency response, winter maintenance and flood preparedness. The capacity gap is more pronounced for systemic and escalating risks: extreme heat and extreme precipitation. These risks require a shift from event-based response to preventive adaptation, spatial targeting, capital investment, communication, and monitoring.

2.2. Key implementation mechanisms and policy context for CRM

Climate risk management in Dobrich is shaped by EU, national and municipal frameworks. The legal, administrative and financial review found a sound institutional basis, but adaptation remains distributed across separate plans, programmes and units. Phase 3 therefore connects CLIMAAX evidence to existing planning, budgeting and implementation mechanisms instead of proposing a parallel system. Figure 2.2 outlines the pathway for integrating CLIMAAX results into municipal climate risk management while Table 2.2 presents the key implementation mechanisms and policy context for climate risk management.

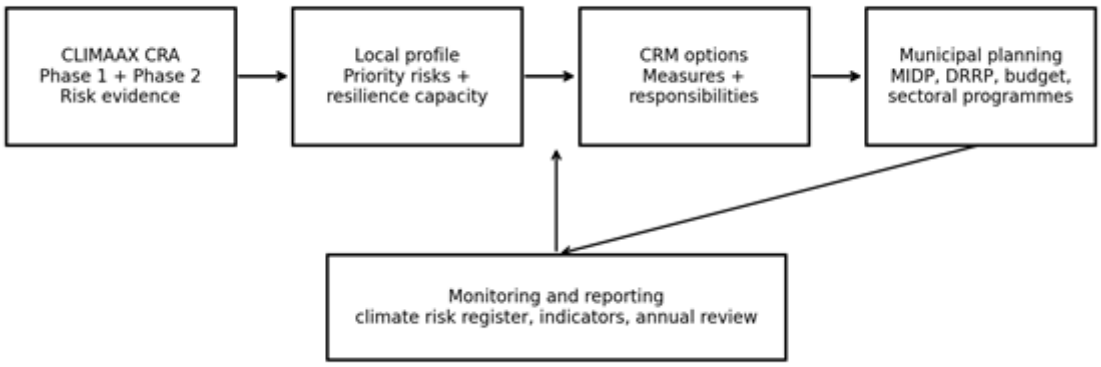


Figure 2.2 Pathway for integrating CLIMAAX results into municipal climate risk management.

Table 2.2 Key implementation mechanisms and policy context for climate risk management.

Policy instrument /mechanism	**CRM relevance for Dobrich**	**Recommended use in Phase 3**
Municipal Integrated Development Plan 2021–2027	Main strategic framework for urban development, infrastructure, public services and investment priorities. It can host climate-resilience priorities and spatially targeted measures.	Use CLIMAAX outputs to propose an annex or update to the implementation programme with priority CRM measures, vulnerable zones and project ideas.
Disaster Risk Reduction Programme and Municipal Disaster Protection Plan	Primary local instruments for prevention, preparedness, response and recovery from floods, storms, winter extremes, fires and other hazards.	Update the post-2025 DRR framework with a dedicated climate-risk section, including heatwaves and extreme precipitation, not only classic emergency response hazards.
Spatial planning, zoning and construction control	Defines where and how development occurs, and can reduce new exposure to flood, heat and wind risk.	Introduce climate proofing checks for municipal investments and, where possible, avoid increasing exposure in low-lying flood-prone or heat-vulnerable areas.
Stormwater, drainage and river maintenance systems	Critical for managing heavy rainfall, flash flooding and river-related flood risk.	Prioritise inspection, cleaning, drainage upgrades, permeable surfaces, retention and blue-green infrastructure in critical points identified by CLIMAAX.

Policy instrument /mechanism	CRM relevance for Dobrich	Recommended use in Phase 3
Green system, parks and public space management	Key nature-based adaptation asset for cooling, rainwater retention, air quality, biodiversity and social resilience.	Prioritise drought- and heat-resistant vegetation, shaded routes, rain gardens, soil improvement and maintenance of permeable surfaces.
Waste management and cleanliness plan-account	Waste and cleanliness activities affect drainage blockage, sanitary risk during floods and heat, and circular use of biodegradable waste.	Link street cleaning, drain inspection, waste prevention and compost use to climate-risk prevention. Use biowaste composting as a co-benefit measure for green infrastructure.
Energy efficiency and renewable energy programmes	Important for reducing emissions, protecting public buildings, lowering cooling demand and improving energy security during extreme events.	Include adaptation co-benefits in energy projects: passive cooling, insulation, shading, emergency energy supply for critical services.
Municipal budget, capital programme and external funding	Determines whether risk assessment is translated into implementation.	Introduce climate markers for municipal investments and develop a project portfolio for EU, national and other funding sources.
Monitoring and reporting system	Needed to track progress, damages avoided, exposure reduction and institutional learning.	Create a climate risk register and annual report to the Municipal Council with indicators, implemented measures and remaining gaps.

Several synergies should be actively used. Green infrastructure can simultaneously reduce heat stress, improve stormwater retention and support public health. Waste and biowaste policies can contribute to soil improvement and urban vegetation. Energy efficiency projects can reduce heat stress in public buildings. Disaster preparedness measures can improve both response to floods and response to windstorms, snow, ice and fires. The main tension is that existing municipal responsibilities are sectoral, while climate risks are cross-sectoral. This makes coordination, data sharing and joint budgeting essential.

2.3. Key actors and systems for CRM

Stakeholder engagement combined a 46-response survey, consultations and meetings, the multi-stakeholder workshop of 28 January 2026 with 28 participants and the final conference of 24 June 2026 with 38 participants from the municipality, regional authorities, civil society, youth and business. The process validated the risk priorities and adaptation options and focused attention on future updates of the municipal disaster risk reduction programme and other strategic documents.

Strategic responsibility lies with the Municipal Council, Mayor and municipal leadership, while implementation is distributed among municipal departments, emergency services, infrastructure and utility operators, health and environmental authorities, schools, businesses and community organisations. Table 2.3 maps these roles and highlights the need for a formal coordination mechanism.

Table 2.3 Key actors and systems for climate risk management.

Key actor/ system	**Role and responsibility**	**Motivation and needs**	**Opportunities for active involvement in CRM**	**Barriers/ constraints**	**Type of engagement**
Municipal Council	Adopts strategies, programmes, budget and local regulations; provides political oversight.	Needs clear evidence, costs, benefits and prioritisation.	Can integrate CRM into MIDP, DRR program, capital programme and annual reporting.	Budget limits; competing political and investment priorities.	Decision-making, approval of documents, public accountability.
Mayor and municipal executive leadership	Coordinates municipal administration, emergency response and implementation of adopted measures.	Needs actionable, prioritised and legally feasible measures.	Can establish a Climate Risk and Adaptation working group and assign responsibilities.	Cross-sectoral coordination burden; limited human resources.	Executive coordination, orders, interdepartmental management.
Infrastructure and Environment/ Spatial Planning units	Manage infrastructure, public works, environmental protection, green system and technical measures.	Need local data, GIS layers, technical designs and investment resources.	Can implement drainage, green-blue infrastructure, river maintenance and urban heat measures.	Ageing infrastructure, limited data and funding.	Technical consultation, implementation, monitoring.
Strategic Development, Projects and Programmes unit	Prepares, coordinates and reports externally funded projects.	Needs a prioritised project pipeline and costed adaptation options.	Can convert CLIMAAX outputs into EU/national project proposals and partnerships.	Competition for funding; administrative workload and co-financing needs.	Project development, funding applications, reporting.

Key actor/ system	Role and responsibility	Motivation and needs	Opportunities for active involvement in CRM	Barriers/ constraints	Type of engagement
Finance and budget units	Plan municipal resources, capital expenditure and co-financing.	Need criteria for climate marking and avoided-damage arguments.	Can introduce climate markers and support preventive investment packages.	Rigid budgets and limited fiscal space.	Budget planning, financial monitoring.
Regional Directorate Fire Safety and Population Protection	Emergency response, rescue, fire management and disaster preparedness.	Needs reliable warnings, access routes, equipment and trained local partners.	Can support preparedness, volunteer training, evacuation and incident response.	Capacity can be strained during compound events.	Operational coordination, exercises, emergency planning.
Danube River Basin Directorate/ water authorities	Flood risk assessment, water management and coordination under water legislation.	Needs municipal data and coordination on Dobrichka River and drainage impacts.	Can support alignment with flood risk management planning and technical recommendations.	Jurisdictional boundaries and data gaps.	Expert consultation, data exchange.
NIMH and scientific experts	Provide meteorological, hydrological and climate data, modelling and expert interpretation.	Need local observations and demand for tailored products.	Can support warning thresholds, climate indicators and future updates.	Data resolution and resource limitations.	Scientific input, technical validation.
Regional Health Inspectorate and health/social services	Public health protection, heat-related risk communication and support for vulnerable groups.	Need protocols for heatwaves and vulnerable population outreach.	Can develop heat-health actions and guidance for schools, care facilities and citizens.	Limited climate-specific public health planning.	Consultations, health-risk communicatio n.
Water Supply and Sanitation operator, electricity and utility providers	Maintain critical systems affected by floods, storms, snow, ice and heat.	Need risk data, investment coordination and emergency access.	Can reduce cascading failures through preventive maintenance and asset resilience.	Infrastructure ageing and investment constraints.	Technical coordination, emergency planning.

Key actor/ system	Role and responsibility	Motivation and needs	Opportunities for active involvement in CRM	Barriers/ constraints	Type of engagement
Businesses, SMEs and industrial operators	Protect assets and continuity of operations; may be located in exposed zones.	Need practical guidance, warning information and incentives for resilience.	Can invest in site-level adaptation and continuity planning.	Limited awareness and willingness to pay for prevention.	Survey, workshops, business consultations.
Civil society, schools and residents	Participate in preparedness, local knowledge, awareness and behavioural change.	Need clear, non-technical communication and inclusive participation	Can improve preparedness, self-protection and acceptance of adaptation measures.	Awareness-preparedness gap; uneven participation of vulnerable groups.	Survey, public meetings, awareness campaigns.

2.4. Lessons learned from past events

Past events show that intense short-duration rainfall can overwhelm sealed surfaces and ageing drainage; compound wind, rain and hail can trigger cascading infrastructure and utility failures; heatwaves disproportionately affect vulnerable residents; and winter extremes can interrupt mobility and essential services. The Phase 2 survey also revealed a preparedness gap: awareness of flood-prone areas was high, but 30.4% of respondents reported being completely unprepared and unfamiliar with evacuation plans. These lessons support a shift from reactive, hazard-by-hazard response to preventive and integrated CRM.

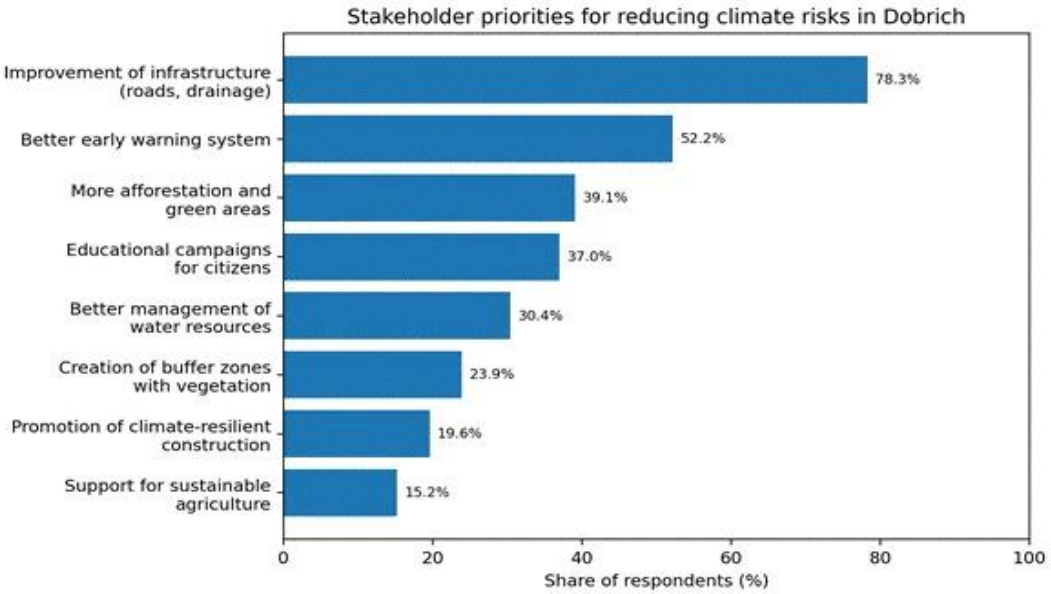


Figure 2.4. Stakeholder priorities for reducing climate risks in Dobrich Municipality.

Source: elaborated based on Phase 2 stakeholder survey results.

Stakeholders prioritised infrastructure improvements (78.3% of respondents), together with early warning, green areas, education and improved water management. This confirms the need for a balanced package of structural, non-structural and nature-based measures.

Table 2.4 Lessons learned from past climate-related events and implications for CRM.

Lesson from past events	Evidence / interpretation for Dobrich	Implication for Phase 3 CRM
Urban flooding is mainly triggered by intense short-duration rainfall.	Events in 2009, 2014 and 2025 demonstrate that torrential rainfall and rapid runoff can overwhelm streets, low-lying areas and drainage points. Flooding is therefore both pluvial and river-related.	Prioritise stormwater management, cleaning of critical drains, permeable surfaces, retention areas, rain gardens and warning thresholds for short-duration rainfall.
The Dobrichka River corridor remains important, but maintenance conditions are decisive.	The regulated river channel reduces ordinary river flood risk, but blockages, vegetation, debris and insufficient drainage capacity can increase local flood impacts during heavy rainfall.	Maintain the riverbed and ravines, identify critical points, avoid new exposure near the corridor and integrate flood scenarios into DRR and spatial planning.
Compound events create cascading failures.	Windstorms accompanied by rainfall or hail can damage roofs, trees and power lines while also blocking streets and disrupting emergency access.	Design measures jointly for wind, rain and infrastructure continuity, including tree-risk management, utility resilience and emergency route clearance.
Heatwaves are a systemic public health risk, not only a comfort issue.	Summer temperatures exceeding 35°C place pressure on elderly residents, children, people with chronic diseases, outdoor workers, social services and health systems.	Develop heat-health protocols, shaded routes, cooling points, targeted communication and building-level cooling measures.
Winter extremes remain operationally relevant even if average winters become milder.	Snow, ice and blizzards cause short-term but significant disruptions to transport, supply chains, electricity and access to medical and social services.	Maintain winter readiness, clarify priority routes, strengthen coordination with utilities and update support mechanisms for vulnerable residents.
Awareness does not automatically mean preparedness.	The Phase 2 survey indicates high awareness of flood-prone areas, but lower familiarity with evacuation and response plans.	Implement practical preparedness campaigns, local instructions, drills and simple communication materials for households, schools and businesses.

Lesson from past events	Evidence / interpretation for Dobrich	Implication for Phase 3 CRM
Reactive response is insufficient for escalating risks.	Past practice has relied heavily on emergency response and sectoral maintenance, while future risks require preventive and adaptive planning.	Use CLIMAAX outputs to move from response to prevention: climate-risk register, climate budgeting, investment pipeline and annual monitoring.

The key local lesson is that climate risk management in Dobrich should not be organised only around individual hazards. The most important management task is to reduce the vulnerability of urban systems that are repeatedly affected by different hazards: drainage and streets, public buildings, power and communication lines, green areas, health and social services, emergency access routes, schools, businesses and vulnerable households. This systemic perspective should guide the CRM objectives and measures developed in Section 3.

3. Climate risk management - Phase 3

Phase 3 translates the Phase 1 and Phase 2 evidence into a practical, measurable and equity-sensitive CRM framework. It prioritises heatwaves and heavy rainfall / extreme precipitation, strengthens prevention for windstorms, and maintains preparedness for river flooding and winter extremes.

The existing Disaster Risk Reduction Programme, Municipal Disaster Protection Plan, MIDP and sectoral programmes provide entry points for action. The remaining task is to connect them through shared objectives, indicators, responsibilities, budgets and monitoring so that climate adaptation becomes part of routine municipal governance rather than a separate project activity.

3.1. CRM objectives

The CRM objectives derive from the priority risks, stakeholder engagement and the legal, administrative and financial review. Primary objectives in Table 3.1.1. directly address the assessed hazards; while the additional objectives in Table 3.1.2. support public health, equity, environmental quality, service continuity, economic resilience and accountable governance across Dobrich's interconnected urban system.

Primary CRM objectives

Table 3.1.1 - Primary CRM objectives and indicators

Primary CRM objective	Relevance for Dobrich Municipality	Examples of assessment indicators
Reduce heat-related health impacts and urban heat exposure	Heatwaves are a city-wide and socially differentiated risk for elderly people, children, people with chronic diseases, outdoor workers and residents of poorly shaded neighbourhoods. Dobrich does not yet have fully institutionalised heat-action protocols, cooling spaces, shaded priority routes or systematic outreach.	Municipal Heat-Health Action Protocol adopted; number of heat hotspots and vulnerable groups mapped; number of cooling points and shaded priority routes; share of priority public buildings with heat-adaptation measures; heat-related emergency calls or hospitalisations, where data are available.
Reduce surface-water flooding and disruption caused by heavy rainfall	Intense short-duration rainfall has repeatedly overwhelmed streets, low-lying areas and drainage points. Ageing or undersized drainage, high impervious-surface cover and limited retention and blue-green infrastructure increase the risk of damage and disruption.	Number of drainage and surface-water hotspots mapped; number or length of priority inlets, collectors, culverts and channels maintained or upgraded; number or area of sustainable drainage and retention measures; number of flooded streets or buildings and service-interruption hours after major rainfall; response and clearance time.
Reduce damage and cascading disruption caused by windstorms and strong winds	Windstorms can cause fallen trees, roof and façade damage, blocked streets and power or communication outages, especially when combined with rain or hail. Preventive tree-risk management, building checks and utility coordination are not yet systematic.	Number of priority trees inspected and preventively managed; number of vulnerable public buildings, roofs, signs and temporary structures assessed; number and duration of wind-related road blockages and utility interruptions; time required to clear priority routes; number of timely public warnings issued.
Reduce flood risk and new exposure along the Dobrichka River corridor	The regulated channel provides substantial protection, but debris and drainage constraints can increase impacts in low-lying areas, particularly the old quarter and Northern industrial zone.	Flood maps updated; riverbed and ravines maintained; obstructions removed; critical assets and SMEs covered by preparedness or site-level protection; new investments screened; event damage recorded.
Maintain resilience to snowfall, blizzards and icing and ensure continuity of essential services	Winter risk management is relatively well established, but compound snow, wind, ice and power disruptions can still affect emergency access, public transport, utility services and access to health and social care. Readiness must therefore be maintained and adapted to changing conditions.	Winter priority-route map updated; share of priority routes cleared within the target time; compliance of winter-maintenance contracts with readiness and response standards; number and duration of critical service interruptions; number of vulnerable residents and health or social service users covered by backup and support protocols.

Additional CRM objectives

In addition to the primary objectives, the following additional objectives are relevant for ensuring that climate risk management contributes to wider municipal development, quality of life and social resilience.

Table 3.1.2. Additional CRM objectives and indicators.

Additional CRM objective	Relevance for Dobrich Municipality	Examples of assessment indicators
Public health protection	Heatwaves, extreme cold, poor air conditions during heat, and disruptions to healthcare access during winter or flood events can affect public health directly. CRM should therefore be linked to local health and social care systems.	Number of health/social institutions included in heat and winter preparedness protocols; number of heat-health messages issued; heat-related hospitalisations or emergency calls, where available; number of vulnerable residents contacted during extreme events.
Social well-being and inclusive urban resilience	The most vulnerable residents are not only physically exposed but may have lower capacity to prepare, respond or recover. These include elderly people, children, people with disabilities, people with chronic illnesses, low-income households, marginalised groups, residents in low-lying or poorly serviced areas, and people dependent on regular social or medical services.	Number of vulnerable groups explicitly considered in plans; number of targeted support measures; number of accessible public shelters/cooling spaces; number of social service users covered by preparedness protocols; share of CRM communication materials available in accessible formats.
Economic resilience and protection of local livelihoods	Floods, storms, heat and winter disruptions can affect SMEs, service providers, industrial zones, public markets, outdoor workers, transport-dependent businesses and municipal contractors. The Northern industrial zone and businesses near flood-prone areas require particular attention.	Number of businesses in exposed areas mapped; number of SMEs reached by preparedness guidance; estimated business interruption days after events; number of business continuity consultations or trainings; damages to commercial/industrial assets, where data is available.
Environmental quality and nature-based adaptation	Green and blue-green infrastructure can reduce heat, improve rainwater retention, reduce dust, support biodiversity, improve public spaces and reduce sanitary risks during extreme rainfall.	Area of green-blue infrastructure installed; number of rain gardens or retention areas; percentage of urban area covered by parks/green spaces; number of new shaded pedestrian or cycling corridors; tree canopy indicators; number of restored or maintained green corridors.

Additional CRM objective	Relevance for Dobrich Municipality	Examples of assessment indicators
Quality and continuity of public services	Climate events affect schools, kindergartens, social services, healthcare access, transport, waste collection, street maintenance and emergency response. CRM should support continuity planning across municipal services.	Number of municipal services with continuity plans; number of public buildings assessed for climate risk; number of critical service interruptions; response and recovery times; number of service-specific drills.
Justice and equity in CRM decision-making	The benefits of adaptation should reach the groups most exposed and least able to cope. Equity should be integrated into risk mapping, prioritisation of investments, communication, emergency support and recovery.	Vulnerability criteria included in project prioritisation; share of measures targeted at high-vulnerability zones; participatory meetings with vulnerable communities; accessibility of warning and communication channels; monitoring of who benefits from CRM investments.
Transparency, accountability and learning	CRM should be periodically reviewed so that future planning reflects actual damages, lessons learned, public feedback and changing climate conditions.	Annual CRM report submitted to the Municipal Council; updated risk and damage database; public dashboard or summary of CRM progress; number of lessons-learned reviews after events; number of measures revised based on monitoring.

3.1.1. Justice and equity dimensions of the CRM objectives

Justice and equity are cross-cutting requirements. Heat measures should prioritise overheated neighbourhoods, routes and facilities used by elderly people, children and people with health or mobility limitations; drainage and flood measures should protect repeatedly affected households, public services and SMEs; and warnings and consultations should remain accessible to people with limited digital access. Indicators should therefore measure not only outputs, but also whether risk is reduced for groups and locations with the lowest coping capacity.

3.2. Supportive elements for effective CRM

Effective CRM requires six connected enabling conditions: durable knowledge and data systems; risk-reducing technology and infrastructure; preparedness behaviour; continuing citizen engagement; finance and project-development capacity; and clear governance and political leadership. The CLIMAAX outputs should therefore be institutionalised through a Climate Risk Register, GIS layers, monitoring indicators, updated plans, an investment pipeline and annual reporting.

Table 3.2.1. Supportive elements for effective CRM

Supportive element for effective CRM	Description for Dobrich Municipality
Knowledge and data	Dobrich now has stronger evidence base due to the CLIMAAX Phase 1 flood modelling and Phase 2 multi-hazard assessment. This includes information on river flood exposure, heatwave risk, heavy rainfall/extreme precipitation, windstorms and winter extremes. The main need is to convert these outputs into a permanent municipal knowledge system. This should include a Climate Risk Register, GIS layers for hazards, exposure and vulnerability, an inventory of critical assets, a database of past damages and emergency costs, and a set of measurable indicators linked to CRM objectives. Data should be regularly updated with information from municipal departments, RDFSPP, NIMH, Water Supply and Sanitation, utility operators, health and social services, schools and local businesses. Existing gaps include incomplete historical damage records, limited local-scale time series for short-duration rainfall and wind extremes, insufficient economic loss data, and insufficiently detailed social vulnerability data.
Technology and infrastructure	Technical and infrastructure measures are essential for reducing exposure and vulnerability. For heavy rainfall and flooding, priorities include maintenance and upgrading of drainage systems, inspection of critical manholes and bottlenecks, cleaning and maintenance of the Dobrichka River bed and ravines, flood monitoring, local warning systems, permeable pavements, rain gardens and retention areas. For heatwaves, priorities include shading, tree canopy expansion, cooling centres, heat-resilient public buildings, shaded pedestrian routes and water-efficient green areas. For windstorms and winter extremes, priorities include tree-risk management, protection of overhead infrastructure where feasible, emergency route maintenance, winter maintenance equipment and contract standards, and continuity plans for transport and public services. For drought, soil and fire-related risks, measures should include drought-tolerant plant species, water-saving irrigation, compost use, dry vegetation maintenance and monitoring of fire-prone peripheral areas.
Social-behavioural aspects	Risk awareness, preparedness behaviour, trust in institutions and social networks are critical for effective CRM. The stakeholder process shows that awareness of hazards exists, but awareness alone is not sufficient. Residents and businesses need simple, practical and repeated communication on what to do before, during and after heatwaves, floods, storms and winter extremes. Social-behavioural support should include school-based education, household preparedness instructions, business continuity guidance, heat-health communication, evacuation awareness, volunteer engagement and communication through trusted local channels. Special attention should be given to groups that may not be reached through standard digital communication: elderly people, socially isolated residents, people with disabilities, low-income households and people dependent on regular medical or social services.

Supportive element for effective CRM	Description for Dobrich Municipality
Citizen engagement	Citizen engagement should continue beyond the CLIMAAX project events. It can support the validation of risk hotspots, identification of local drainage problems, prioritisation of green infrastructure, testing of warning messages and evaluation of implemented measures. Engagement should include residents, local NGOs, universities and professional schools, businesses, youth representatives, social services, health institutions and community leaders. Participatory mapping can be especially useful for identifying overheated public spaces, frequently flooded street sections, dangerous trees, inaccessible winter routes and vulnerable households. Citizen engagement should also support transparency: people should be able to see how CLIMAAX results are being used in municipal planning and what measures are being implemented.
Finances and resources	CRM requires a combination of municipal, national, European and private resources. The financial framework analysis identifies several relevant sources: municipal budget, capital programme, waste and cleanliness plan-account, national and European programmes, operational programmes, own revenues, debt or bridge financing, public-private partnerships and energy efficiency mechanisms. A key supportive element is climate tagging of budget lines and projects, so that the municipality can identify which expenditures reduce climate risks and where gaps remain. A second supportive element is a prioritised investment pipeline based on risk evidence. Measures should be ranked according to risk reduction potential, urgency, co-benefits, cost, feasibility and equity. CLIMAAX does not replace investment financing, but it provides the evidence base for justifying and prioritising future funding applications.
Governance arrangements and political leadership	CRM in Dobrich requires clear coordination because climate risks cut across municipal departments and external institutions. Strategic leadership should come from the Mayor and Municipal Council, while operational coordination should be supported by a cross-departmental CRM working group. This working group should include representatives responsible for environment, infrastructure, spatial planning, finance, projects and programmes, social services, education, public health coordination, waste/cleanliness, emergency preparedness and communication. External coordination is also needed with RDFSPP, Regional Administration, NIMH, Water Supply and Sanitation, utility operators, health authorities, schools, businesses and neighbouring municipalities, especially where risks are linked to the Dobrichka River catchment or regional infrastructure. Governance arrangements should clarify who maintains the Climate Risk Register, who updates GIS layers, who prepares annual CRM reporting, who integrates measures into the capital programme, and how CRM findings are reflected in the Disaster Risk Reduction Programme, Disaster Protection Plan, MIDP and sectoral programmes.

Table 3.2.2. Supportive elements for policy integration

CRM function	Proposed responsible/leading structure	Practical output
Climate Risk Register	Cross-departmental CRM working group, with support from environment and infrastructure units	List of hazards, exposed areas, vulnerable groups, critical assets, priority measures and implementation status
GIS and data management	Infrastructure/spatial planning units, project experts, external technical support where needed	Maps of hazard, exposure, vulnerability, critical assets and priority intervention zones
Integration into planning	Mayor, Municipal Council, relevant directorates	CLIMAAX findings integrated into MIDP, Disaster Risk Reduction Programme, Disaster Protection Plan and sectoral programmes
Budgeting and financing	Finance unit, projects and programmes unit, capital investment planning	Climate tagging of expenditures and prioritised CRM investment pipeline
Green and blue-green infrastructure	Environment, landscaping, infrastructure and spatial planning units	Measures against heat island, drought stress and local flooding
Disaster preparedness	Municipality, RDFSPP, regional structures, utilities	Updated plans, trainings, drills, warnings and communication with the population
Monitoring and reporting	CRM working group, Mayor, Municipal Council	Annual report on climate risk, implementation progress and lessons learned

Political leadership is essential because preventive measures require cross-sectoral trade-offs and long-term continuity. The next updates of the Disaster Risk Reduction Programme and Disaster Protection Plan should formally incorporate the CLIMAAX risk hierarchy, maps, vulnerable groups, responsibilities, measurable indicators, annual monitoring and links to municipal budgeting and project preparation.

3.3. Potential CRM measures

The proposed measures follow the Phase 2 risk hierarchy: heatwaves and heavy rainfall / extreme precipitation require the most urgent and systematic action; windstorms require stronger prevention and operational preparedness; and river flooding and winter extremes require continued maintenance, monitoring and targeted resilience measures.

Table 3.3 consolidates structural, nature-based, social, behavioural, knowledge, governance and investment measures. The indicative timeframes are short term (1-2 years), medium term (3-5 years), and long term (beyond 5 years or continuous implementation). Consolidation removes overlap while retaining the responsibilities, co-benefits and adaptation limits needed for future prioritisation.

Table 3.3. Potential CRM measures for Dobrich Municipality

Climate risk	Consolidated CRM measure	Type	Effectiveness and expected result	Co-benefits	Timeframe	Lead / support	Implementation limits
Heatwaves and urban heat stress	Adopt a municipal Heat-Health Action Protocol combining seasonal warnings, institutional procedures and targeted outreach to vulnerable residents.	Governance / social	High - reduces preventable health impacts and improves coordinated preparedness.	Lower pressure on emergency, health and social services.	Short term; annual	Municipality; RHI; schools; health and social services; NGOs	Requires direct outreach and access to cooling; communication alone is insufficient during severe heat.
Heatwaves and urban heat stress	Map urban heat hotspots and vulnerable groups using CLIMAAX outputs, demographic data, public buildings and green-space information.	Knowledge / GIS	High - enables spatial targeting and transparent investment priorities.	Supports public health, green-system and emergency planning.	Short term	Municipality; GIS/spatial planning; NIMH or technical experts	Local data and technical capacity must be maintained and maps periodically updated.
Heatwaves and urban heat stress	Provide cooling points and integrate passive cooling, shading, ventilation and insulation into public-building renovation.	Structural / social	High - protects users of schools, social facilities and other public buildings.	Energy savings, comfort and continuity of public services.	Short-medium term	Municipality; building managers; designers; contractors	Technical constraints, operating costs, staffing and accessibility may limit coverage.
Heatwaves and urban heat stress	Expand tree canopy and shaded routes in priority locations, using drought-tolerant species and survival monitoring.	Nature-based	High - reduces outdoor heat exposure and maintains cooling under drier conditions.	Air quality, biodiversity, walkability and better public space.	Medium-long term	Municipality; green-system units; urban planners	Trees mature slowly; drought, maintenance, root space and utilities constrain planting.

Climate risk	Consolidated CRM measure	Type	Effectiveness and expected result	Co-benefits	Timeframe	Lead / support	Implementation limits
Heavy rainfall / extreme precipitation	Maintain an inventory of drainage bottlenecks, frequently flooded streets and low-lying public assets, supported by post-event damage and loss reporting.	Knowledge / monitoring	High - improves targeting, investment justification and learning after storms.	Better expenditure prioritisation and faster response.	Short term; recurring	Municipality; Water Supply and Sanitation; emergency and finance units	Needs standard reporting, field validation, citizen input and regular updates.
Heavy rainfall / extreme precipitation	Introduce pre-season cleaning and prioritised maintenance or upgrading of inlets, collectors, culverts, channels and retention capacity.	Operational / structural	High - reduces surface flooding, damage and transport disruption.	Improved sanitation, road safety and lower recovery costs.	Short-long term	Municipality; Water Supply and Sanitation; contractors	Very extreme rainfall can exceed design capacity; major underground works are costly.
Heavy rainfall / extreme precipitation	Integrate permeable paving, rain gardens, bioswales and retention areas into street, parking, schoolyard and public-space projects.	Nature-based / structural	High - reduces runoff while increasing local storage and infiltration.	Urban cooling, biodiversity and higher-quality public spaces.	Medium-long term	Municipality; planners; designers; infrastructure contractors	Space, soil, winter operation and maintenance affect feasibility.
Heavy rainfall / extreme precipitation	Apply climate-risk screening to municipal investments and issue practical household and business guidance on basement protection, safe behaviour and blocked-drain reporting.	Governance / behavioural	Medium-high - avoids new exposure and reduces preventable losses.	Better investments and stronger municipality-community communication.	Short-medium term	Municipality; construction control; business groups; local media	Municipal authority over private development is limited; vulnerable owners may need support.
Dobrichka River flooding	Continue annual maintenance of the riverbed and ravines, removing obstructive waste, sediment and vegetation with due ecological safeguards.	Operational / structural	High - lowers local blockage, overflow and propagation risk.	Sanitation and a better urban river environment.	Short term; recurring	Municipality; River Basin Directorate; RDFSPP; contractors	Maintenance alone cannot control exceptional floods and must respect ecological requirements.
Dobrichka River flooding	Assess technically and legally feasible retention, buffer-zone and nature-based river-corridor improvements.	Nature-based / planning	Medium-high - supports long-term reduction of river-adjacent risk.	Biodiversity, recreation and urban-landscape improvement.	Medium-long term	Municipality; Basin Directorate; planners; hydrology experts	Space, ownership, existing uses and cost may limit implementation.
Dobrichka River flooding	Update flood-prone-area maps and prevent new exposure through spatial planning, construction control, municipal land management and investment screening.	Knowledge / regulatory	High - improves operational planning and prevents future risk accumulation.	Lower future losses and more sustainable urban development.	Short-medium term	Municipality; Municipal Council; RDFSPP; River Basin Directorate	Mapping uncertainty, existing development and land rights constrain full risk avoidance.

Climate risk	Consolidated CRM measure	Type	Effectiveness and expected result	Co-benefits	Timeframe	Lead / support	Implementation limits
Dobrichka River flooding	Combine targeted warning and evacuation communication with feasible property-level protection for critical buildings and exposed SMEs.	Preparedness / structural	Medium-high - protects life, services and business continuity in known hotspots.	Stronger risk ownership and reduced recovery costs.	Short-medium term	Municipality; RDFSPP; schools; health facilities; businesses	Mobility constraints and affordability require repeated communication and targeted support.
Windstorms and strong winds	Establish systematic tree-risk inspection and preventive management around schools, care facilities, transport stops, parks and main streets.	Operational / nature management	High - reduces risk from falling branches and trees.	Healthier trees, public safety and fewer emergency removals.	Short term; recurring	Municipality; green-system unit; contractors; emergency services	Extreme winds still cause damage; excessive pruning can reduce shade.
Windstorms and strong winds	Enforce safety for billboards and temporary objects and include wind-resilience in public buildings, roofs, façades, solar installations and renovation.	Regulatory / structural	High - reduces injury and damage to public assets.	Lower maintenance costs and safer energy investments.	Short-medium term	Municipality; construction control; designers; owners	Enforcement and technical constraints in existing structures may limit results.
Windstorms and strong winds	Coordinate preventive action with utility operators and issue timely public guidance before forecast storms.	Governance / behavioural	Medium - improves service continuity and safer behaviour.	Infrastructure reliability and faster incident response.	Short-medium term; recurring	Municipality; RDFSPP; electricity, telecom and water operators; media	Authority over utilities is limited and messages must be timely and trusted.
Snowfall, blizzards and icing	Update priority winter routes and strengthen maintenance-contract standards, readiness checks, response times and reporting.	Operational / governance	High - protects emergency access, mobility and essential services.	More reliable services, transparency and budget control.	Short term; recurring	Municipality; contractors; emergency and transport operators	Severe compound events can exceed equipment and contract capacity.
Snowfall, blizzards and icing	Maintain backup plans for social and health services, medicines, home care and vulnerable residents, supported by accessible winter-risk communication.	Social / preparedness	High - reduces disproportionate impacts and preventable accidents.	Social protection, cohesion and household preparedness.	Short-medium term	Municipality; health and social services; NGOs; RDFSPP; media	Requires current privacy-sensitive information and outreach beyond digital channels.
Snowfall, blizzards and icing	Integrate snow-load, freeze-thaw, icing, drainage and accessibility requirements into public-building and pavement renovation.	Structural	Medium-high - reduces building damage and improves winter access.	Safer public space and lower lifecycle maintenance costs.	Medium term	Municipality; designers; contractors	Retrofitting existing buildings and pavements may be costly.

Climate risk	Consolidated CRM measure	Type	Effectiveness and expected result	Co-benefits	Timeframe	Lead / support	Implementation limits
Compound and cascading risks	Create and annually update a Climate Risk Register covering hazards, exposed areas, vulnerable groups, assets, measures, responsibilities, finance and indicators; publish a progress summary.	Governance / knowledge	High - connects evidence to planning, budgeting, implementation and learning.	Institutional memory, accountability and funding readiness.	Short term; annual	Municipality; cross-departmental CRM working group; Municipal Council	Requires clear ownership, reliable data and sustained administrative effort.
Compound and cascading risks	Establish a formal cross-departmental CRM working group linking technical, financial, social, education, communication and disaster-preparedness functions.	Governance	High - reduces fragmentation and clarifies operational coordination.	Better use of expertise and coordination with external institutions.	Short term	Mayor; Municipal Council; relevant municipal directorates	Workload and unclear mandates can weaken participation unless formally resolved.
Compound and cascading risks	Introduce climate-risk screening and tagging for major capital projects, procurement and relevant budget lines, requiring an adaptation component where applicable.	Governance / finance	High - avoids maladaptation and mainstreams resilience in normal expenditure.	Transparency, lower lifecycle cost and stronger funding applications.	Medium term	Municipality; finance, projects, procurement and technical units	Requires methodology, training, political commitment and sometimes higher upfront cost.
Compound and cascading risks	Prepare a prioritised CRM investment pipeline based on risk reduction, urgency, feasibility, cost, co-benefits and equity.	Finance / governance	High - converts the assessment into fundable and sequenced projects.	Faster response to national and EU funding opportunities.	Short-medium term	Municipality; projects unit; finance unit; external experts as needed	Funding and project-preparation capacity may delay implementation.

Equity and justice implications of the proposed measures

Measures should be screened for distributional effects and prioritised where risk is highest and coping capacity lowest. Green and heat measures should first serve overheated routes and facilities used by vulnerable residents; drainage and flood investment should address repeated hotspots and critical services; and communication must reach people outside digital channels. Potential burdens from river-corridor changes, resilient-building requirements or unequal green investment should be managed through consultation, phased implementation, transparent criteria and targeted support.

3.4. Integration into planning and decision making

CLIMAAX results should be integrated through existing municipal instruments rather than a stand-alone climate document. Risk evidence should guide priorities; adaptation should be mainstreamed into plans, budgets, spatial and infrastructure decisions; each measure should have an owner, funding route, indicator and timeframe; and monitoring should feed new events, data and stakeholder feedback back into planning.

3.4.1. Integration into local policy instruments and municipal strategies

The following municipal policy instruments and decision-making mechanisms are the most relevant entry points for integrating the CRA results.

Table 3.4. Integration of the Climaax results into the policy- and decision-making

Policy instrument/ decision-making mechanism	Role in CRM integration	Recommended integration of CLIMAAX results
Municipal Integrated Development Plan 2021–2027 and its implementation programme	Main strategic and investment framework for urban development, infrastructure, public services and territorial priorities.	Include an annex or update with priority climate-risk zones, CRM objectives, investment ideas and indicators. Use CLIMAAX results to justify climate-resilient infrastructure, green-blue infrastructure, public building adaptation and targeted investment in vulnerable areas.
Post-2025 Disaster Risk Reduction Programme	Main local programme for prevention, preparedness and reduction of disaster risk.	Add a dedicated climate-risk section covering heatwaves, heavy rainfall/extreme precipitation, windstorms, river flooding and winter extremes. Include risk maps, vulnerable groups, preventive measures, indicators, responsible units and annual implementation reporting.
Municipal Disaster Protection Plan	Operational framework for prevention, preparedness, response, recovery and coordination.	Update the risk profile and operational procedures using CLIMAAX findings. Strengthen sections on heatwave response, heavy rainfall/pluvial flooding, river flooding along the Dobrichka River, windstorms, snowstorms and cascading disruptions to utilities and public services.
Spatial planning, zoning and construction control	Determines where and how development occurs and whether new exposure is created.	Introduce climate-risk screening for municipal projects and, where possible, avoid increasing exposure in flood-prone or overheated zones. Require consideration of drainage, shading, wind safety, emergency access and continuity of public services in new public buildings and major reconstructions.
Capital investment programme	Main mechanism for prioritising municipal construction, repair and infrastructure investments.	Climate-tag investment projects according to the risks they reduce. Prioritise drainage bottlenecks, heat-vulnerable public buildings, shaded pedestrian routes, green-blue infrastructure, winter access routes and critical public assets.

Policy instrument/ decision-making mechanism	Role in CRM integration	Recommended integration of CLIMAAX results
Annual municipal budget and medium-term budget forecast	Determines whether CRM measures receive practical resources.	Create identifiable CRM-related budget lines or tags for prevention, maintenance, preparedness, adaptation and damage recovery. Track spending on preventive measures separately from post-event recovery costs.
Environmental Protection Programme and green system management	Supports urban environmental quality, biodiversity, green areas and nature-based solutions.	Integrate heat reduction, drought-resilient planting, stormwater retention, tree canopy expansion, soil protection and fire-risk reduction in green-space planning and maintenance.
Waste Management Programme and cleanliness plan-account	Relevant because waste, sediments and blocked drainage systems can intensify pluvial flooding and sanitary risks after rainfall.	Link street cleaning, waste removal and drainage inlet cleaning to rainfall preparedness. Include targeted pre-season maintenance of high-risk areas.
Energy efficiency and renewable energy programmes	Public building renovations and energy investments can reduce or increase climate vulnerability depending on design.	Ensure that energy efficiency projects also include adaptation: passive cooling, shading, ventilation, roof safety, freeze-thaw resilience and backup options for critical facilities.
Transport and road maintenance planning	Critical for emergency access, winter mobility, flood response and daily access to services.	Use risk maps to define priority emergency routes, drainage upgrades, winter maintenance corridors and shaded pedestrian routes.
Public health and social service planning	Essential for protecting vulnerable groups during heatwaves, cold extremes, floods and service disruption.	Establish protocols for contacting vulnerable users, operating cooling points, maintaining access to medicines and social care, and coordinating with health institutions during extreme events.
Education sector planning	Schools and kindergartens are both vulnerable assets and important communication channels.	Include school preparedness, heat protocols, shaded yards, flood and storm safety, drills and climate-risk education.
Public procurement and technical specifications	Determines whether adaptation requirements are included in actual works and services.	Include climate-resilience criteria in design, construction, maintenance, landscaping, winter services and public building renovation contracts.
Project preparation and EU/national funding applications	Major adaptation investments will often require external funding.	Use CLIMAAX evidence to prepare fundable projects with clear risk-reduction logic, maps, indicators, co-benefits and equity justification.

3.4.2. Practical mechanisms for integration

Practical integration requires six linked mechanisms: a municipal Climate Risk Register; screening of major investments for flood, heat, wind and winter exposure; climate tagging of the capital programme; CLIMAAX-informed updates of disaster risk and protection documents; adaptation criteria in procurement and technical specifications; and regular citizen and business input on local hotspots and implementation priorities.

3.4.3. Synergies and tensions for CRM in Dobrich

The main synergies connect drainage maintenance with cleanliness, green infrastructure with heat reduction and public-space quality, energy renovation with thermal safety, social services with preparedness, and CLIMAAX evidence with funding readiness. The principal tensions concern short-term response versus prevention, grey infrastructure versus nature-based solutions, development pressure versus risk avoidance, higher upfront standards versus lifecycle savings, technical complexity, and responsibilities that extend beyond municipal boundaries. Table 3.4.3 sets out the corresponding coordination actions.

Table 3.4.3. Actions to improve CRM

Tension/coordination challenge	Action to improve CRM
Fragmented responsibilities across municipal departments	Establish a cross-departmental CRM working group with a clear mandate, meeting schedule and reporting function.
Limited municipal resources	Prepare a prioritised CRM investment pipeline and use CLIMAAX evidence for external funding applications.
Short-term response competing with long-term prevention	Track emergency and recovery costs and compare them with preventive investment needs.
Technical complexity of CRA results	Produce simplified risk maps, municipal briefs and sector-specific guidance for departments and stakeholders.
Gaps between awareness and preparedness	Implement repeated seasonal communication, drills and practical instructions for households, businesses, schools and social services.
Cross-boundary flood and infrastructure risks	Strengthen cooperation with regional administration, Basin Directorate, neighbouring municipalities, utility operators and RDFSPP.
Equity concerns in adaptation investments	Use vulnerability criteria when prioritising measures and consult affected communities before interventions.

3.4.4. New data, remaining data needs and competencies

The CLIMAAX project has produced new and valuable data for Dobrich Municipality. Phase 1 provided a flood-focused assessment along the Dobrichka River, including exposure of buildings and population, flood depths, damage estimates and evacuation implications. Phase 2 expanded the evidence base into a multi-hazard risk profile covering heatwaves, heavy rainfall / extreme precipitation, windstorms, river flooding and snowfall / blizzards. It also introduced stakeholder perceptions, severity-urgency-capacity prioritisation and a clearer understanding of the gaps between risk awareness and preparedness.

However, further data and competencies are needed to improve CRM. The most important needs are presented in Table 3.4.4.

Table 3.4.4. Data and capacity needs

Data/capacity need	Why it matters for CRM
High-resolution short-duration rainfall data	Necessary for better assessment of pluvial flooding, drainage design and intense storm impacts.
Updated hydrological data for the Dobrichka River and tributaries	Necessary for more accurate flood modelling, river maintenance and early warning.
Detailed drainage system condition and capacity data	Necessary for prioritising drainage upgrades and maintenance.
Local heat-health data	Necessary for assessing heatwave impacts on public health and evaluating heat-health measures.
Social vulnerability data at neighbourhood level	Necessary for equity-sensitive targeting of measures.
Damage and loss database from past events	Necessary for cost-benefit analysis, investment justification and monitoring avoided losses.
Tree inventory and tree-risk assessment	Necessary for reducing windstorm risk while preserving shade and ecosystem services.
Public building climate vulnerability assessment	Necessary for prioritising renovation, cooling, roof safety and service continuity measures.
Utility disruption records	Necessary for understanding cascading risks from windstorms, floods, snow and icing.
GIS capacity and data management procedures	Necessary for maintaining the Climate Risk Register and risk maps as living tools.
Training for municipal staff	Necessary for integrating climate risk into spatial planning, budgeting, procurement and project preparation.

The municipality does not need to collect all data at once. A phased approach is more realistic. In the short term, the priority should be a Climate Risk Register, drainage hotspot inventory, public building vulnerability screening and damage/loss reporting templates. In the medium term, the municipality should improve GIS layers, drainage capacity data, heat vulnerability mapping, tree-risk management and public service continuity data. In the long term, Dobrich should aim to develop a more integrated municipal climate risk monitoring platform.

3.4.5. Monitoring and evaluation system

Dobrich Municipality already has several planning and reporting instruments relevant to disaster risk management and municipal development, including the Municipal Integrated Development Plan, the Disaster Risk Reduction Programme, the Municipal Disaster Protection Plan, sectoral programmes and annual budget/capital investment reporting. However, these instruments do not yet form a unified climate risk monitoring and evaluation system. A suitable CRM monitoring system should therefore be built by connecting existing reporting processes rather than creating a completely separate administrative burden.

The proposed CRM monitoring and evaluation system should include the following elements.

A. Governance of monitoring

The monitoring system should be coordinated by the proposed cross-departmental CRM working group. The group should include representatives from environment, infrastructure, spatial planning,

finance, projects and programmes, social services, education, public communication, disaster preparedness and, where appropriate, external partners such as RDFSPP, the Regional Health Inspectorate, Water Supply and Sanitation, utility operators and expert institutions.

The working group should prepare an annual CRM progress report for the Mayor and Municipal Council. The report should summarise implemented measures, observed events, damages, progress against indicators, financing used, gaps, lessons learned and priorities for the following year.

B. Monitoring indicators

The monitoring system should track indicators at four levels (See Table 3.4.5.1).

Table 3.4.5.1. Monitoring indicators

Indicator level	Examples
Hazard and exposure indicators	Number of heatwave days; number of heavy rainfall events; flooded street sections; windstorm incidents; snow/ice disruption days; exposed buildings and public assets.
Vulnerability indicators	Number of vulnerable residents in high-risk zones; number of social service users covered by preparedness protocols; number of schools and health/social facilities in risk zones; number of SMEs in flood-prone areas.
Implementation indicators	Number of drainage points upgraded or cleaned; area of green-blue infrastructure installed; number of trees planted and surviving; number of public buildings adapted; number of staff trained; number of awareness campaigns; number of drills.
Outcome indicators	Reduction in repeated flooding locations; reduced heat exposure around priority public spaces; reduced service disruption time; reduced emergency costs over time; improved public awareness; reduced damage to municipal assets.

C. Data sources

The monitoring system should combine CLIMAAX maps and analytical outputs with municipal GIS, infrastructure and maintenance records; RDFSPP incident information; Water Supply and Sanitation and utility records; NIMH warnings; accessible health and social data handled in accordance with data-protection requirements; citizen feedback; budget and capital-programme data; and standard post-event damage and loss reports.

D. Reporting frequency

An example for practical reporting cycle is presented in Table 3.4.5.2.

Table 3.4.5.2. Monitoring reporting activities

Monitoring activity	Frequency
Update Climate Risk Register	Annually and after major events
Review damage/loss data	After each significant event and annually
Review implementation of CRM measures	Twice per year
Update risk maps and GIS layers	Annually or when new data becomes available
Public CRM progress summary	Annually

Monitoring activity	Frequency
Review of Disaster Risk Reduction Programme / Disaster Protection Plan relevance	At formal update periods and after major events
Stakeholder consultation on CRM priorities	At least once per year

E. Learning and corrective action

Monitoring should not be limited to reporting. It should trigger corrective action. After every significant heatwave, flood, windstorm or winter disruption, the municipality could conduct a short lessons-learned review. This review should record what happened, which places and groups were most affected, what worked or failed, whether warnings and vulnerable groups were reached, which services were disrupted and what must change before the next event. The results should feed back into the Climate Risk Register, the annual CRM report, the capital programme, public communication plans and future updates of the Disaster Risk Reduction Programme and Disaster Protection Plan.

3.4.6. Recommended integration pathways

The integration pathway for Dobrich Municipality is presented in Table 3.4.6 and Figure.3.4.

Table 3.4.6. Integration pathway

Step	Action	Timeframe
1	Formally recognise the CLIMAAX Phase 1 and Phase 2 results as an evidence base for municipal CRM.	Short term
2	Establish a cross-departmental CRM working group.	Short term
3	Create a municipal Climate Risk Register and link it to GIS layers.	Short term
4	Integrate heatwaves and extreme precipitation as priority risks in the post-2025 Disaster Risk Reduction Programme.	Short term
5	Update relevant sections of the Municipal Disaster Protection Plan using the CLIMAAX risk findings.	Short to medium term
6	Introduce climate-risk screening for municipal capital projects and public procurement.	Medium term
7	Climate-tag relevant budget lines and capital programme projects.	Medium term
8	Prepare a prioritised CRM investment pipeline for external funding.	Medium term
9	Establish annual CRM monitoring and public progress reporting.	Medium term
10	Use lessons from implementation and future events to update risk maps, measures and planning priorities.	Continuous

The pathway combines immediate institutional and preparedness measures for 2026-2030 with medium-term investment in stormwater management, sustainable drainage and climate-proofing, followed by longer-term blue-green infrastructure and climate-resilient urban transformation.

It is a flexible planning framework rather than a claim of completed implementation and should be updated as risk information, financing opportunities, local capacity and experience evolve.

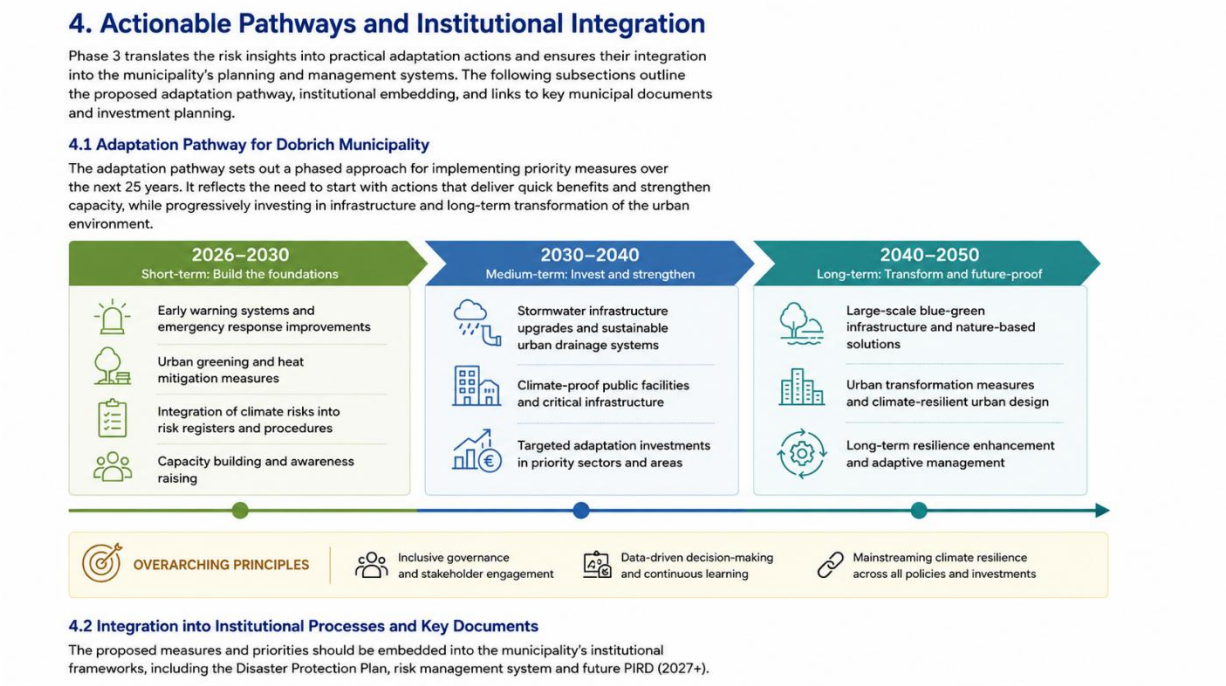


Figure.3.4. Adaptation Pathway for Dobrich Municipality

This pathway would allow Dobrich Municipality to move from project-based climate risk assessment towards an operational climate risk management cycle. The cycle should connect data, planning, investment, implementation, monitoring and learning. In this way, the CLIMAAX results can support not only compliance with climate and disaster risk policy expectations, but also practical improvements in public safety, infrastructure resilience, health protection, social equity and quality of life in Dobrich.

4. Project Evaluation

4.1. Usability of the results

The project results provide significant practical value for the Municipality of Dobrich, as they build on the traditional approach to risk management by introducing a systematic and evidence-based framework for decision-making in the face of climate uncertainty. The main benefit of the project is not limited to the identification and assessment of climate risks, but is expressed in creating a basis for more informed, proactive and strategically oriented management of local development.

One of the most significant results is the formation of new knowledge about the nature, spatial distribution and interrelationships between the main climate risks affecting the territory of the municipality. The assessment conducted allows moving from general assumptions about the impact of climate change to a specific understanding of the risks with the highest severity, degree of urgency and potential impact on the population, infrastructure and local economy. In this way, the project creates a reliable analytical basis for future management decisions and investment priorities.

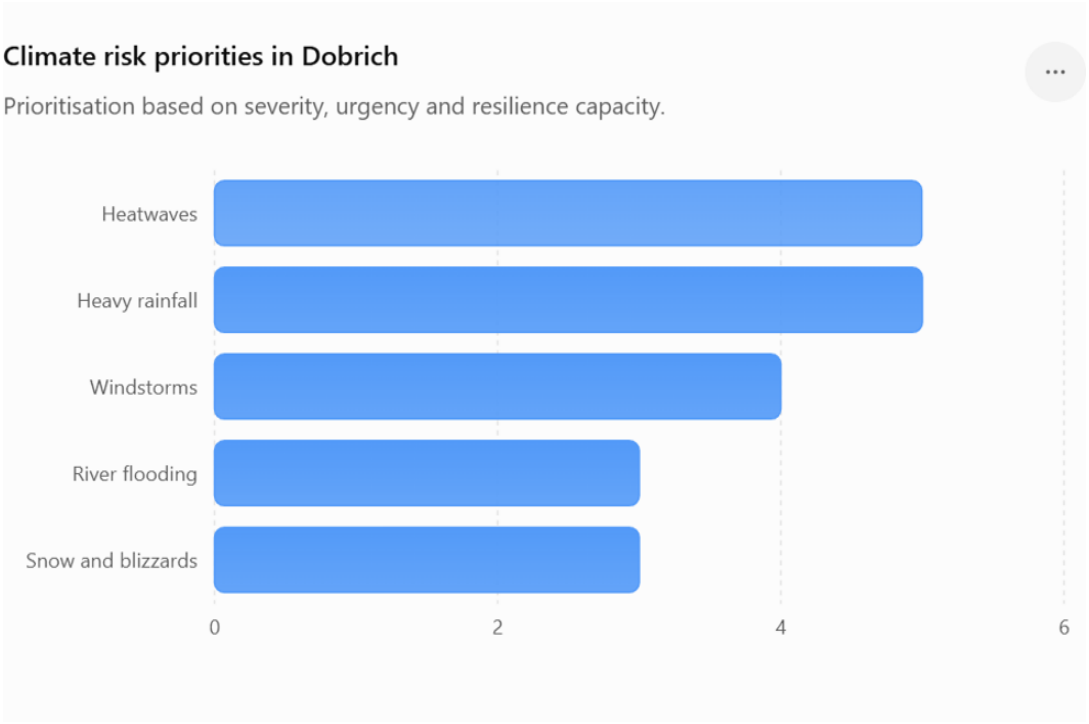


Figure 4.1. Climate Risk Priorities in Dobrich municipality

Of particular importance is the possibility of using the results as a prioritization tool. Risk assessment not only identifies climate threats, but also allows them to be compared through a unified framework that takes into account the severity of the impact, the urgency of the necessary actions and the existing adaptation capacity. This provides the municipal administration with a mechanism to direct limited financial and administrative resources to the areas where the potential effect of the measures taken would be most significant.

The results also have direct applicability in terms of strategic planning. They can be used in the updating and implementation of municipal strategic documents, including the Integrated Development Plan of the municipality, sectoral programs in the field of environment, transport, health and social activities, as well as in the development of future policies related to adaptation to climate change. In this way, climate risk is transformed from an independent expert topic into an integrated element of local governance.

The project also has the potential to significantly contribute to the processes of spatial and investment planning. The results obtained can help identify areas with increased exposure to climate hazards and guide future decisions regarding the development of infrastructure, surface water management, green systems and the urban environment. In the long term, this creates prerequisites for the gradual integration of the principles of climate resilience into the spatial planning and investment policy of the municipality.

A significant benefit of the project is also the strengthening of the institutional capacity for climate risk management. The assessment process created prerequisites for closer interaction between different administrative structures, experts and stakeholders, while contributing to a better understanding of the links between climate risks, the vulnerability of individual systems and the possibilities for adaptation. In this way, the project supports the development of a management culture based on prevention, preparation and long-term sustainability.

In a broader sense, the project results can be seen as an initial step towards building a permanent process for monitoring, assessing and updating climate risks. Rather than being a one-off analytical product, the developed assessment creates a basis for subsequent refinement of policies, measures and investment decisions in line with changing climate conditions and emerging challenges. In this way, the project contributes not only to a better understanding of risk, but also to increasing the long-term resilience and adaptive capacity of the Municipality of Dobrich. The project results also have significant implications for the development of local policies and regulatory instruments. The prioritization of heat waves and extreme precipitation as climate risks of highest importance for the Municipality of Dobrich demonstrates the need for climate change adaptation considerations to be more systematically integrated into the future strategic and sectoral policies of the municipality. The results can serve as a basis for including specific climate resilience objectives and measures in future updates of the Municipality's Integrated Development Plan, sectoral programs and investment priorities in the areas of urban environment, water, health, transport and disaster risk management.

From a spatial planning perspective, the project provides arguments for a more active integration of climate risks into spatial planning and management processes. The results obtained support the implementation of solutions aimed at preserving and expanding green infrastructure, limiting excessive soil sealing, preserving natural drainage corridors and the promotion of sustainable stormwater management systems in new investment initiatives. In the longer term, the results can also support the introduction of climate resilience criteria in the preparation of spatial plans, the design of public infrastructure and the determination of future directions for urban development.

4.2. Lessons learned

Phase 3 showed that effective CRM depends as much on governance, institutional capacity and daily planning as on hazard assessment. The severity-urgency-resilience framework helped distinguish risks needing immediate action from those requiring continued monitoring and enabled a more practical discussion of adaptation priorities.

The main challenges were fragmented information, different institutional data purposes, the translation of analytical results into investment priorities and the assessment of adaptive capacity. Resilience depends on coordination, finance, technical knowledge and the ability to learn, which requires more expert judgement and stakeholder engagement than physical hazard analysis alone.

Stakeholders helped validate local conditions, identify operational constraints and assess the applicability of measures. Survey results, consultations, the January workshop and the final conference confirmed the priority of heatwaves and extreme precipitation and supported green infrastructure, stormwater management, early warning, preparedness and stronger resilience of critical services.

The feedback also emphasised that measures must be phased, linked to available resources and integrated into existing strategic documents and investment programmes. Participation therefore supported both legitimacy and practical refinement rather than serving only a consultative function.

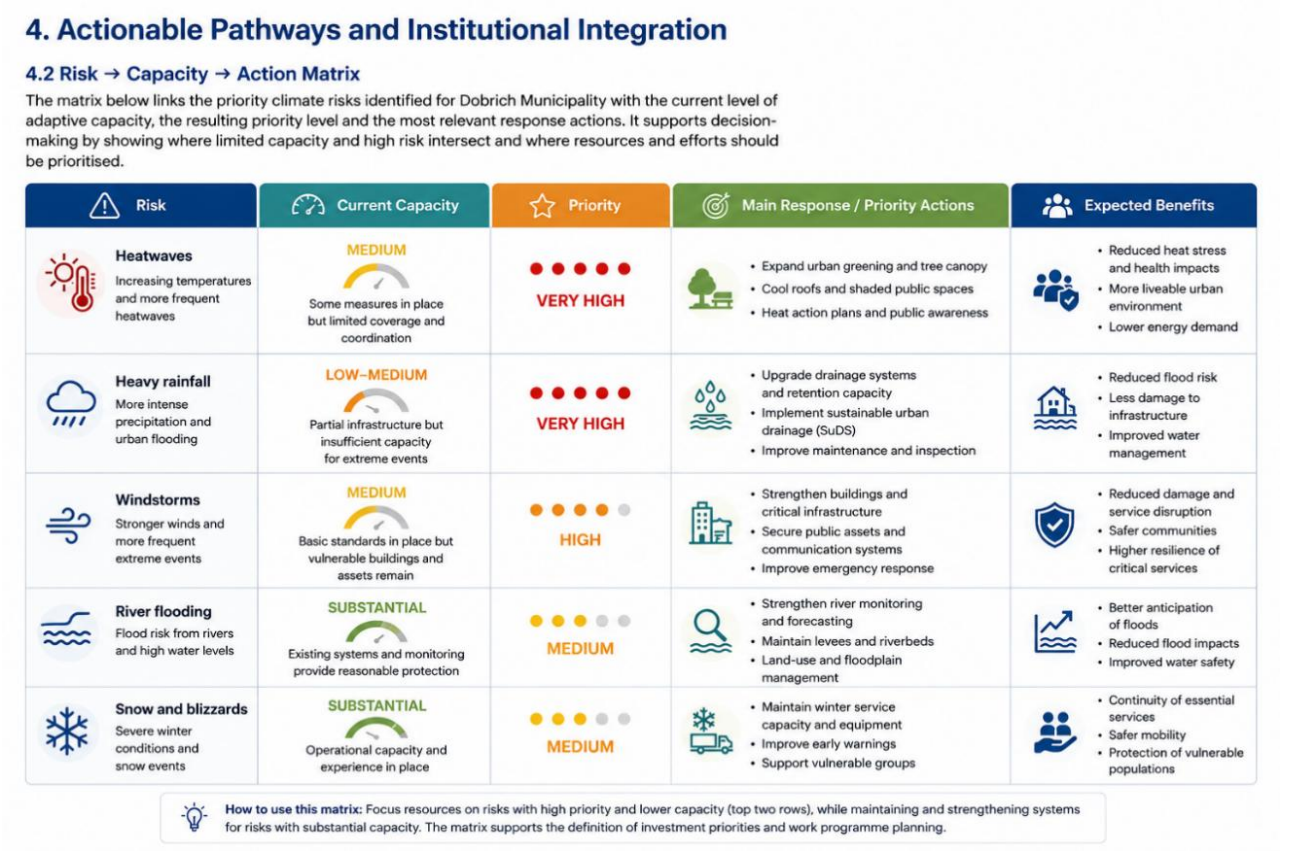
A further lesson is that CLIMAAX should be institutionalised as a continuing process. The risk register, monitoring system and proposed integration into the Disaster Protection Plan, the post-

2025 Disaster Risk Reduction Programme and the next planning cycle can support periodic review of risks, measures and priorities.

What worked well was the phased use of previous results and the consistent transition from risk identification to objectives and measures. What remained difficult was converting cross-sectoral findings into costed, long-term policies where responsibilities and finance are distributed. Even so, the project used the available resources efficiently by building on existing assessments rather than repeating them.

The overall impact is a shared, evidence-based understanding of local climate risks and a stronger basis for planning, funding applications and future investment. The project does not itself implement the measures; it improves municipal readiness to select, design, finance, monitor and update them.

Results were communicated through working meetings, consultations and the final conference and are structured for use by municipal leadership, technical departments and partner institutions. Figure 4.2 summarises the relationship between prioritisation and adaptation response; the full report and supporting outputs provide the operational detail for future plan updates and project preparation.



4. Actionable Pathways and Institutional Integration

4.2 Risk → Capacity → Action Matrix

The matrix below links the priority climate risks identified for Dobrich Municipality with the current level of adaptive capacity, the resulting priority level and the most relevant response actions. It supports decision-making by showing where limited capacity and high risk intersect and where resources and efforts should be prioritised.

Risk	Current Capacity	Priority	Main Response / Priority Actions	Expected Benefits
Heatwaves Increasing temperatures and more frequent heatwaves	MEDIUM — Some measures in place but limited coverage and coordination	VERY HIGH	• Expand urban greening and tree canopy • Cool roofs and shaded public spaces • Heat action plans and public awareness	• Reduced heat stress and health impacts • More liveable urban environment • Lower energy demand
Heavy rainfall More intense precipitation and urban flooding	LOW–MEDIUM — Partial infrastructure but insufficient capacity for extreme events	VERY HIGH	• Upgrade drainage systems and retention capacity • Implement sustainable urban drainage (SuDS) • Improve maintenance and inspection	• Reduced flood risk • Less damage to infrastructure • Improved water management
Windstorms Stronger winds and more frequent extreme events	MEDIUM — Basic standards in place but vulnerable buildings and assets remain	HIGH	• Strengthen buildings and critical infrastructure • Secure public assets and communication systems • Improve emergency response	• Reduced damage and service disruption • Safer communities • Higher resilience of critical services
River flooding Flood risk from rivers and high water levels	SUBSTANTIAL — Existing systems and monitoring provide reasonable protection	MEDIUM	• Strengthen river monitoring and forecasting • Maintain levees and riverbeds • Land-use and floodplain management	• Better anticipation of floods • Reduced flood impacts • Improved water safety
Snow and blizzards Severe winter conditions and snow events	SUBSTANTIAL — Operational capacity and experience in place	MEDIUM	• Maintain winter service capacity and equipment • Improve early warnings • Support vulnerable groups	• Continuity of essential services • Safer mobility • Protection of vulnerable populations

How to use this matrix: Focus resources on risks with high priority and lower capacity (top two rows), while maintaining and strengthening systems for risks with substantial capacity. The matrix supports the definition of investment priorities and work programme planning.

Figure 4.2. Climate Risk Prioritisation and Adaptation Response Framework for Dobrich Municipality

5. Conclusions - Phase 3

Phase 3 moves ARCADIA from assessment to a structured climate risk management framework. It confirms that the value of the Phase 1 and Phase 2 evidence lies in supporting prioritisation, planning and long-term resilience rather than only describing hazards.

Heatwaves and heavy rainfall / extreme precipitation require the most urgent action; windstorms remain high priority; and river flooding and winter extremes require continued monitoring and preparedness. Actual impacts depend not only on hazard severity, but also on exposure, sensitivity and the municipality's capacity to anticipate, prepare, respond and recover. The Climate Resilience Capacity Framework therefore focuses on four mutually reinforcing dimensions that Dobrich can strengthen: institutional, technical, financial and social capacity (See Figure 5.1.)

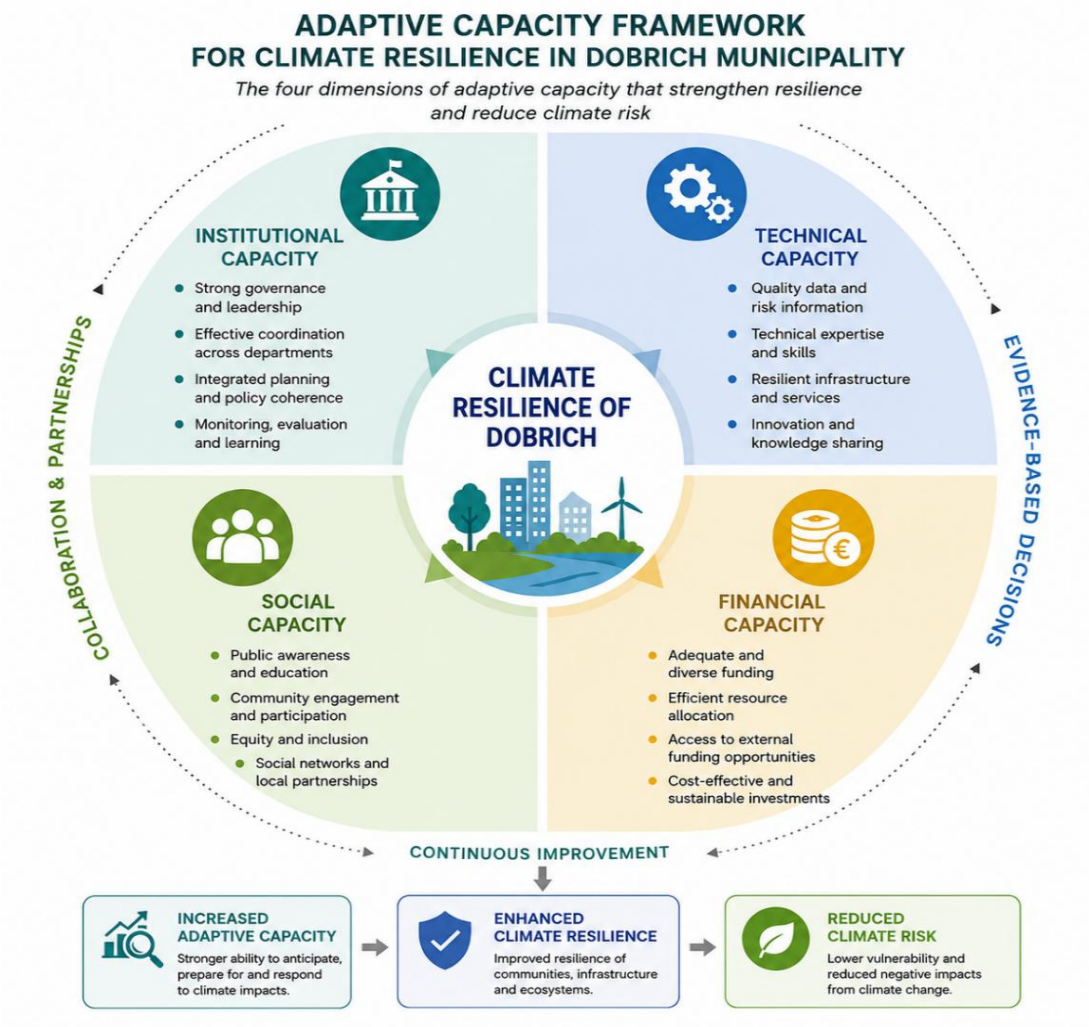


Figure 5.1. Adaptive Capacity Framework for Climate Resilience in Dobrich Municipality

The framework represents a shift from hazard-centred response to a continuous resilience cycle of knowledge, coordination, investment, implementation, monitoring and learning. Because climate impacts cross public health, infrastructure, water, transport, environmental protection, social services and emergency management, adaptation must be integrated across policies and institutions.

The most immediate priorities are formal coordination, a Climate Risk Register, climate-informed updates of disaster and development documents, targeted heat and drainage action, blue-green infrastructure, accessible warning and support for vulnerable groups, and a fundable investment pipeline.

Implementation will require sustained political and administrative commitment, external finance, improved local data and periodic revision as risks and capacities change. Phase 3 provides planning and governance pathways in an Action Matrix (Figure 5.2.). It should not be interpreted as evidence that the proposed measures have already been formally adopted, financed or implemented.

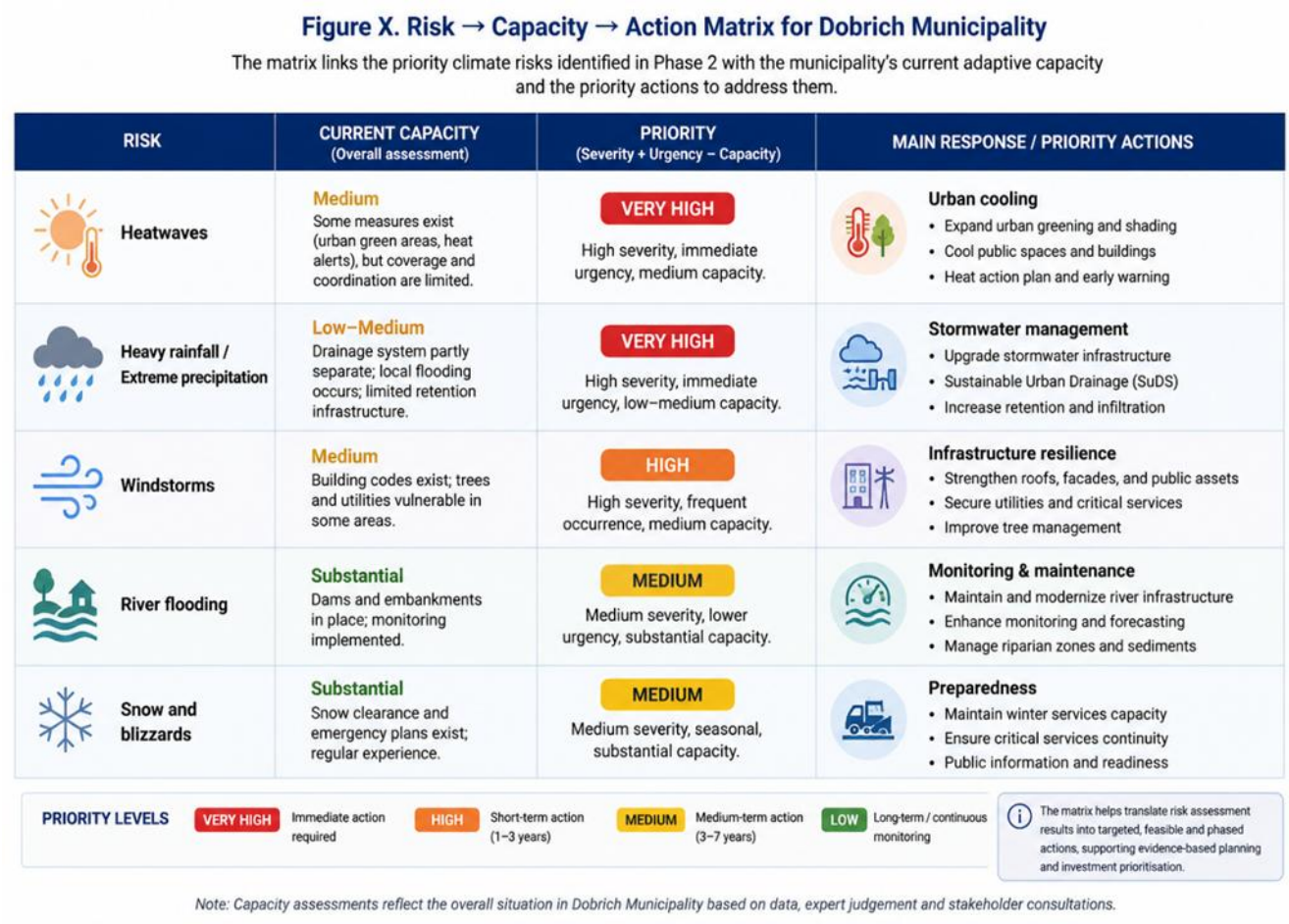


Figure 5.2. Action Matrix for Dobrich Municipality

6. Progress evaluation

6.1. Project outputs

Table 6.1 Overview key performance indicators

Key Performance Indicator	*Progress*
Final conference on project results to disseminate findings and recommendations.	The final conference was held on 24.06.2026 with 38 participants representing the key project stakeholders. https://www.dobrich.bg/bg/novini/obshtina-grad-dobrich-predstavi-rezultatite-ot-proekt-arkadiya-za-klimatichna-ustoychivost-i-adaptatsiya-kam-klimatichnite-promeni
Meetings conducted for decision- makers (on a regular basis when a topic requires a meeting).	Achieved. Regular online meetings with the deputy mayor and the project coordinator have been held.
At least 5 local or national NGOs and 20 local community members involved in the workshops with stakeholders and in the final conference (accumulative, by the end of the project)	Achieved. At least 5 representatives of local NGOs and businesses and more than 20 local community members participated in the workshops, final conference. In addition, project leaflets have been disseminated.
1 municipal disaster risk reduction programme reviewed and revised.	Achieved. The project drafted set of recommendations for the new Disaster Risk Reduction Program for the Dobrich Municipality (2026-2030)
The Ordinance on Disaster and Accidents Management and municipal strategic documents revised	Achieved. The legal, administrative and policy framework relevant to climate risk management was reviewed and proposals for integration into a key municipal strategic document (MIDP) identified.
At least 1 risk management measure integrated into local development planning (by the end of the project)	Achieved. The project developed recommendations for a climate-risk screening and tagging of municipal capital projects and public procurement measure.
5000 residents, key local and regional authorities, and stakeholders reached through local and national media, incl. social media channels. (accumulative, by the end of the project)	Achieved. By the end of the project, 18383 residents, authorities and stakeholders have been reached through local and national media and social media channels.

Table 6.2 Overview milestones

Milestones	*Progress*
M9 – Submission and acceptance of the report on the review of the local legal, financial and administrative framework	Achieved. The legal, regulatory and institutional framework relevant to climate adaptation and climate risk management was analysed and assessed.
M10 – Review and revision of the municipal disaster risk reduction programme	Achieved. Recommendations and proposed updates were developed to support the integration of climate risks and adaptation measures into the municipal disaster risk reduction programme 2026-2030.
M11 – Amendments to the Ordinance on Disaster and Accidents Management and municipal strategic documents	Achieved. Opportunities for integration of climate resilience considerations into a key strategic planning document (MIDP) identified and proposed.

Milestones	*Progress*
M12 - Attend the CLIMAAX workshop held in Brussels	Planned for January 2027.
M13: Final conference on project results to disseminate findings and recommendations	Achieved. The final conference was held on 24.06.2026. https://www.dobrich.bg/bg/novini/obshtina-grad-dobrich-predstavi-rezultatite-ot-proekt-arkadiya-za-klimatichna-ustoychivost-i-adaptatsiya-kam-klimatichnite-promeni

7. Supporting documentation

Classify and list all outputs produced during this stage. This can include:

- *Main Report (PDF or Word)*

Annex 1: Review and analysis of the legal, administrative and financial framework for managing climate change risks in the Dobrich Municipality
Annex 2: Framework for key amendments in the new municipal disaster risk reduction program of Dobrich municipality 2026-2030
Annex 3: Climate resilience framework for drafting a new Municipal Integrated Development Plan
Annex 4: Climate-risk screening and tagging of municipal capital projects and public procurement

- *Communication Outputs (Press release, media)*

News about the final conference of the project on 24.06.2026.
https://www.dobrich.bg/bg/novini/obshtina-grad-dobrich-predstavi-rezultatite-ot-proekt-arkadiya-za-klimatichna-ustoychivost-i-adaptatsiya-kam-klimatichnite-promeni (municipal website)
https://dobrudjatv.net/novina/obshtina-dobrich-predstavi-rezultatite-i-merkite-za-upravlenie-na-klimatichnite-riskove-po-proekt-arkadiq/13861 (local TV)

Annex 5: Media outreach summary table

All outputs produced must be shared in the Zenodo repository.
For clarity and consistency, arrange the list of outputs in the same order as in Zenodo.

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