

Deliverable Phase 3 – Climate risk management

Adapt on clime change in APV (CLIMACHANGE)

Republic of Serbia / Autonomous Province of Vojvodina

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Abbreviations and acronyms

Abbreviation / acronym	Description
APV	Autonomous Province of Vojvodina
CLIMAAX	CLIMate risk and vulnerability Assessment framework and toolbox
CLIMACHANGE	Adapt on clime change in APV (project acronym)
CRA	Climate Risk Assessment
CRM	Climate Risk Management
DRI	Drought Risk Index
DVI	Drought Vulnerability Index
EI	Exposure Index
LEAP	Local Environmental Action Plan
NUTS	Nomenclature of Territorial Units for Statistics
$P-ET_0$	Precipitation minus reference evapotranspiration
RHMZ	Hydrometeorological Service of Serbia
RPI	Risk Priority Index
SPI / SPEI	Standardised Precipitation Index / Standardised Precipitation Evapotranspiration Index
SSP	Shared Socioeconomic Pathway

Executive summary

This deliverable completes Phase 3 of the CLIMACHANGE project by converting the Phase 2 Climate Risk Assessment into a practical climate risk management framework for the Autonomous Province of Vojvodina. Phase 2 identified relative and agricultural drought as the region's dominant climate risks, with the highest priority assigned to North Banat (RS124) and Central Banat (RS126), followed by South Banat (RS122) and North Bačka (RS125). West Bačka (RS121) and South Bačka (RS123) were assessed as medium-priority areas, while Srem (RS127) provides an important resilience benchmark. The Phase 3 work therefore focused on deciding what should be done, by whom, through which planning instruments, and how progress should be monitored.

The phase combined scientific evidence with structured stakeholder engagement. Seven educational seminars were held between April and June 2026, one in each administrative district of Vojvodina. The seminars presented the Phase 2 results, discussed local risk ownership, collected feedback on existing measures and institutional barriers, and strengthened the capacity of municipal administrations, environmental services, agricultural stakeholders, public utilities, civil protection actors, and other interested parties. Attendance lists, district analyses, a standardised questionnaire, and photo documentation provide the supporting evidence for these activities.

Following the district consultation process, the consolidated project results and proposed adaptation recommendations were presented to policy and decision makers at a dedicated final event held in Novi Sad on 19 June 2026.

The structured district analyses available for quantitative synthesis contain responses from all seven districts. Because several questionnaire items allowed multiple answers, percentages for risk types and support needs refer to shares of selections, while fixed-choice questions refer to shares of respondents. The aggregated results confirm a clear climate-risk hierarchy: drought represented 44.7% of all hazard selections, heatwaves 25.2%, storms 16.4%, and floods 11.5%. Agriculture was consistently identified as the most vulnerable sector, with water management, infrastructure, public health, protected areas, and forestry emerging as secondary concerns depending on district conditions.

The survey also revealed that the principal implementation problem is not the absence of concern, but the gap between awareness of risk and the capacity to act. Across the structured district datasets, 54.5% of respondents did not know whether an updated climate risk assessment existed, 53.7% did not know whether adaptation measures had been integrated into development plans, and 77.2% had no information on adaptation measures already being implemented. A total of 87.8% of respondents considered the public to be either uninformed or only partially informed about climate risks. At the same time, 84.6% supported improving regional and local risk-management plans, indicating strong support among the surveyed stakeholders for further institutional and planning improvements.

Based on the original project objectives, the Phase 2 risk assessment and the Phase 3 stakeholder findings, five primary and six additional operational CRM objectives were defined for Vojvodina. The primary objectives address drought losses, water management, soils and ecosystems, monitoring and preparedness, and the integration of climate risk into planning and investment. The additional objectives address awareness, public health, institutional capacity, financial readiness, equity and the transfer of good practices.

Integration into decision making is proposed through a Provincial Climate Risk and Adaptation Coordination Group, named provincial and municipal CRM focal points, district-level coordination forums, climate-risk screening of plans and capital investments, annual use of CRA indicators in sectoral programmes and a monitoring dashboard linked to defined indicators. Measures should be phased:

governance, data, training, and low-regret actions in the short term; infrastructure modernisation and scalable pilots in the medium term; and systemic transformation of water, agricultural, ecosystem, and urban systems in the long term. Particular attention is required for smallholders, rural and low-income households, women in agriculture, older people, outdoor workers, and municipalities with limited technical and financial capacity.

The main conclusion is that Vojvodina has a strong scientific basis and broad support among participating stakeholders for climate risk management, but implementation remains fragmented and under-resourced. The most immediate value of Phase 3 is the creation of a common decision framework that links risk evidence, locally expressed needs, policy instruments, responsible institutions, and measurable indicators. The next step is to convert the proposed portfolio into costed provincial and municipal action plans reflecting district-sensitive priorities, secure financing, establish regular data exchange, and report progress annually. Detailed engineering design, full economic appraisal, and farm-level vulnerability modelling remain outside the scope of this phase and should be undertaken during implementation.

1. Introduction

1.1 Main objectives of the project

Phase 3 translates the evidence produced in Phases 1 and 2 into a practical climate risk management framework for Vojvodina. Its central objective is to establish an implementable pathway for managing relative and agricultural drought, while also considering related compound and locally relevant risks, including heatwaves, storms, and floods. Rather than repeating the climate risk assessment, Phase 3 uses the Drought Risk Index, Risk Priority Index, district-level maps, and stakeholder feedback to define CRM objectives, measures, institutional responsibilities, assessment indicators, and mechanisms for integration into planning and decision making.

The specific objectives are to: (1) validate the relevance of the Phase 2 priorities through consultations in all seven administrative districts; (2) strengthen the capacity of provincial and local actors to understand and use climate-risk information; (3) identify and assess structural, non-structural, nature-based, social, financial, and governance measures; (4) prepare district-sensitive adaptation recommendations and a Best Practice Guide; (5) define how CRA results and proposed measures can be integrated into provincial and local plans, sectoral programmes, budgets, and investment decisions; and (6) establish a monitoring framework that supports regular evaluation and iterative climate risk management.

Phase 3 also addresses the implementation gap revealed through stakeholder engagement. It therefore places equal emphasis on technical measures and enabling conditions, including institutional coordination, improved access to local data, public communication, professional capacity, access to finance, and the targeted engagement and explicit consideration of vulnerable groups. The intended outcome is a practical foundation for subsequent costed action plans and investment projects, rather than a stand-alone analytical report. The registered Phase 3 delivery targets included seven educational seminars, at least 210 participants, seven communication actions, one best-practice publication, seven regional media articles and seven policy notes.

1.2 Project team

The core project team combined climate-risk analysis, environmental engineering, agriculture, policy development, project management, and stakeholder engagement. Prof. Dr. Sanja Mrazovac Kurilić led climate and environmental interpretation; Prof. Dr. Predrag Ilić supported risk management, environmental engineering, and synthesis of measures; Tatjana Đurić contributed agricultural, water-management, and institutional perspectives; and Teodora Subotić coordinated project implementation, communication, and administrative engagement. Provincial and local authorities, RHMZ and other technical institutions, public utilities, agricultural and civil-protection actors, NGOs, and community representatives contributed through consultations and seminars.

1.3 Outline of the document's structure

Section 2 presents the regional climate risk profile, including priority risks, resilience capacity, the policy context, key actors and systems, and lessons learned from past events. Section 3 defines the CRM objectives, supportive elements, potential measures, and mechanisms for integrating climate risk into planning and decision making. Section 4 evaluates the usability of the results and summarizes the main lessons learned from stakeholder engagement, communication, implementation challenges, and resource use. Sections 5 and 6 present the main conclusions and assess progress against the planned outputs, indicators, and milestones. Section 7 lists the supporting documentation and includes placeholders for selected seminar photographs, while Section 8 provides the references.

2 Local profile

2.1 Summary of Key Risk Assessment results

Phase 2 assessed drought risk across the seven NUTS 3 administrative districts of Vojvodina using two complementary workflows: relative drought and agricultural drought. The assessment combined district-level hazard, exposure and vulnerability indicators with a participatory evaluation of severity, urgency and resilience capacity. The principal reference period was 1981–2015, supported by longer observational records where available. Future conditions were assessed for the near-term SSP1–2.6 scenario (2021–2050) and the far-future SSP5–8.5 scenario (2071–2100). The results show that drought is both a slow-onset process, expressed through cumulative soil drying and declining water availability, and a source of acute compound impacts when severe moisture deficits coincide with heatwaves and prolonged dry periods.

The Key Risk Assessment Evaluation Dashboard established a clear district-level prioritisation. North Banat (RS124) and Central Banat (RS126) were assigned a very high priority, reflecting critical severity, immediate urgency and low resilience capacity. South Banat (RS122) and North Bačka (RS125) were classified as high priority, with critical severity, immediate urgency and medium resilience capacity. West Bačka (RS121) and South Bačka (RS123) were classified as medium priority, while Srem (RS127) received a low priority rating, reflecting moderate severity, a watching-brief urgency category and high resilience capacity.

Under SSP1–2.6, drought intensity and persistence increase, particularly in Banat and southern Bačka, but timely adaptation options remain available. At the regional level, the corresponding urgency category is More Action Needed. Under SSP5–8.5, five districts are projected to reach critical severity, South Bačka substantial severity and Srem limited severity. The regional urgency consequently rises to Immediate Action Needed, reflecting projected long-term yield losses, soil degradation, wetland and riparian-habitat contraction, and increasing competition for water between agriculture and ecosystems.

Phase 3 district engagement broadly confirmed the importance of drought while also identifying related and locally significant risks. Across the seven structured district survey analyses available for comparative synthesis, drought accounted for 44.7% of all hazard selections, heatwaves for 25.2%, storms for 16.4% and floods for 11.5%. South Bačka displayed the most diversified multi-hazard profile, South Banat emphasised drought and storms, while North and Central Banat showed pronounced concern about drought and heat. These differences support a common provincial CRM framework accompanied by district-sensitive implementation priorities.

The resilience assessment distinguishes between the capacity to cope with current events, adapt systems and practices, and transform development pathways. Existing strengths include scientific and technical expertise within RHMZ and research institutions, established canal and water-management systems, provincial agricultural support, and comparatively strong natural and institutional capacities in parts of western and southern Vojvodina. The principal gaps are uneven irrigation coverage, insufficient soil-moisture and groundwater monitoring, fragmented institutional mandates, reactive financing, inconsistent access to data and training, limited risk literacy among local decision makers, and weak engagement of smallholders.

The Phase 3 survey results reinforce the institutional dimension of resilience. More than half of respondents did not know whether updated climate risk assessments existed or whether adaptation measures had been integrated into development plans, while more than three quarters had no information on adaptation measures already being implemented. This information gap limits the ability of institutions to coordinate, replicate, monitor and communicate existing initiatives. Conversely, the strong support for improving

regional and local risk-management plans indicates readiness for change where technical assistance, financing and clearly assigned responsibilities are available.

Priority climate risk	Resilience capacity (low, medium, substantial, high)	Description of the resilience capacity (such as existing knowledge, planned measures, gaps)	Stakeholders, experts and priority groups involved in the key risk assessment & modality of engagement
Relative and agricultural drought	District-specific: Low in North Banat and Central Banat; Medium in South Banat and North Bačka; Substantial in West Bačka and South Bačka; High in Srem.	Strong scientific knowledge, regional datasets and existing canal, drainage and irrigation assets provide an important foundation. Main gaps include uneven irrigation coverage, insufficient soil-moisture and groundwater monitoring, fragmented coordination, reactive financing, limited local use of risk information and weak smallholder engagement. Srem serves as the principal resilience benchmark, while selected practices from South and West Bačka offer additional potential for replication.	Phase 2: Provincial Secretariat for Urban Planning and Environmental Protection, RHMZ, Statistical Office of Serbia, Institute for Agricultural Economics, local governments, agricultural stakeholders and environmental NGOs. Engagement included two in-person sessions and one online validation session, with 35 participants, technical review of maps and indicators, and stakeholder validation of severity, urgency and resilience scoring. Phase 3 follow-up: seven district seminars, standardised questionnaires and facilitated discussions. Priority groups explicitly considered include small and medium-sized farmers, rural women and elderly farmers; their direct participation should be reported only where supported by attendance and participant records.

Heatwaves, storms, flooding and drainage-system overload were identified as relevant compound or locally significant risks through the Phase 2 analysis and Phase 3 district consultations. However, they were not separately scored for severity, urgency and resilience capacity within the Phase 2 Key Risk Assessment Evaluation Dashboard. They are therefore addressed as complementary risks in the CRM measure portfolio, while a separate indicator-based assessment would be required before assigning formal resilience-capacity categories.

2.2 Key implementation mechanisms and policy context for CRM

Climate risk management in Vojvodina operates within a multi-level legal, policy and institutional framework. At national level, the Law on Climate Change and the national programme for adaptation to changed climate conditions provide the general basis for assessing climate impacts, planning and coordinating adaptation measures, and monitoring progress. The Law on Disaster Risk Reduction and Emergency Management governs risk assessment, preparedness, early warning, civil protection, emergency response and recovery. Legislation and policy instruments concerning water management, agriculture and rural development, nature protection, public health, energy, spatial planning, construction and local self-government provide the sectoral mandates through which most CRM measures must be implemented.

At provincial level, the Provincial Secretariat for Urban Planning and Environmental Protection, as the leading institution of the CLIMACHANGE project and within its statutory competences, can support the integration of CRA results into environmental policy, spatial planning, environmental information systems, project preparation and inter-secretariat coordination. The Provincial Secretariat for Agriculture, Water Management and Forestry, public

water-management bodies, agricultural extension services and relevant provincial funds have key responsibilities related to drought management, irrigation, drainage, soil protection and agricultural resilience. Provincial strategies, programmes, annual work plans and budgets are the main instruments for translating adaptation priorities into subsidies, technical assistance, project preparation and investment.

At local level, municipal and city development plans, spatial and urban plans, local environmental action plans, disaster-risk assessments, protection and rescue plans, public-health plans, utility programmes and annual budgets are the principal entry points for CRM. Climate-risk information can be integrated through zoning and land-use provisions, protection of water-retention and ecological areas, requirements for green and blue infrastructure, climate-resilient design of public buildings and utility systems, drought and heat protocols, infrastructure-maintenance programmes, and climate-related criteria for selecting capital projects. Administrative districts can support coordination, knowledge exchange and stakeholder consultation, but formal planning, budgeting and implementation responsibilities remain primarily with provincial and local authorities and competent sectoral institutions.

The recommended approach is to mainstream climate risk into existing planning and investment systems rather than create a separate parallel framework. Relevant investments in irrigation, drainage, transport, public buildings, water supply, wastewater management, agriculture, forestry, health and urban development should be subject to proportionate climate-risk screening. In high-priority districts, screening should assess performance under the near-future and far-future drought and heat conditions evaluated in Phase 2. The results should be documented in project concepts, feasibility studies, environmental assessments, spatial and urban plan revisions, and budget and investment proposals.

Implementation should combine regulatory, programmatic, financial, informational and participatory mechanisms. Regulatory mechanisms include planning conditions, zoning rules, technical standards and permit requirements. Programmatic mechanisms include provincial and local action plans, sectoral programmes and infrastructure-maintenance plans. Financial mechanisms include national, provincial and local budgets, agricultural support schemes, insurance, EU and other international funds, and project-development assistance. Informational mechanisms include regularly updated drought indicators, risk maps, monitoring dashboards, advisory services and public-warning systems. Participatory mechanisms include municipal and district-level consultations, farmer and community meetings, public hearings and targeted engagement with groups that have lower adaptive capacity.

EU policy and financing frameworks provide additional support for implementation, particularly through the EU Mission on Adaptation to Climate Change, Horizon Europe, pre-accession and cross-border cooperation instruments, and relevant agricultural and environmental programmes. The private sector also has an important role through investment in climate-resilient infrastructure and technologies, agricultural insurance, water-efficient production, compliance with climate-related standards and participation in public-private partnerships.

Three institutional improvements are particularly important. First, responsibilities for data provision, monitoring, planning, financing, implementation and reporting should be clearly assigned. Second, data-sharing arrangements should enable RHMZ, provincial and local authorities, water-management bodies, research institutions, public utilities and agricultural services to use compatible datasets and update indicators regularly. Third, adaptation priorities should be linked to multi-year financing and project-development pipelines so that each proposed measure identifies a responsible institution, preparatory requirements, indicative costs, possible funding sources, implementation timeframe and monitoring indicators.

2.3 Key actors and systems for CRM

Engagement was carried out in two linked stages. During Phase 2, two in-person sessions and one online session, involving 35 participants in total, supported risk exploration, technical review of datasets and maps, and validation of the severity, urgency and resilience-capacity assessment. Provincial and local authorities, RHMZ, research and statistical institutions, and agricultural and environmental stakeholders contributed to the interpretation and validation of the CRA results.

Phase 3 brought the assessment closer to the institutions and stakeholders involved in local development, environmental protection, agriculture, water management, public services and emergency management. Seven district seminars were completed in chronological order: South Bačka in Novi Sad on 7 April 2026; Central Banat in Zrenjanin on 17 April; North Banat in Kikinda on 24 April; North Bačka in Subotica on 15 May; West Bačka in Kula on 22 May; Srem in Sremska Mitrovica on 29 May; and South Banat in Vršac on 5 June. The events were documented through attendance lists, questionnaires and photographs. The seven Phase 3 district seminars recorded 229 participant attendances, exceeding the registered KPI target of 210: 33 in West Bačka, 32 in Central Banat, 31 in North Bačka, 40 in North Banat, 30 in South Bačka, 33 in South Banat, and 30 in Srem.

Following the completion of the seven district seminars, a dedicated final event for policy and decision makers was held in Novi Sad on 19 June 2026. The event presented the main findings of the Phase 2 Climate Risk Assessment, the Phase 3 climate risk management framework, district-level stakeholder findings, proposed adaptation measures and recommendations for their integration into provincial and local planning and decision-making processes. The event was documented through a separate attendance list with 43 event attendances. and photographic evidence. It was organised as a distinct dissemination and policy-engagement activity and was not included among the seven district seminars or in the reported total of 229 seminar attendances.

Participants were asked to identify priority risks and vulnerable sectors, assess their knowledge of existing risk assessments and adaptation measures, identify implementation barriers and capacity-building needs, evaluate public awareness, and propose improvements to regional and local plans. The questionnaire results are used as a diagnostic of stakeholder knowledge and institutional readiness, not as statistically representative estimates for the population of Vojvodina. The high proportion of "do not know" and "no information" responses indicates possible gaps in access to documents, institutional communication and the visibility of ongoing adaptation measures; it does not necessarily demonstrate that such assessments or measures do not exist.

Key actors	Role and responsibility	Motivation and needs	Opportunities related to the their active involvement in CRM	Barriers related to the their active involvement in CRM	Type of engagement
Provincial and national policy authorities	Establish the legal and policy framework; coordinate CRA and CRM processes within their respective mandates; integrate climate risk into programmes, budgets and investments; mobilize funding; and monitor and report progress.	Need a common evidence base, clearly assigned responsibilities, cross-sector coordination, practical indicators and a pipeline of technically prepared adaptation projects.	Ability to mainstream climate risk into provincial and national programmes, align sectoral policies, mobilize national and EU funding, and scale successful measures.	Fragmented responsibilities, short planning and budget cycles, reactive financing, competing sector priorities and limited continuity between projects.	**Completed:** Phase 2 policy consultation and validation; participation in Phase 3 seminars and technical discussions. **Proposed follow-up:** formal coordination mechanism, plan revisions and annual CRM review and reporting.
Technical, data, water-management and research institutions	Provide climate, environmental, agricultural and socioeconomic data; develop and update drought indicators and risk maps; operate monitoring, warning, irrigation, drainage and water-management systems; and provide technical and advisory support.	Need interoperable datasets, agreed monitoring protocols, regular data exchange, sufficient technical staff, equipment and clearly assigned responsibilities for indicator updates.	Development of a common monitoring dashboard, regular drought bulletins, improved early warning, better targeting of measures and stronger links between science and policy.	Data gaps, inconsistent spatial and temporal resolution, data-sharing restrictions, fragmented monitoring systems and insufficient infrastructure maintenance.	**Completed:** Phase 2 data provision, technical analysis and validation of indicators and maps; Phase 3 presentations and technical discussions. **Proposed follow-up:** formal data-sharing arrangements and joint monitoring.
Cities, municipalities, public utilities, civil protection, public-health and agricultural services	Integrate CRM measures into local plans and budgets; apply land-use and infrastructure requirements; maintain public systems; implement warnings and emergency protocols; communicate with residents; and monitor local implementation.	Need trained staff, usable local data, practical planning tools, project-preparation support, clearly defined responsibilities and predictable financing.	Direct access to local services, infrastructure, land-use decisions, farmers, schools, businesses and potentially vulnerable households.	Limited specialist staff, high administrative workload, incomplete or outdated documents, uneven technical capacity, weak visibility of existing measures and limited inter-municipal cooperation.	**Completed:** participation in seven district seminars, standardised questionnaires and facilitated discussions. **Proposed follow-up:** local plan reviews, appointment of CRM focal points and preparation of local projects.

Farmers, farmer associations, businesses and financial or insurance actors	*Apply farm- and business-level adaptation measures; invest in water efficiency, soil protection and resilient production; provide information on impacts and losses; and support risk-transfer and financing mechanisms.*	*Need timely warnings, advisory support, affordable technologies, incentives, access to finance and insurance, and measures adapted to farm and business capacity.*	*Demonstration projects, peer learning, rapid uptake of practical measures, investment in resilient technologies and replication of successful approaches.*	*High initial costs, limited access to credit and insurance, fragmented farm structure, unequal access to information and technology, and uncertainty about the benefits of new measures.*	***Completed:** seminar and questionnaire participation where documented in attendance and survey records. **Proposed follow-up:** targeted farmer consultations, demonstration activities, pilot projects and cooperation with insurers and businesses.*
NGOs, schools, community groups, citizens and priority groups	*Communicate climate risks, contribute local knowledge, support environmental education, provide independent feedback and help assess whether CRM measures are accessible and socially equitable.*	*Need clear and accessible information, meaningful opportunities to participate, transparent follow-up and communication adapted to different levels of knowledge and capacity.*	*Public awareness, community learning, wider dissemination of warnings, inclusion of local knowledge and independent monitoring of implementation effects.*	*Underrepresentation of vulnerable groups, unequal digital access, limited time and resources for participation, consultation fatigue and uncertainty about whether feedback influences decisions.*	***Completed:** participation in seminars and questionnaires where documented. **Proposed follow-up:** targeted community and school activities, public consultations and participatory monitoring.*

Risk ownership and coordination: *Risk ownership is shared but differentiated. Provincial authorities are responsible for the regional policy framework and enabling conditions within their respective competences. Cities and municipalities are responsible for many local planning, budgeting and service-delivery decisions. RHMZ, water-management bodies, public utilities, agricultural services and other technical institutions manage relevant data and systems within their mandates. Farmers, businesses, land users and communities influence whether measures are accepted, implemented and maintained. Administrative districts primarily provide a geographic framework for risk assessment, stakeholder consultation and coordination; they are not autonomous planning or budget authorities. A formal inter-institutional coordination mechanism is therefore required, with clearly assigned responsibilities for data provision, decision making, implementation, financing, communication, monitoring and reporting.*

Equity and participation: *Equity requires targeted and evidence-based engagement. Phase 2 identified small and medium-sized farmers as particularly vulnerable to agricultural drought and highlighted rural women and elderly farmers as groups whose participation should be strengthened during Phase 3. These groups should not automatically be described as direct project participants unless their participation is confirmed through attendance lists or other records. Future engagement should therefore be accessible in terms of location, timing, language and format. Participation and benefits should, where data are available and personal-data requirements permit, be monitored by sex, age, farm size, settlement type and stakeholder category. Other vulnerable groups should be included where supported by local risk and socioeconomic evidence, rather than assumed in advance.*

2.4 Lessons learned from past events

Past drought events show that planning based on average climatic conditions is insufficient for managing increasingly variable and extreme conditions. Phase 2 identified 2000, 2003 and 2012 as particularly severe drought years, during which crop-yield reductions in the most exposed areas of northeastern Banat reached approximately 40–50%. The principal lesson is that drought management must begin before visible damage occurs. Seasonal indicators such as SPI, SPEI and $P–ET_0$, together with information on soil moisture, crop condition and available water resources, should be regularly monitored and progressively translated into agreed trigger levels for advisory, operational and financial action. These triggers should guide agricultural advice, irrigation scheduling, water-allocation decisions, emergency preparedness and targeted support to affected producers. A second lesson is that drought cannot be managed as an isolated agricultural event. Its effects may extend from crop production and farm income to soil condition, water availability, ecosystems, public health, infrastructure and rural livelihoods. Heatwaves intensify evapotranspiration and water demand, while intense rainfall following prolonged dry periods may increase surface runoff, soil erosion, drainage-system pressure and localised flooding. Emergency management and long-term adaptation should therefore be coordinated across water management, agriculture, environmental protection, public health, spatial planning, infrastructure and civil protection rather than addressed through separate sectoral responses. A third lesson is that preventive action is more effective and more equitable than repeated post-event compensation. Phase 2 found that existing disaster-related financial mechanisms remain predominantly reactive, while agricultural insurance coverage is limited. Preventive financing should therefore support soil-water retention, efficient irrigation, maintenance of canal and drainage systems, drought-resilient agricultural practices, ecosystem restoration, early warning, professional training and preparation of investment-ready projects. Small and medium-sized farms and municipalities with limited technical and financial capacity require accessible procedures, appropriate co-financing and project-preparation support; otherwise, available resources are more likely to be used by actors that already possess greater adaptive capacity. A fourth lesson concerns the importance of institutional memory, information exchange and visibility of existing measures. Phase 3 consultations showed that many stakeholders lacked information about current risk assessments, adaptation provisions, training opportunities and measures already under implementation. This does not necessarily mean that no action has been taken; rather, it indicates that existing knowledge and activities are not always sufficiently documented, shared or evaluated. Adaptation programmes should therefore include a responsible contact point, an accessible implementation register, regular reporting, compatible data-management arrangements and a mechanism through which users can provide feedback. Improved communication can strengthen coordination and replication even before major new investments are completed.

Finally, past experience confirms that resilient systems depend on diversity, redundancy and cooperation across administrative and sectoral boundaries. Diversified crops and rural income sources, multiple and efficiently managed water sources, healthy soils, connected green and blue infrastructure, maintained drainage and irrigation systems, backup arrangements for essential services, and cooperation among neighbouring municipalities reduce dependence on a single asset, institution or response measure. Srem, with its comparatively high resilience, should serve as the principal learning and demonstration area, while selected practices from South and West Bačka can also inform replication. High-priority districts in Banat require faster investment, stronger institutional coordination and dedicated technical assistance. The Key Risk Assessment identified North and Central Banat, South Banat and North Bačka as the four districts requiring the most immediate intervention. The central lesson is that climate risk management in Vojvodina must shift from event-by-event reaction toward an anticipatory, trigger-based and multi-sector system that combines early warning, preventive investment, emergency preparedness, institutional coordination and protection of groups with lower adaptive capacity.

3 Climate risk management – phase 3

3.1 CRM objectives

Based on the Phase 2 Climate Risk Assessment and the Phase 3 stakeholder process, five primary and six additional operational CRM objectives have been defined for Vojvodina. The primary objectives directly address relative and agricultural drought, the underlying drivers of vulnerability, and the institutional conditions required for implementation. The additional objectives support public health, awareness, professional capacity, financial readiness, equity and the transfer of good practices. Because Phase 3 focused on assessment, consultation, capacity building and CRM framework development rather than physical implementation, the indicators distinguish between: (i) Phase 3 delivery indicators that have already been achieved; (ii) implementation indicators for subsequent provincial and local action; and (iii) risk-reduction outcome indicators whose baselines must be established before numerical targets are formally adopted. No unverified estimates of annual drought or flood damage are used. Indicators should be reported by administrative district and, where relevant and legally permissible, disaggregated by sex, age, farm size, income group, settlement type and stakeholder category. Baselines that are not yet available should be established during the first annual CRM monitoring cycle, after which competent provincial and local authorities should adopt time-bound targets.

Primary objectives	*Examples of assessment indicators*
Reduce present and future drought losses in agriculture and rural livelihoods	***Verified risk baseline:** four districts identified as requiring the most immediate intervention: North Banat (RS124), Central Banat (RS126), South Banat (RS122) and North Bačka (RS125).* *Number of the four priority districts covered by costed drought-adaptation packages incorporated into relevant provincial or local plans.* *Annual wheat and maize yields monitored in all seven districts **(t/ha and % deviation from the agreed district baseline)**.* *Agricultural area exposed to high or very high drought risk **(ha and % of agricultural land)**.* *Number and agricultural area of farms applying drought-resilient crops, adjusted sowing dates, soil-moisture conservation, advisory services or agricultural insurance **(number, ha and %)**.* *Annual drought-related agricultural losses **(ha affected, tonnes of production lost and EUR)**, once a common loss-assessment methodology has been adopted.*
Improve water retention, water-use efficiency and drought preparedness	*Irrigated agricultural area **(ha and % of arable land)**, based on a harmonised official baseline to be confirmed before the first monitoring cycle.* *Area using efficient irrigation technologies **(ha and % of irrigated area)**.* *Water use and water savings following modernisation **(m^3/ha and %)**.* *Water-retention or storage capacity created, restored or made operational **(m^3)** and agricultural or settlement area served **(ha)**.* *Length of canal, irrigation and drainage infrastructure assessed, maintained, rehabilitated or modernised **(km)**.* *Number and percentage of priority municipalities applying agreed drought thresholds or triggers in water-management, agricultural-advisory or emergency procedures.*

Protect soils, ecosystems, water resources and long-term food-production capacity	*Agricultural area under soil-cover, organic-matter restoration, reduced tillage, erosion-control, shelterbelt, agroforestry or related soil-protection measures **(ha and % of agricultural area)**.* *Soil organic carbon **(%)**, soil-moisture conditions and erosion indicators at selected monitoring sites.* *Area of wetlands, riparian zones, ecological corridors and other water-retention ecosystems protected or restored **(ha or km²)**.* *Water-quality or ecological-status class at selected river, canal and wetland monitoring locations.* *Yield variability of major crops during drought years compared with the agreed reference period **(%)**.* *Number and area of implemented measures demonstrating combined agricultural, water-management and ecosystem benefits.*
Strengthen drought monitoring, early warning and operational preparedness	*Proposed implementation target: all 7 of 7 administrative districts covered by regular monitoring of relevant indicators, including SPI, SPEI, $P–ET_0$ and consecutive dry days, where the required data are available.* *Proposed implementation target: one common provincial climate-risk monitoring framework established and operationalised through regular data updates.* *Number of seasonal drought bulletins, warnings and agricultural advisories issued annually.* *Number and percentage of municipalities, agricultural services, water-management bodies and other institutions receiving and using climate-risk information.* *Number of municipalities with predefined drought-response, water-restriction, agricultural-advisory or emergency procedures.* *Average time between the detection of an agreed threshold exceedance and communication of an operational warning.*
Integrate climate risk management into planning, investment, financing and institutional coordination	*District-specific CRM recommendations prepared for **7 of 7 administrative districts**.* *Number of provincial and local development, environmental, spatial, urban, agricultural, water-management and disaster-risk documents incorporating CLIMAAX results.* *Percentage of priority CRM measures with an assigned responsible institution, implementation period, indicative cost, potential financing source and monitoring indicator **(proposed CRM standard: 100%)**.* *Number and total value of capital and infrastructure projects subjected to proportionate climate-risk screening **(number and EUR)**.* ***Institutional knowledge baselines:** 54.5% of surveyed respondents did not know whether an updated climate risk assessment existed; 53.7% did not know whether adaptation measures had been integrated into development plans; and 77.2% had no information on measures already being implemented. Direction of change: decrease; formal targets to be adopted during the first annual monitoring cycle.* *Number of institutions regularly providing data and participating in inter-sectoral CRM coordination and reporting.*

Additional objectives	Examples of assessment indicators
Public awareness, participation and risk communication	***Verified Phase 3 outputs**: seven district seminars completed and 229 participant attendances recorded. Stakeholder questionnaires from all seven administrative districts were analysed.* *Baseline: **87.8%** of respondents considered the public to be uninformed or only partially informed about climate risks. Direction of change: decrease; formal target to be adopted during the first monitoring cycle.* *Baseline: **84.6%** of respondents supported improving regional and local risk-management plans.* *Number and diversity of stakeholders participating in CRM consultations, by district and stakeholder category.* *Number of residents and organisations reached through warnings, guidance materials, websites, media, schools and community activities.* *Percentage of surveyed stakeholders able to identify the main local risks and appropriate protective actions.*
Public health and complementary multi-hazard preparedness	*Number of municipalities with adopted heat-health action plans, warning procedures or summer-response protocols.* *Heat-related hospitalizations or emergency interventions **per 100,000 inhabitants**, where consistent health data are available.* *Number and percentage of vulnerable residents reached by drought and heatwave warnings.* *Number and percentage of outdoor workplaces and relevant public institutions applying heat-protection procedures.* *Number of critical facilities and public-service systems assessed for drought, heat, storm, drainage and flood risks.* *Number and duration of climate-related interruptions to water supply, health, energy and other essential services.*
Institutional learning and professional capacity	*Number of staff trained, by institution, administrative district and professional category.* *Percentage of trained participants who subsequently apply CLIMAAX indicators, maps, CRM guidance or climate-screening procedures in their work.* *Number of institutions regularly contributing data to the common monitoring framework.* *Number of repeat or refresher training sessions organised to address staff turnover and knowledge retention.* *Number of standard operating procedures, guidance notes, templates and technical tools adopted or used by provincial and local institutions.* *Frequency of formal inter-institutional coordination meetings **(number/year)**.*
Financial readiness and an investable adaptation-project pipeline	*Number and total value of technically prepared, costed and finance-ready CRM projects **(number and EUR)**.* *Annual national, provincial, local, EU and other external financing mobilised for preventive adaptation **(EUR/year)**.*

	Ratio of preventive adaptation expenditure to post-event compensation and emergency expenditure. *Number and percentage of small municipalities and small or medium-sized farms receiving project-preparation, technical or financial support.* *Number and percentage of priority measures for which lifecycle costs, maintenance requirements and potential funding sources have been identified.* *Number and value of approved projects targeting the four highest-priority districts.*
Justice and equity	*Vulnerable groups and critical livelihoods explicitly assessed in all district-specific CRM recommendations* ***(proposed CRM standard: 100%)****.* *Participation documented by sex, age, stakeholder category, farm size and settlement type, where legally permissible and supported by available data.* *Number and percentage of small and medium-sized farms, rural women, elderly farmers, low-income rural households and municipalities with limited capacity receiving targeted support.* *Affordability of irrigation, agricultural insurance, water, cooling and other adaptation measures for users with lower financial capacity.* *Percentage of priority measures assessed for distributional effects, accessibility and maladaptation risks.* *Number of cases in which stakeholder feedback resulted in a documented change to the design, prioritisation or implementation of a CRM measure.*
Replication, innovation and regional cooperation	*One regional* ***Best Practice Guide for Climate Adaptation in Vojvodina*** *prepared and made available to relevant users.* *Number of good practices documented in Srem and other comparatively resilient areas.* *Number of documented practices transferred, piloted or scaled in high- and very-high-priority districts.* *Number of inter-municipal or inter-institutional cooperation arrangements supporting CRM implementation.* *Number of open datasets, indicators, methods, templates or guidance products reused in other districts or regions.* *Number of pilot measures evaluated for effectiveness, feasibility, costs, co-benefits, equity and possible maladaptation.*

Justice and equity should be treated as cross-cutting requirements throughout the CRM process. Particular attention should be given to small and medium-sized farmers, rural women, elderly farmers, low-income rural households and municipalities with limited technical and financial capacity. Participation should not be assessed only through attendance figures; monitoring should also determine whether the needs of groups with lower adaptive capacity influenced priorities, whether proposed measures are affordable and accessible, and whether benefits and costs are distributed fairly.

3.2 Supportive elements for effective CRM

Effective climate risk management requires more than individual adaptation measures. It depends on an enabling system that connects climate and socioeconomic evidence, technical infrastructure, institutional responsibilities,

financing, public communication and stakeholder participation. Phase 2 confirmed that Vojvodina possesses important scientific, technical and institutional capacities, while Phase 3 identified persistent gaps in access to information, local implementation capacity, coordination, preventive financing and the visibility of existing measures. The supportive elements presented below should therefore be developed as an integrated package. Their purpose is to enable provincial and local authorities, technical institutions, service providers, businesses, farmers and communities to translate climate-risk information into timely, financed and accountable action.

Supportive elements for effective CRM	*Description*
Knowledge, data and institutional capacity	*Establish a common provincial climate-risk information framework building on the Phase 2 indicators, maps and datasets. It should progressively integrate SPI, SPEI, P–ET_0, consecutive dry days, temperature and heat indicators, soil moisture, crop conditions, irrigation, groundwater and surface-water information, and locally relevant storm and flood data.* *Agree responsibilities for data provision, validation, storage and updating among RHMZ, provincial authorities, water-management bodies, statistical and research institutions, agricultural services and municipalities. Define update frequency, quality-control procedures, metadata, confidence levels, access conditions and data-protection requirements.* *Address identified gaps in high-resolution soil, groundwater, irrigation, farm-level vulnerability and socioeconomic data. Maintain transparent and reproducible analytical workflows and a shared repository for maps, indicators, methods and monitoring results.* *Provide regular training for provincial and local staff so that they can interpret risk information, apply indicators and use results in plans, budgets, project preparation and operational decisions rather than only receive completed maps and reports.*
Technology, monitoring systems and resilient infrastructure	*Strengthen the connection between RHMZ forecasts and warnings, remote-sensing products, local monitoring, water-management information, agricultural advisory services and municipal communication systems. Develop agreed thresholds and procedures that translate monitoring results into warnings, advice and operational action.* *Conduct condition and climate-risk audits of irrigation and drainage systems, canals, water-supply and wastewater systems, critical public buildings, health facilities, emergency systems and other exposed infrastructure. Audits should identify maintenance needs, service interruptions, adaptation options, responsible institutions and investment priorities.* *Prioritise maintenance and rehabilitation before unnecessary new construction and ensure that new infrastructure is assessed against future drought, heat and hydrological conditions. Combine grey infrastructure with green-blue and nature-based solutions where these provide water retention, cooling, soil protection, biodiversity and flood-management benefits.* *Include lifecycle costs, operation, maintenance, technical staffing and long-term data availability in the design of every monitoring or infrastructure investment.*
Social and behavioural conditions	*Support behavioural change through practical advice, demonstration sites, peer learning, extension services, clear incentives and visible evidence of benefits. Priority practices include efficient water use, soil-moisture conservation, climate-resilient crop selection, adjusted sowing and working schedules, maintenance of local infrastructure, compliance with warnings and preparedness procedures.*

	Recognise that behavioural change depends on affordability, land tenure, farm size, access to finance, insurance, technology and trusted professional advice. Information campaigns alone will not produce sustained change where actors lack the resources or authority to act. *Use trusted intermediaries, including agricultural advisers, farmer associations, health services, schools, civil-protection actors, NGOs and local community organisations. Clearly communicate uncertainties, responsibilities and the consequences of both action and inaction.*
Citizen and stakeholder engagement	*Continue the province-wide engagement process initiated through the seven Phase 3 district seminars. Future consultations should combine a common methodological framework with locally specific evidence, risks and implementation questions.* *Use municipal and district-level consultation forums, farmer and community meetings, public hearings, schools, NGOs, professional organisations and accessible digital channels. District-level forums should support coordination and knowledge exchange, while formal decisions remain with competent provincial, municipal and sectoral authorities.* *Provide participants with concise evidence materials before consultations and use facilitated exercises to identify and assess measures, responsibilities, barriers and financing needs. Publish a summary of what was heard, how stakeholder input affected decisions, which proposals were accepted or rejected, and who is responsible for follow-up.* *Apply targeted outreach to small and medium-sized farms, rural women, elderly farmers, low-income households and municipalities with limited capacity. Participation should be accessible in terms of location, timing, language, format and cost.*
Financing, human resources and project-preparation capacity	*Establish a multi-year adaptation investment and project-development pipeline linking priority risks to measures, responsible institutions, indicative costs, preparatory requirements, potential funding sources and implementation periods.* *Combine national, provincial and local budgets with EU and other international funds, agricultural support schemes, insurance mechanisms and appropriate private investment. Where feasible, identify relevant budget expenditure as preventive adaptation expenditure to improve transparency and monitoring.* *Finance not only construction and equipment but also feasibility studies, technical designs, environmental assessments, cost–benefit and distributional analyses, permitting, training, maintenance and monitoring. Lack of project preparation should not prevent high-priority measures from accessing available funds.* *Provide targeted co-financing, technical assistance and simplified support to municipalities with limited administrative capacity and to small and medium-sized farms that cannot independently prepare projects or finance initial investments.*
Governance arrangements and political leadership	*Build on existing legal mandates rather than create a parallel administrative system. Establish a formal provincial coordination mechanism for climate risk management, led by or anchored within the competent provincial authorities and involving agriculture, water management, environmental protection, spatial planning, health, civil protection, finance, research and local-government representatives.* *Designate a provincial coordination contact and named CRM focal points in participating cities, municipalities and relevant sectoral institutions. Administrative districts may be used as territorial platforms for consultation, coordination and exchange, but they should not be assigned planning or budget responsibilities they do not legally possess.*

	Clearly assign responsibilities for data provision, risk assessment, planning, implementation, financing, communication, maintenance, monitoring and reporting. Establish procedures for escalation when agreed risk thresholds are exceeded or when implementation delays threaten priority objectives. *Integrate proportionate climate-risk screening into relevant plans, programmes, project concepts, procurement, investment appraisal and budget preparation. Ensure political sponsorship, administrative continuity and regular reporting beyond the duration of the CLIMACHANGE project.*
Monitoring, evaluation, learning and adaptive management	*Establish an annual CRM monitoring cycle based on the objectives and indicators defined in Section 3.1. The cycle should review changes in risk, implementation progress, expenditure, barriers, distribution of benefits and emerging evidence.* *Maintain an accessible register of adaptation measures and projects, including implementation status, responsible institution, funding, indicators, maintenance requirements and results. Distinguish between planned, financed, initiated, completed and operational measures.* *Evaluate pilot measures before replication, considering effectiveness, feasibility, costs, environmental and social co-benefits, equity, maintenance requirements and potential maladaptation. Document both successful and unsuccessful approaches.* *Use monitoring results to revise priorities, plans, investment pipelines and operating procedures. Regular learning should be institutionalised through annual reviews, updated guidance, staff refresher training and exchange of practices between higher- and lower-resilience areas.*

The effectiveness of these elements depends on how they interact. An early-warning platform has limited value unless indicators are linked to agreed thresholds, trained staff, local communication channels and actions that farmers, utilities and public services can realistically implement. Similarly, an adaptation fund or call for proposals will underperform if potential beneficiaries lack updated evidence, prepared project concepts, technical documentation or staff capable of completing applications. A minimum enabling package should therefore be established across Vojvodina. At provincial level, it should include a designated coordination mechanism, a shared climate-risk information framework, an annual progress review and a consolidated register of priority measures and projects. At city and municipal level, it should include a named CRM focal point, access to relevant risk data, an annual multi-sector review, a local register of measures and projects, a staff-training plan and a public communication protocol. District-level forums should facilitate coordination among municipalities and institutions operating within the same risk area. Support should be differentiated according to risk and resilience capacity. North Banat and Central Banat require the most intensive technical assistance and accelerated project preparation because of their very high priority and low resilience. South Banat and North Bačka also require high-priority support, particularly for water management, agricultural resilience, infrastructure and multi-hazard preparedness. West Bačka and South Bačka should focus on preventive strengthening and scaling existing practices, while Srem should support demonstration, peer learning and the transfer of good practices without reducing its own monitoring efforts. Phase 2 identified these four Banat and northern districts as requiring the most immediate intervention. The central enabling principle is that physical investments and institutional measures must be implemented together. Water retention, irrigation, drainage, soil restoration, green-blue infrastructure and protection of critical services will not achieve their intended results without reliable data, trained personnel, financing, coordination, communication and long-term maintenance. Conversely, plans, training and coordination alone will not reduce climate risk unless they lead to financed and operational measures.

3.3 Potential CRM measures

The Phase 2 Climate Risk Assessment formally identified relative drought and agricultural drought as the priority climate risks for Vojvodina. Relative drought refers to recurring and progressively intensifying precipitation and water-balance deficits, while agricultural drought concerns the effects of insufficient soil moisture and the P–ET_0 imbalance on crops, agricultural production and rural livelihoods. Heat extremes and hydrological drought were considered as factors that may intensify these risks rather than as separate risk workflows.

The proposed CRM portfolio therefore focuses on reducing drought hazard, exposure and vulnerability through a combination of structural, technological, nature-based, operational, social, financial and governance measures. The portfolio also covers investments that are not primarily classified as adaptation projects but that must include a climate-adaptation component because of their long operational life or their importance for essential services. These include new or reconstructed buildings, roads, water-supply and wastewater systems, agricultural facilities, public spaces and other infrastructure.

The qualitative effectiveness ratings reflect the expected contribution to risk reduction when measures are properly located, designed, financed, operated and maintained. They do not replace feasibility studies, engineering design, environmental assessment, cost–benefit analysis, distributional assessment or formal approval procedures. Final measure selection should also consider local conditions, climate scenarios, institutional capacity, affordability and the risk of maladaptation.

Key climate risk	*CRM measure*	*Effectiveness / Risk reduction (high, medium, low)*	*Contribution to CRM objectives*	*Possible co-benefits*	*Timeline (short, medium, long term)*	*Responsible organisation*	*Possible adaptation limits*
Relative drought	***Integrated drought monitoring, early warning and operational triggers.*** *Regularly update SPI, SPEI, P–ET_0, consecutive dry days and, where available, soil-moisture, surface-water and groundwater indicators. Define graduated drought thresholds and connect them to agricultural advisories, water-management decisions,*	***Medium–High.*** *Monitoring alone has limited effect, but effectiveness becomes high when agreed*	*Strengthens drought preparedness; improves institutional coordination; enables earlier intervention; reduces avoidable losses;*	*Improved climate services; better use of public resources; reduced emergency expenditure; stronger links between RHMZ, authorities,*	***Short term:*** *define indicators, responsibilities and triggers.* ***Medium term:*** *establish regular operational use and information exchange.* ***Long term:*** *continuously*	*RHMZ; Provincial Secretariat for Urban Planning and Environmental Protection; Provincial Secretariat for Agriculture, Water Management and Forestry; JVP "Vode Vojvodine"; cities and municipalities;*	*Data gaps, incompatible datasets and irregular updating may limit reliability. Warnings have little value where users lack the financial or technical capacity to act. Communication must include non-digital channels so that*

	irrigation scheduling, preparedness procedures and targeted support. Establish clear responsibilities for data provision, validation, communication and response.	*thresholds automatically initiate operational and financial action.*	*supports evidence-based water allocation and planning.*	*advisers, utilities and farmers.*	*update thresholds and monitoring systems.*	*agricultural extension and research institutions.*	*older farmers and rural communities are not excluded.*
Relative drought	***Regional, local and landscape water retention.*** *Protect and restore wetlands, riparian areas, natural depressions, floodplains where appropriate, shelterbelts and other areas that retain water. Develop small-scale farm and settlement retention, rainwater harvesting, infiltration areas and multipurpose storage where hydrologically and environmentally justified. Assess the operation of canals and drainage systems for both water removal and drought-period retention without compromising their primary functions.*	***High*** *where measures are located on the basis of hydrological assessment and combined with land-use protection and maintenance.*	*Improves water availability; reduces the speed of runoff; supports groundwater recharge where appropriate; protects ecosystems; strengthens resilience to prolonged dry periods.*	*Biodiversity protection; improved water quality; erosion control; carbon storage; reduced local flood and drainage pressure; landscape and recreational benefits.*	***Short term:*** *mapping, protection of existing retention areas and preparation of projects.* ***Medium term:*** *implement local and farm retention measures.* ***Long term:*** *develop landscape-scale retention and ecological restoration.*	*Provincial and local water-management, environmental and spatial-planning authorities; JVP "Vode Vojvodine"; municipalities; public utilities; landowners; agricultural and nature-protection institutions.*	*Retention capacity is limited during prolonged regional drought. Measures may require land or changes in land use and must not transfer risk upstream or downstream. Land restrictions and compensation must be transparent and fair. Ecological flows, water quality and groundwater sustainability must be protected.*
Agricultural drought	***Efficient irrigation and farm water management.*** *Audit the condition and performance of existing irrigation assets; rehabilitate priority infrastructure; reduce leakage;*	***High*** *for irrigated areas when combined with soil-moisture*	*Reduces crop losses and production variability; improves water-use*	*Higher resource efficiency; improved production stability; reduced emergency*	***Short term:*** *infrastructure and water-demand audits, maintenance and design.*	*Provincial agriculture and water-management authorities; JVP "Vode Vojvodine"; municipalities;*	*Available water may become insufficient under severe or prolonged drought. Poorly managed irrigation may increase*

	improve irrigation scheduling; introduce efficient systems suited to crop, soil and farm conditions; improve measurement of water abstraction and use; and strengthen collective or shared solutions where individual systems are not feasible. New irrigation development should be based on verified water availability under current and future climate conditions.	*conservation, advisory services, sustainable water allocation and long-term maintenance.*	*efficiency; supports food production and rural livelihoods; increases farm-level adaptive capacity.*	*compensation; potential energy savings where systems are properly designed; stronger cooperation among water users.*	***Medium term:** rehabilitation and expansion of efficient systems in priority areas.* ***Long term:** integrated and climate-resilient irrigation management.*	*agricultural extension services; irrigation organisations; farmers and farmer associations; research institutions.*	*salinisation, soil degradation, energy consumption or groundwater depletion. Efficiency improvements can lead to greater total consumption if water use is not controlled. Subsidies and access should not disproportionately benefit large agricultural holdings.*
Agricultural drought	***Soil-water conservation and nature-based agricultural measures.** Increase soil cover, crop rotation, organic-matter restoration, conservation or reduced tillage, erosion control, shelterbelts, agroforestry and other practices that improve soil structure and water retention. Protect fertile soils from degradation, compaction and inappropriate land conversion. Demonstration plots and advisory support should be adapted to local soils and production systems.*	***High** as a combined and sustained package; the effectiveness of individual practices varies by soil, crop and management conditions.*	*Increases soil-water retention; reduces crop sensitivity; protects long-term food-production capacity; limits erosion and land degradation; supports ecosystem resilience.*	*Soil-carbon storage; improved fertility; biodiversity; reduced nutrient loss; better water quality; wind protection; reduced erosion and lower long-term production costs.*	***Short term:** demonstrations, training and low-cost soil-cover measures.* ***Medium term:** broader uptake supported by incentives.* ***Long term:** restoration of soil functions at farm and landscape scale.*	*Provincial agricultural and environmental authorities; agricultural extension services; research institutions; municipalities; farmers and farmer associations; forestry and nature-protection organisations.*	*Benefits may take several seasons to become measurable. Initial costs, lack of machinery, fragmented parcels and insecure tenure may limit adoption. Recommendations must be adjusted to local soils and must not be applied as a single uniform package throughout Vojvodina. Small farms require additional technical and financial support.*

Agricultural drought	***Climate-resilient crops, production systems and rural livelihoods.*** *Support crop and variety diversification, drought-resilient varieties, adjusted sowing dates, crop rotations, climate-informed livestock and fodder management, farm contingency plans and diversified income sources. Strengthen agricultural advisory services, professional training, peer learning, agricultural insurance and preventive financial support. Develop targeted support for small and medium-sized farms and climate-sensitive rural livelihoods.*	***Medium–High.*** *Effectiveness increases when agronomic measures are combined with water, soil, advisory and financial measures.*	*Reduces yield and income variability; protects rural employment and livelihoods; improves recovery capacity; reduces dependence on a single crop, income source or response mechanism.*	*Greater farm competitiveness; improved knowledge transfer; innovation; rural economic diversification; reduced dependence on post-event compensation; improved food security.*	***Short term:*** *advisory services, training, contingency planning and pilot practices.* ***Medium term:*** *expand financial incentives, insurance and diversified production.* ***Long term:*** *transform vulnerable production and livelihood systems.*	*Provincial agricultural authorities; agricultural extension and veterinary services; farmers and farmer associations; research institutions; insurers; banks and development funds; municipalities and rural-development organisations.*	*Drought-resilient crops may face market, processing or consumer constraints. Insurance may be unaffordable or unavailable for smaller producers. Diversification requires knowledge, investment and market access. Measures should explicitly protect smallholders, agricultural workers, rural women, elderly farmers and livestock producers with limited adaptive capacity.*
Relative and agricultural drought	***Climate-proofing of conventional and long-lived investments.*** *Require proportionate climate-risk screening for new and substantially reconstructed buildings, roads, public spaces, water-supply and wastewater systems, energy systems, health and educational facilities, agricultural storage and processing facilities,*	***High over the lifetime of an asset****, because the measure prevents the creation of new exposure and reduces*	*Integrates climate risk into planning and investment; protects public assets and essential services; reduces future vulnerability;*	*Lower lifecycle costs; energy and water efficiency; improved indoor comfort and health; service continuity; reduced repair costs; better-*	***Immediate application*** *to project concepts, feasibility studies and designs.* ***Medium to Long term:*** *progressive retrofitting and replacement of existing assets.*	*Provincial and local planning, construction, environmental and sectoral authorities; investors; public procuring bodies; public utilities; infrastructure owners; designers; engineers; financial institutions and permitting authorities.*	*Future climate conditions and design parameters contain uncertainty, but this should not justify ignoring foreseeable risk. Higher initial costs and weak enforcement may limit application. Adaptation components must not*

	livestock buildings and other critical infrastructure. Designs should consider future heat, drought, water availability, drainage requirements, passive cooling, shade, water efficiency, backup systems, fire safety and service continuity.	*future retrofit and repair costs.*	*prevents maladaptive development and infrastructure lock-in.*	*quality public space.*			*create unaffordable housing, services or operating costs or transfer the financial burden disproportionately to low-income users.*
Relative and agricultural drought	***Governance, financing, institutional capacity and inclusive participation.** Clarify responsibilities for monitoring, planning, implementation, financing, communication and reporting. Designate competent provincial and municipal CRM focal points; formalise data sharing; establish registers of measures and projects; integrate drought risk into relevant programmes, budgets and investment decisions; and prepare multi-year project pipelines. Provide professional training, technical assistance, communication and stakeholder consultations, with targeted project-preparation and co-financing support for low-capacity municipalities and smaller farms.*	***Medium as a stand-alone intervention; High as an enabling framework** for structural, nature-based, technological and social measures.*	*Supports all CRM objectives; improves coordination, investment readiness, accountability, continuity and equitable access to adaptation measures.*	*Better project quality; improved use of national and EU funds; institutional learning; public trust; replication of effective practices; lower reactive expenditure.*	***Short term:** responsibilities, coordination, training and project concepts.* ***Medium term:** integration into plans, budgets and financing pipelines.* ***Long term:** institutionalised annual monitoring and adaptive management.*	*Government of the Autonomous Province of Vojvodina; competent provincial secretariats; cities and municipalities; RHMZ; JVP "Vode Vojvodine"; agricultural, environmental, research, health and civil-protection institutions; NGOs; farmer organisations; financial and insurance institutions.*	*Fragmented mandates, political and staff turnover, short budget cycles and insufficient project-preparation capacity may weaken implementation. Better-organised or wealthier actors may obtain a disproportionate share of support. Participation must be accessible, transparent and linked to documented decisions rather than treated only as consultation.*

Complementary and compound risk considerations: *Although Phase 2 formally prioritised relative and agricultural drought, CRM measures should also consider related climate pressures. Heat extremes increase evapotranspiration, crop stress, water demand and risks to public health, livestock and outdoor workers. Storms, intense rainfall, flooding and drainage-system overload were identified as locally relevant concerns during Phase 3 consultations. These risks should be addressed through climate-proofing and measures with multiple benefits, such as healthy soils, wetlands, water-retention areas, permeable surfaces and well-maintained canal and drainage systems. Measures should avoid trade-offs: water retention must not reduce drainage safety, while drainage investments should not unnecessarily remove water that could be retained for dry periods.* ***Measure selection principles:*** *Priority should be given to no-regret and low-regret measures that remain beneficial under different climate scenarios and do not create long-term dependence on unsustainable water, energy or land use. Each measure should be assessed against: expected risk reduction; technical and institutional feasibility; compatibility with water and environmental limits; investment, operation and maintenance costs; social and environmental effects; co-benefits, trade-offs and maladaptation risks and flexibility, scalability and long-term financing. A measure should be considered adaptation only where it demonstrably reduces hazard, exposure or vulnerability without transferring unacceptable risks to other groups, sectors, ecosystems or locations. Equity should be considered throughout design, financing and implementation. Particular attention is required for small and medium-sized farms, rural women, elderly farmers, low-income households, outdoor workers and municipalities with limited technical and financial capacity.*

District-sensitive implementation priorities: North Banat and Central Banat *require the earliest and most intensive support because of their very high priority and low resilience. Initial action should focus on improved drought and soil-moisture information, water and infrastructure audits, irrigation and canal planning, soil-water retention, technical assistance and preparation of finance-ready projects.* ***South Banat and North Bačka*** *require early implementation of integrated agricultural, soil and water-management measures. Priorities include efficient water use, soil protection, agricultural advisory services, infrastructure assessment, professional training and improved access to preventive financing.* ***West Bačka and South Bačka*** *should focus on preventive strengthening, project preparation and the evaluation and replication of effective local practices. Existing measures should be documented and assessed before wider application.* ***Srem*** *should serve as a resilience reference and learning area. Its comparatively high resilience provides opportunities for documenting good practices, testing indicators and supporting peer exchange, while continued drought and heat monitoring remains necessary.*

Implementation sequence: Short term – 0 to 2 years: *clarify responsibilities and focal points; complete priority data and infrastructure audits; harmonise indicators and baselines; define drought thresholds and response procedures; strengthen seasonal advisories; train staff; prepare costed project concepts; and introduce low-cost measures such as soil cover, maintenance, shade and water-efficiency improvements.* ***Medium term – 3 to 5 years:*** *rehabilitate priority irrigation, canal and drainage systems; expand sustainable water retention and efficient irrigation; implement nature-based and green-blue infrastructure; scale effective soil and crop measures; strengthen preventive financing and insurance; and apply climate-risk screening to major investments.* ***Long term – 5 to 10 years and beyond:*** *develop climate-resilient water, agricultural, ecosystem, infrastructure and settlement systems through sustainable water allocation, landscape restoration, resilient rural economies, climate-proof infrastructure and institutionalised adaptive management. Measures should be periodically reviewed as climate evidence, technology and implementation experience improve.*

3.4 Integration into planning and decision making

The Phase 2 Climate Risk Assessment provides a harmonised evidence base for integrating relative and agricultural drought risk into planning and investment decisions in Vojvodina. The risk maps, Drought Risk Index, Risk Priority Index and district-level prioritisation should be translated into concrete planning requirements, budget priorities, responsible institutions and monitoring indicators. Integration should follow a clear chain from risk evidence and CRM objectives to measure selection, financing, implementation and evaluation. The CRA results should be mainstreamed into existing provincial and local instruments rather than implemented through a separate planning system. Relevant entry points include provincial environmental, agricultural, water-management and spatial-planning programmes, as well as municipal development plans, spatial and urban plans, Local Environmental Action Plans, disaster-risk assessments, protection-and-rescue plans, utility programmes and annual budgets. Administrative districts should be used for territorial analysis, comparison and coordination, while formal planning and budget responsibilities remain with provincial authorities, cities, municipalities and competent sectoral institutions.

Spatial and urban plans should use CRA maps as analytical layers to identify drought-prone agricultural land, water-retention areas, irrigation and drainage corridors, vulnerable ecosystems and exposed infrastructure. Planning provisions should prevent new exposure, protect soil and water-retention functions and require climate-resilient design for new buildings, roads, public facilities, water systems and other long-lived investments. Agricultural programmes should prioritise efficient irrigation, soil-water conservation, crop diversification, advisory services, insurance and targeted assistance to small and medium-sized farms. Water-management programmes should jointly address scarcity, irrigation demand, drainage, ecological flows and sustainable water allocation. Relevant capital projects should undergo climate-risk screening proportionate to their cost, location and lifespan. Screening should consider the historical baseline and the future scenarios applied in Phase 2, identify necessary adaptation features, assess residual risk and define operating and maintenance requirements. Provincial and local authorities should maintain a rolling three- to five-year pipeline of priority projects showing preparation status, responsible institution, indicative cost, possible funding source, implementation period and monitoring indicators. Important synergies exist where measures simultaneously improve water security, soil condition, biodiversity, public health and rural livelihoods. Potential tensions include irrigation expansion versus ecological flows, drainage versus water retention, provincial standardisation versus local flexibility, and short budget cycles versus long-term climate risks. These tensions should be addressed through transparent criteria, cross-sector review, stakeholder consultation and environmental and distributional safeguards.

Phase 2 produced new harmonised drought indicators, scenarios, maps and district-level risk priorities, while Phase 3 added evidence on stakeholder knowledge, barriers and implementation needs. Further improvements require higher-resolution soil-moisture and groundwater observations, harmonised irrigation and crop-yield records, farm-level vulnerability data, socioeconomic indicators and systematic records of adaptation expenditure and results. Local institutions also require stronger competencies in GIS, climate-risk interpretation, project preparation, economic assessment, public engagement and monitoring.

Vojvodina currently has individual monitoring elements, including RHMZ bulletins and remote-sensing information, but not yet a fully institutionalised CRM monitoring system. The proposed system should combine: climate and hazard indicators; exposure, vulnerability and resilience indicators; implementation and financial indicators; and outcome indicators measuring changes in losses, water use, soil condition, service continuity and equity. Each indicator should have a baseline, data source, responsible institution and update frequency. A concise provincial dashboard should be updated annually, with municipal reporting and district-level aggregation for comparison. A more comprehensive evaluation should be completed every three years, and results should be used to revise plans, budgets and project priorities where measures underperform or risks change.

4 Project Evaluation

4.1 Usability of the results

The project provides Vojvodina with a practical framework that connects climate data, district-level risk assessment, stakeholder feedback, adaptation measures and existing policy instruments. Its main value is operational: provincial and local authorities can use the results to update risk assessments and plans, prioritise measures and investments, prepare funding applications, target capacity-building support and communicate drought risk through a consistent evidence base. The Phase 2 maps, Drought Risk Index, Risk Priority Index and district prioritisation support spatial targeting of action. The use of NUTS 3 districts enables comparison across Vojvodina, while cities and municipalities can adapt the recommendations to local conditions, responsibilities and available resources. The CRM objectives, indicators and measure portfolio can be incorporated into provincial and local development, environmental, agricultural, water-management, spatial-planning and disaster-risk-management documents. Phase 3 also produced new evidence on institutional readiness. The district seminars and questionnaires identified gaps in access to information, awareness of existing measures, professional capacity, coordination and financing. The finding that 84.6% of respondents supported improvement of regional and local risk-management plans indicates strong stakeholder support for further action. At the same time, the high proportion of "do not know" and "no information" responses shows the need for clearer documentation, communication and monitoring. The questionnaire may be repeated as a low-cost institutional diagnostic, provided that the sample and respondent categories are documented and the results are not interpreted as representative of the entire population. The proposed measures and district priorities can support initial project screening, technical-assistance planning and the preparation of investment concepts. The governance recommendations can strengthen cooperation among provincial bodies, municipalities and technical institutions, while the monitoring framework provides a basis for annual reporting and adjustment of priorities when risk conditions or implementation results change. The project also improves funding readiness. A consistent evidence chain—from risk maps and priorities to objectives, measures, beneficiaries, indicators and responsible institutions—can strengthen applications to national, EU and other funding programmes. However, the deliverable is not a substitute for feasibility studies, engineering design, environmental assessment, detailed cost–benefit and distributional analysis, permitting or formal policy adoption. Its role is to identify, prioritise and justify the next planning, project-development and investment steps.

4.2 Lessons learned

The main lesson from Phase 3 is that access to information and the visibility of existing measures are important components of resilience. Although participants referred to various local adaptation activities, many respondents were unsure whether risk assessments, planning provisions, training programmes or implemented measures existed. Better documentation, institutional contact points, implementation registers and regular communication can therefore improve coordination even before major new investments are completed. Stakeholders helped validate the Phase 2 priorities, identify local barriers and support needs, and assess the practical relevance of the proposed CRM recommendations. Their feedback generally emphasised professional training, technical assistance, access to finance, improved data, stronger coordination and clearer integration of climate risk into provincial and local plans. Strong support for improving risk-management plans indicates a favourable basis for further institutional action. Learning was supported through a common seminar structure, a standardised questionnaire, discussions in all seven districts, district-level analyses and the preparation of this synthesis. The approach worked well because it combined a consistent methodology with local experience. It was less effective where participants had limited access to relevant documents or where open questions produced few concrete proposals. Future consultations should provide short evidence summaries in advance and include facilitated exercises for designing and prioritising measures. Final outcomes were communicated through the seven district seminars, seven documented communication actions, seven regional media articles, the Guide to Best Practices and seven policy notes for decision makers. Future communication should maintain and periodically update these channels. Resources were used efficiently by reusing Phase 2 datasets and methods, applying one

questionnaire across districts and organising activities through local institutions. The main constraints were uneven data availability, manual processing of responses and the need to reconcile scientific, administrative and local terminology. A shared digital platform for data collection and reporting would improve efficiency in future cycles. The overall impact is assessed as substantial for risk understanding and institutional dialogue, moderate for planning readiness and still limited for physical risk reduction. Phase 3 improved awareness, cooperation and the basis for selecting measures, but actual risk reduction will depend on formal adoption, financing, project preparation, implementation, maintenance and monitoring.

5 Conclusions Phase 3

Phase 3 successfully translated the Phase 2 Climate Risk Assessment into a practical climate risk management framework for Vojvodina. It confirmed relative and agricultural drought as the principal regional climate risks, with heat extremes acting as an important amplifying factor and storms, intense rainfall, flooding and drainage problems emerging as locally relevant concerns. The Phase 2 priority ranking remains applicable: North Banat and Central Banat require the most urgent intervention; South Banat and North Bačka require high-priority action; West Bačka and South Bačka require preventive strengthening; and Srem provides a reference area for resilience and the transfer of good practices.

The seven district seminars established a province-wide consultation process, recording 229 participant attendances. The available quantitative synthesis covered questionnaires from all seven administrative districts. Stakeholder feedback broadly confirmed the Phase 2 priorities and provided additional information on local barriers, existing practices, professional needs, public awareness and the perceived quality of current planning arrangements.

The registered participation target was exceeded, with 229 participant attendances recorded against the target of 210. The communication and policy-support component was completed through seven communication actions, seven event-related media stories published through 21 documented media placements, one Guide to Best Practices and seven policy notes.

A key finding is that the implementation gap is not caused only by the absence of measures. In many cases, stakeholders lacked information about existing risk assessments, planning provisions, training programmes and adaptation activities. This indicates weaknesses in documentation, institutional communication, coordination and the visibility of ongoing work. At the same time, strong support for improving regional and local risk-management plans demonstrates substantial readiness for further action where responsibilities, technical assistance and financing are clearly defined.

Phase 3 also confirmed that physical investments and enabling measures must be implemented together. Water retention, efficient irrigation, soil restoration, climate-resilient agriculture, green-blue infrastructure and protection of critical services will not achieve their full value without reliable data, early warning, trained personnel, project preparation, financing, coordination, communication and maintenance. Conversely, plans, training and institutional arrangements alone will not reduce exposure or losses unless they lead to financed and operational measures.

The CRM objectives, indicators, potential measures, district-sensitive priorities, governance recommendations and monitoring framework provide a practical basis for provincial and local action. Immediate priorities include clarifying institutional responsibilities, designating competent focal points, improving data exchange, completing data and infrastructure audits, integrating drought risk into relevant plans and budgets, defining missing baselines and targets, strengthening seasonal advisories and preparing a multi-year pipeline of costed and finance-ready projects. High- and very-high-priority districts, particularly in Banat, require dedicated technical assistance and accelerated project preparation.

The project also identified important limitations. Phase 3 did not prepare detailed engineering designs, complete cost estimates, full economic and distributional appraisals, environmental permitting documentation or binding amendments to policies and plans. Farm-level vulnerability, irrigation, soil-moisture, groundwater and adaptation-expenditure data remain incomplete. Survey samples differed between districts; stakeholder responses should be interpreted as institutional diagnostics rather than population estimates. Public awareness and access to information also remain insufficient.

These limitations do not invalidate the proposed framework. Instead, they identify the next tasks required for implementation. Detailed feasibility studies, technical designs, environmental and social assessments, project financing and formal policy procedures should follow the priorities established through the CRA and Phase 3 consultations.

The central conclusion is that Vojvodina does not need to wait for perfect information before beginning implementation. The direction of risk, priority areas, vulnerable sectors and main institutional gaps are sufficiently clear to justify immediate no-regret and low-regret action. Measures should be introduced progressively, monitored transparently and adjusted as better data and implementation experience become available. This adaptive approach offers the most credible pathway for protecting agricultural production, water resources, soils, ecosystems, infrastructure, public services and rural livelihoods under increasing climate variability.

6 Progress evaluation

6.1 Project outputs

Phase 3 was implemented in accordance with the work plan. Progress was assessed against measurable Key Performance Indicators and milestones covering capacity building, stakeholder engagement, communication, policy integration, adaptation-measure development and monitoring.

Table 6-1 Overview key performance indicators

Key performance indicators	*Progress*
Seven educational seminars delivered as dissemination actions	**Completed.** Seven educational seminars were organised in the seven administrative districts of Vojvodina between 7 April and 5 June 2026. Attendance lists, questionnaires and photographic documentation were collected for all seven events.
210 participants involved in seminars	**Completed and exceeded.** The seven seminars recorded 229 participant attendances, exceeding the KPI target.
7 stakeholders representing the seven administrative districts involved in project activities	**Completed.** Stakeholder institutions and representatives from all seven administrative districts participated in the seminars, consultations and project activities.
7 communication actions undertaken to share results with stakeholders	**Completed.** Seven documented communication actions were implemented, linked to the seven district activities and disseminated through institutional, online and other project communication channels. Evidence for each action is included in the supporting documentation and project repository.
1 publication: Guide to Best Practices and proposed adaptation measures	**Completed.** One Guide to Best Practices for Climate Adaptation in Vojvodina was prepared, presented and distributed to participants during the district seminars. The Guide includes proposed adaptation measures and implementation guidance for relevant stakeholders.
7 articles in regional media mentioning the project	**Completed and exceeded**. Seven event-related media stories were published across three regional portals, resulting in 21 documented media placements. The

Key performance indicators	*Progress*
	media register contains the media outlet, publication date, article title and active hyperlink for each placement.
7 notes for policy makers	**Completed**. Seven district-level policy notes—one for each administrative district of AP Vojvodina—were prepared for policy and decision makers. Each policy note translates the district survey findings into a concise risk profile, identifies institutional and planning gaps, and presents priority adaptation measures and recommended actions for relevant provincial and local authorities.

Table 6-2 Overview milestones

Milestones	*Progress*
M3 – Stakeholder meeting (educational seminars) organised during Phase 3	**Completed.** Seven educational and stakeholder seminars were organised in all seven administrative districts between April and June 2026. The activities were supported by attendance lists, questionnaires, presentations and photographic documentation.
M5 – Presentation of results to policy and decision makers in Novi Sad during Phase 3	**Completed.** A dedicated presentation of the Phase 2 Climate Risk Assessment results, the Phase 3 climate risk management framework and the proposed adaptation recommendations was held for policy and decision makers in Novi Sad on 19 June 2026. The event was separate from the seven district educational seminars and is supported by a dedicated attendance list and photographic documentation.
M6 – Attendance at the CLIMAAX workshop in Brussels	**Not yet due.** The milestone is scheduled for completion by 31 January 2027.

7 Supporting documentation

The Phase 3 output package should be arranged in the same order in the project repository. The following register lists the documentation available for this deliverable and included in the project repository:

1. *Guide to Best Practices and proposed adaptation measures;*
2. *Evidence of seven communication actions;*
3. *Seven policy notes for policy and decision makers;*
4. *Register and evidence of seven event-related media stories published through 21 documented media placements;*
5. *Stakeholder instrument: Questionnaire – Support for Climate Adaptation at Regional and Local Level (Serbian, blank master form).*

6. *Attendance documentation: seven signed attendance-list files for Central Banat, North Bačka, North Banat, South Bačka, South Banat, Srem, and West Bačka and Presentation of the results to policy.*
7. *Seminar photographs*

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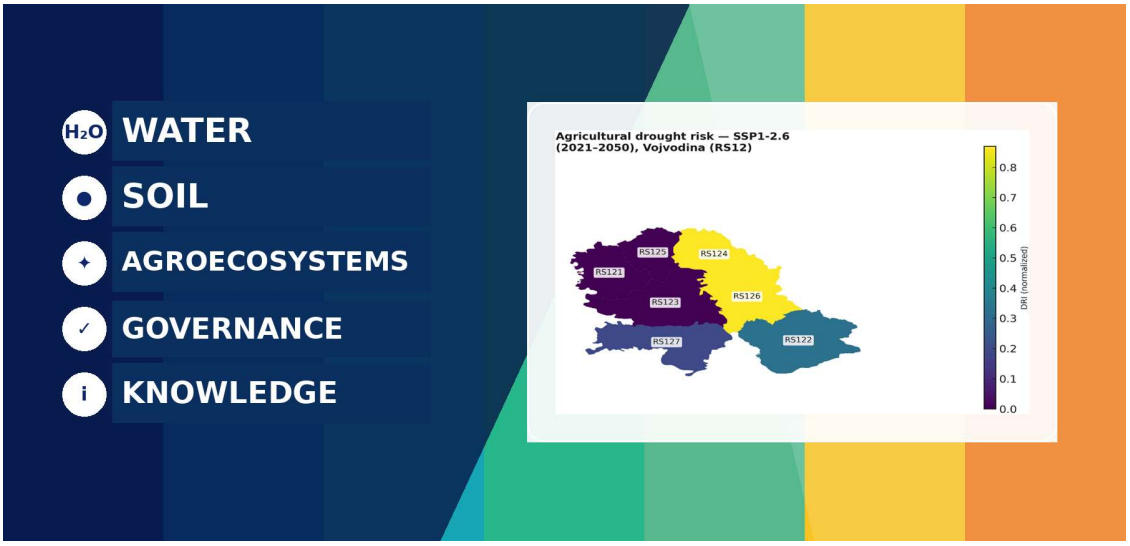
OpenStreetMap contributors. OpenStreetMap data used under the Open Database License.

CLIMAAX
climate ready regions

GUIDE TO CLIMATE RISK MANAGEMENT AND CLIMATE CHANGE ADAPTATION IN THE AUTONOMOUS PROVINCE OF VOJVODINA

Best practices and proposed adaptation measures at local and regional levels

CLIMACHANGE – Adapt on clime change in APV | Phase 3



Republic of Serbia / Autonomous Province of Vojvodina
Version 1.0 | January 2026

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IMPORTANT NOTE

The Guide translates the results of the climate risk assessment into operational steps. The maps and district ranking are based on the CLIMACHANGE Phase 2 assessment. The proposed measures do not replace technical documentation, impact assessment procedures, water conditions, urban planning procedures, public procurement or other legal obligations. Before investment, each measure must be verified at the specific location, including the risk of maladaptation.

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Executive summary

AP Vojvodina is highly exposed to mutually reinforcing climate risks: relative and agricultural drought, heatwaves, changing precipitation patterns, intense rainfall and flooding, soil degradation, and pressures on water resources, health, biodiversity and infrastructure. The National Adaptation Programme indicates that Serbia is warming faster than the global average and that droughts and high temperatures account for the largest share of estimated damage from climate and weather extremes during 2000–2020. [4]

The CLIMACHANGE risk assessment for all seven administrative districts of AP Vojvodina showed that North Banat (RS124) and Central Banat (RS126) fall within the very high priority category; South Banat (RS122) and North Bačka (RS125) are high priority; West Bačka (RS121) and South Bačka (RS123) are medium priority; while Srem (RS127) has a low relative priority and can serve as a reference area for selected resilience practices. [3]

WHAT THIS GUIDE PROVIDES

A unified procedure for reviewing and improving existing plans; a portfolio of 30 practical measures; detailed priority measures for water, soil, agroecosystems, institutions and communication; recommendations for all seven districts; a training and campaign programme; indicators for monitoring progress; and a form for measuring improvements in risk management.

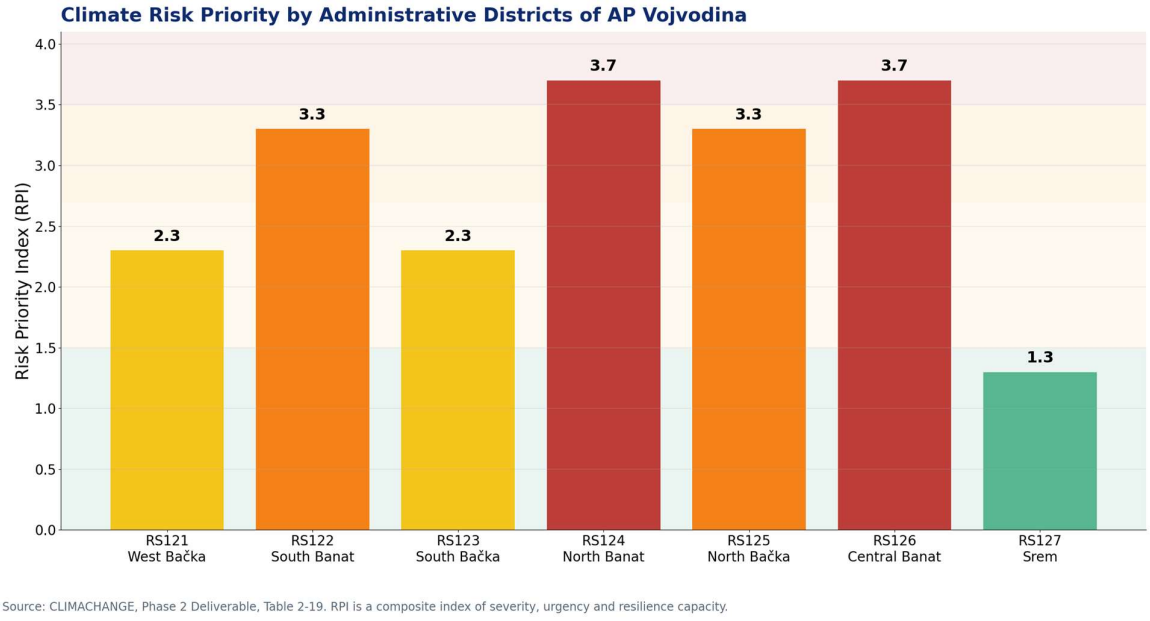


Figure 1. Ranking of administrative districts according to the Risk Priority Index (RPI) from CLIMACHANGE Phase 2.

Ten decisions that should not be delayed

1. Establish a permanent Provincial Climate Risk Coordination Mechanism with clearly designated risk owners, responsibilities and an annual work programme.
2. Integrate the results of the CLIMAAX assessment, scenarios and maps into provincial and local development, spatial, urban, water, agricultural, health, protection and rescue plans.
3. Define operational classes and thresholds for drought, heat and related consequences, supported by a transparent warning protocol and recommended actions.
4. Prioritise the development of water retention, efficient irrigation and demand management in RS124, RS126, RS122 and RS125, while verifying the sustainability of water abstraction.

5. Establish a soil protection and organic matter enhancement programme, with demonstration plots and advisory support.
6. Link agrometeorological information to recommendations that farmers can apply immediately.
7. Prepare local heat-health action plans and provide support to older people, children, outdoor workers and other vulnerable groups.
8. Introduce climate proofing for all major public investments and climate adaptation budget tagging.
9. Conduct seven territorial workshops and establish a continuous training programme for local officials, advisers, utility systems, civil protection services and other responsible actors.
10. Measure progress through a common indicator system, a public annual review and periodic updates of the risk assessment.

1. Purpose, scope and use of the guide

This Guide was prepared as an operational output of the third phase of the CLIMACHANGE project. Its purpose is to translate climate risk assessment results into decisions that can be planned, financed, implemented and measured. In accordance with the project application, the document supports the analysis of existing procedures and strategies, the identification of needs for their adjustment, capacity building, awareness raising and the dissemination of relevant measures in vulnerable locations. [1]

1.1. Intended users of the Guide

- provincial secretariats, institutes and public enterprises;
- cities and municipalities, particularly teams responsible for planning, urban development, environment, agriculture, local economic development and emergency management;
- water management, utility, health and social services;
- agricultural advisory services, cooperatives, associations and farms;
- managers of protected areas, professional and scientific institutions;
- civil society organisations, schools, media, businesses and citizens.

1.2. How to use the document

1. Start with the risk profile and determine the category to which the district or local self-government belongs.
2. Complete the rapid review of existing plans in Annex A and identify the most significant gaps.
3. Select a combination of structural, nature-based, governance, financial and educational solutions from the portfolio of measures.
4. Assess measures against criteria covering benefits, cost, urgency, feasibility, equity, emissions and maladaptation risk.
5. Convert the selected measures into project fiches with responsibilities, budget, deadlines and indicators.
6. Implement the measures, monitor results and, at least annually, check whether the risk, data, regulations, financing or priorities have changed.

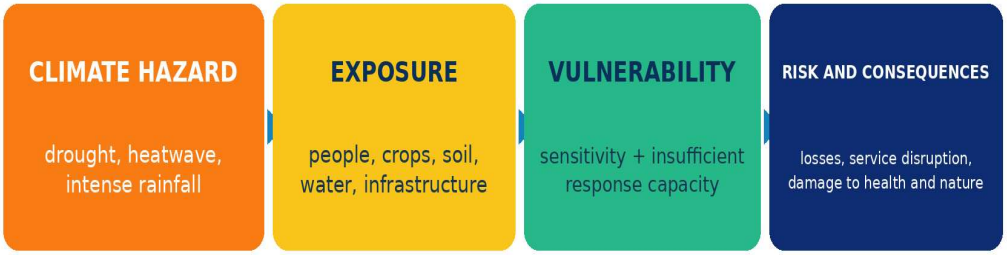


Figure 2. Climate risk chain used to link hazards, exposure, vulnerability and consequences.

“NO-REGRET” PRINCIPLE

Priority should be given to measures that also provide benefits under the current climate and that are flexible, reversible or can be expanded in phases. Examples include reducing water losses, improving soil structure, early warning, shading public spaces, protecting vulnerable groups and improving coordination.

1.3. Guiding principles

Principle	Practical meaning
Evidence-based approach	Combine CLIMAAX results, local data, expert knowledge and community experience.
Future risk	Do not plan solely on the basis of past extremes; use at least one lower and one higher emissions scenario.
Equity	Identify who is most exposed, who has the fewest resources to adapt and who may unintentionally bear the costs of the measure.
Cross-sectoral approach	Water, agriculture, health, nature, infrastructure and development must be planned in an integrated manner.
Nature-based solutions	Protect and restore ecosystems where they can safely and effectively reduce risk.
Avoiding maladaptation	Do not transfer risk to other locations, groups, sectors or future generations, and do not increase emissions without justification.
Iterative approach	The plan is a living document that changes with new data and monitoring results.

2. Climate risk profile of AP Vojvodina

AP Vojvodina (NUTS 2: RS12) covers approximately 21,500 km^2 and seven NUTS 3 administrative districts: West Bačka (RS121), South Banat (RS122), South Bačka (RS123), North Banat (RS124), North Bačka (RS125), Central Banat (RS126) and Srem (RS127). Agriculture, particularly wheat and maize production, is highly dependent on water availability and temperature during the growing season. [3]

2.1. Key hazards and associated risks

Hazard	Main impact mechanism
Relative and meteorological drought	precipitation deficit, longer dry periods and increased evapotranspiration
Agricultural drought	insufficient soil moisture and crop water balance during critical phenological stages
Heatwaves	health stress, increased water and energy demand, and damage to crops and livestock
Intense rainfall and flash/pluvial flooding	local flooding, erosion and damage to infrastructure and crops
Hydrological and ecological stress	pressure on surface water and groundwater, wetlands, canal systems and biodiversity
Cascading risks	combinations of heat, drought, fire, supply disruptions, rising food prices and social consequences

2.2. Results of the CLIMACHANGE assessment

Phase 2 adapted the CLIMAAX methodology to the local context, using WASP/dH and P–ET_0 as the primary indicators of relative and agricultural drought, while SPI and SPEI were used for contextual verification of the results against available data and bulletins of the Republic Hydrometeorological Service of Serbia (RHMZ). The assessment linked hazard indicators with data on exposure, vulnerability and capacities, as well as with the future scenarios SSP1–2.6 and SSP5–8.5. [3]

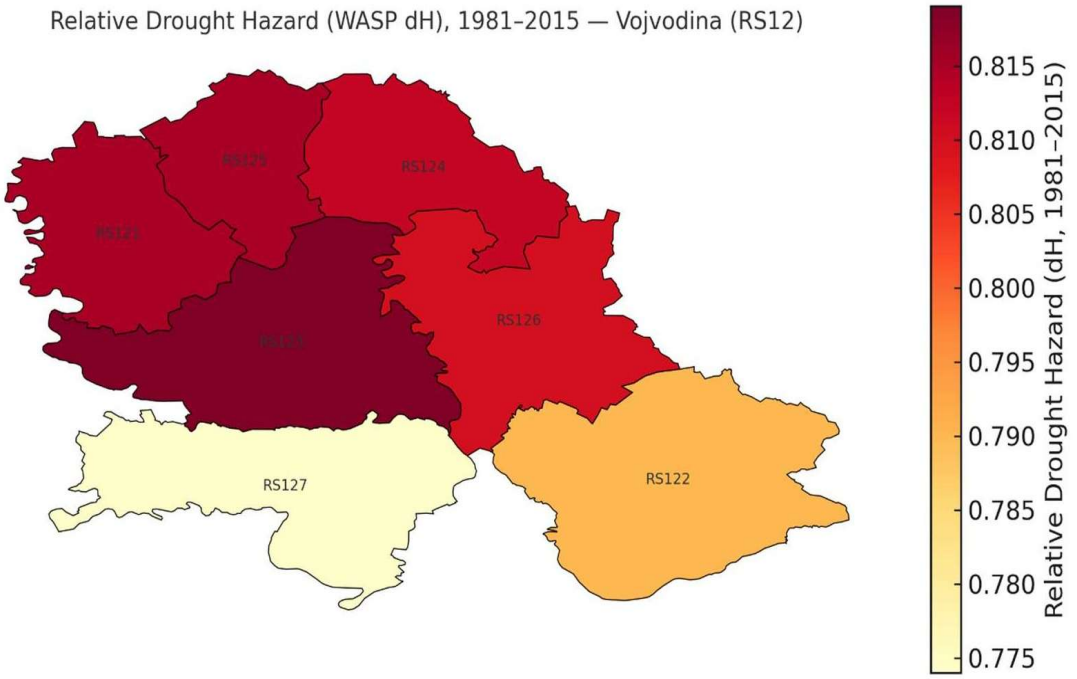
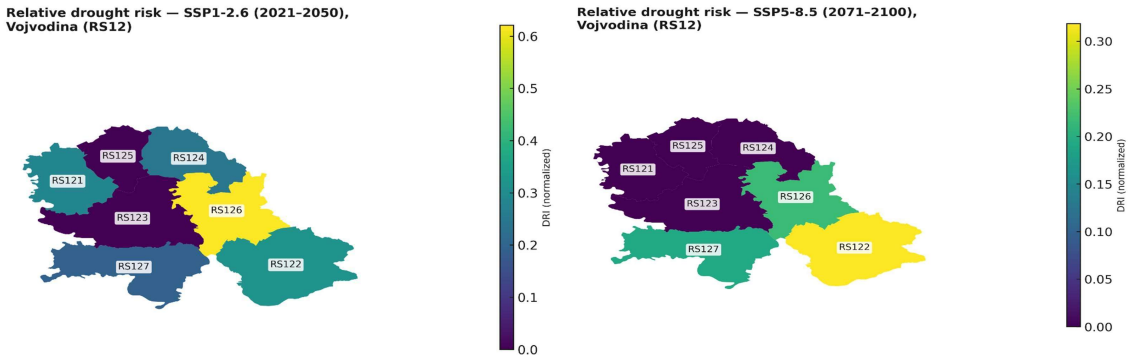


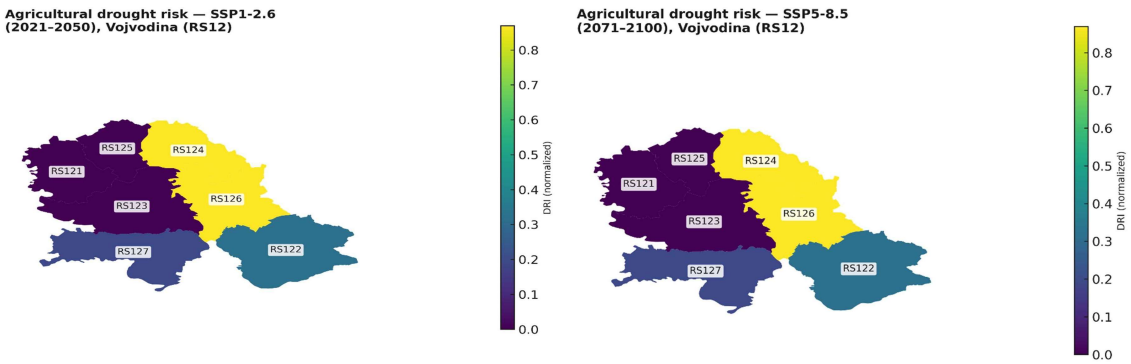
Figure 3. Relative drought hazard in the 1981–2015 reference period (source: CLIMACHANGE Phase 2).



SSP1–2.6, 2021–2050.

SSP5–8.5, 2071–2100.

Figure 4. Relative drought hazard under future scenarios. The maps show spatial differences within the scenarios used and do not represent a forecast of damage for an individual plot.



Agricultural risk, SSP1–2.6

Agricultural risk, SSP5–8.5

Figure 5. Comparative presentation of agricultural drought risk by district (source: CLIMACHANGE Phase 2).

2.3. Priorities by administrative district

District	Priority risk profile	Urgency	Capacity	RPI	Priority
RS121 – West Bačka	Relative and agricultural drought	More action required	0,55	2,3	**Medium**
RS122 – South Banat	Relative and agricultural drought	Immediate action	0,35	3,3	**High**
RS123 – South Bačka	Relative and agricultural drought	More action required	0,68	2,3	**Medium**
RS124 – North Banat	Relative and agricultural drought	Immediate action	0,30	3,7	**Very high**
RS125 – North Bačka	Relative and agricultural drought	Immediate action	0,40	3,3	**High**
RS126 – Central Banat	Relative and agricultural drought	Immediate action	0,33	3,7	**Very high**
RS127 – Srem	Relative and agricultural drought	Monitoring	0,75	1,3	**Low**

Note: capacity is a composite assessment of financial/institutional, natural and human/social capabilities; a higher value indicates greater capacity. RPI is the relative priority index from Phase 2.

2.4. Limitations and correct interpretation

- The assessment is regional (NUTS 3) and does not replace an assessment for a plot, settlement, facility or specific investment.
- Different datasets have different spatial and temporal resolutions; the availability of detailed data on soil, irrigation, farms and social vulnerability remains a limitation.
- A scenario is not a forecast. It presents a possible pathway under specified assumptions and is used to test the robustness of decisions.
- Climate risk changes with exposure, land use, demographics, prices, infrastructure and institutions; the assessment should therefore be updated periodically.
- The ranking does not mean that lower-priority districts have no local “hotspots” or that all measures can be delayed in those districts.

3. Current risk management system: procedures, strengths and gaps

Climate risk management in AP Vojvodina does not start from zero. Systems already exist for meteorological and hydrological monitoring, disaster risk assessment, protection and rescue planning, water, agricultural, spatial and urban planning, local development plans, insurance instruments, advisory services, scientific institutions and financial support programmes. The problem is not only the absence of instruments, but also their fragmentation, uneven territorial coverage, reactive financing and insufficient use of future climate scenarios. [3][4][5]

3.1. Typical current decision-making process

1 Monitoring and warning	RHMZ, water management and other services monitor hazards; information is forwarded to institutions and the public.
2 Risk assessment	Authorities and local self-government units assess risks and scenarios within prescribed procedures and sectoral analyses.
3 Planning	Risks are integrated, to varying degrees, into development, spatial, urban, water, agricultural, health, protection and rescue plans.
4 Budgeting and projects	Measures are financed through regular budgets, transfers, incentives, funds, donations, loans and private investment.
5 Response and recovery	Services respond during events; damage and needs are assessed afterwards.
6 Performance monitoring	Monitoring often focuses on expenditure and completed activities, and less frequently on changes in vulnerability and avoided losses.

3.2. Main strengths

- professional capacities of RHMZ, universities, institutes and provincial institutions;
- existing networks for monitoring weather, water, agriculture and the environment, which can be better interconnected;
- experience in water management, land improvement, agricultural advisory services and disaster protection;
- available European and open datasets, as well as reproducible CLIMAAX processing workflows;
- growing interest among local authorities, associations, non-governmental organisations and farmers;
- the National Adaptation Programme, with measures relating to knowledge, drought, water, agriculture, forests, health, urban planning, infrastructure and local capacities. [4]

KEY CHANGE IN APPROACH

Move from event management to risk management: plan before damage occurs, use future scenarios, connect sectors, agree thresholds and actions in advance, secure preventive financing and measure whether vulnerability has actually decreased.

3.3. Critical gaps

Domain	Gap to be closed
Governance	Fragmented responsibilities; insufficiently clear risk owners and joint decision-making mechanisms
Plans	Climate scenarios and quantitative indicators are not systematically integrated into all relevant documents
Risk thresholds	There are no harmonised provincial quantitative thresholds for acceptable/tolerable drought risk
Data	Insufficient resolution and interoperability of data on soil, water, irrigation, farms and vulnerable groups
Prevention	Financing still responds mainly to damage, rather than preventive risk reduction
Infrastructure	Irrigation coverage is limited and spatially uneven; Phase 2 reports that the irrigated area is below 3% of arable land at regional level.
Insurance	Phase 2 estimates that agricultural insurance coverage is below 30%
Local capacity	Limited climate literacy and a lack of permanent technical staff in some local administrations
Participation	Small farms, rural women, older farmers and other vulnerable groups are not sufficiently represented
Impact monitoring	Reductions in vulnerability, system resilience and avoided damage are insufficiently measured

4. How to review and adjust existing plans

The fastest route is not to create entirely new parallel documents, but to systematically integrate climate risk into existing development and sectoral plans, with a dedicated adaptation action plan where necessary. The National Programme also prioritises mainstreaming adaptation into sectoral policies and plans, supported by systematic monitoring and reporting. [4]

4.1. Minimum standard for a climate-resilient plan

Element	Review question	Score 0–3
1. Mandate and responsibility	Coordinator, risk owners, cross-sectoral team and reporting arrangements defined.	0 1 2 3
2. Current climate	Relevant hazard, damage, disruption and vulnerability data used.	0 1 2 3
3. Future scenarios	At least one lower and one higher scenario and time horizon considered.	0 1 2 3
4. Exposure	People, crops, nature, water, infrastructure, services and assets mapped.	0 1 2 3
5. Vulnerability and inequality	Sensitive groups, capacities and spatial differences identified.	0 1 2 3
6. Cascading risks	Drought–heat–water–food–energy–health–economy links considered.	0 1 2 3
7. Objectives	Measurable resilience outcomes, not only activities, defined.	0 1 2 3
8. Measures	Portfolio includes preventive, structural, nature-based, financial and educational measures.	0 1 2 3
9. Appraisal of measures	Benefits, costs, emissions, equity, feasibility and maladaptation assessed.	0 1 2 3
10. Financing	Source, lead entity, project preparation and life-cycle costs identified.	0 1 2 3
11. Implementation	Deadlines, responsibilities, procurement, permits, partners and capacities identified.	0 1 2 3
12. Monitoring and review	Indicators, baseline, targets, frequency and review triggers defined.	0 1 2 3

Scale: 0 – not covered; 1 – mentioned without analysis or responsibility; 2 – partly operationalised; 3 – fully integrated, financed and monitored.

4.2. Climate Risk Management Improvement Index

The project proposes the Climate Risk Management Index (IUKR) to measure improvement. It is a simple Phase 3 tool, not a statutory index. Eight domains are scored 0–4: governance; data and assessment; planning; financing; implementation; early warning and preparedness; participation and equity; and monitoring, evaluation and learning.

FORMULA

IUKR (%) = points achieved / 32 × 100. Improvement = post-intervention IUKR – baseline IUKR. The proposed operational objective is to increase at least one maturity level in at least six of eight domains after establishing the baseline.

0 – initial	no formal approach; response is ad hoc
1 – basic	risk is recognised, but clear procedures are absent
2 – developing	partial processes, projects and responsibilities exist
3 – integrated	risk is integrated into plans, budgets and the work of services
4 – adaptive	the system learns, measures results, uses scenarios and is updated regularly

The IUKR, criterion weights, indicative costs, timeframes and roadmap are Phase 3 project tools and expert recommendations, not legally prescribed national standards or mandatory values.

4.3. Document analysis procedure

1. Designate the analysis owner and assemble a team familiar with the document, data and implementation.
2. List related plans, decisions, budgets, projects and warning/response procedures.
3. Link plan objectives and measures to risk maps, vulnerable groups and critical services.
4. Score the 12 minimum-standard elements and eight IUKR domains.
5. Identify gaps that could cause the greatest loss or block implementation.
6. Propose precise amendments: objective, indicator, map, procedure, budget line, institution or measure.
7. Validate findings publicly with stakeholders, especially groups bearing the risk or cost.
8. Adopt the amendment plan, monitor implementation and reassess after 12–18 months.

5. Adaptation planning cycle

The European Adaptation Support Tool and Regional Adaptation Support Tool treat adaptation as a flexible and iterative cycle: preparation, risk assessment, option selection, implementation, monitoring, evaluation and updating. [10] ISO 14091 provides a framework for assessing current and future risks as a basis for planning, implementing and monitoring adaptation. [12]



Figure 6. Proposed six-step adaptation cycle for provincial and local authorities.

Step 1 – Mandate, team and participation

Adopt a decision or assignment; appoint a coordinator; define risk owners; map stakeholders; ensure the participation of vulnerable groups; and agree on arrangements for data exchange and conflict resolution.

Step 2 – Risk assessment

Combine historical events, CLIMAAX maps, future scenarios, exposure, vulnerability, capacity and local knowledge. Record uncertainty and data gaps.

Step 3 – Resilience objectives

Define what must remain functional and under which conditions: water supply, crops, healthcare, roads, schools, natural habitats and social services. Set measurable objectives.

Step 4 – Selection of measures

Develop several options, including “no action”, nature-based and technical solutions, behavioural change, regulation, financial instruments and combined packages.

Step 5 – Financing and implementation

Prepare technical fiches, studies, permits, a budget, procurement, partnerships, a maintenance plan and communication arrangements. Prioritise mature measures that reduce the greatest risk.

Step 6 – Monitoring and review

Measure delivery, outcomes and changes in risk; check inequalities and unintended consequences; report publicly and update the plan when the scenario, threshold, cost or performance changes.

5.1. Multi-criteria ranking of measures

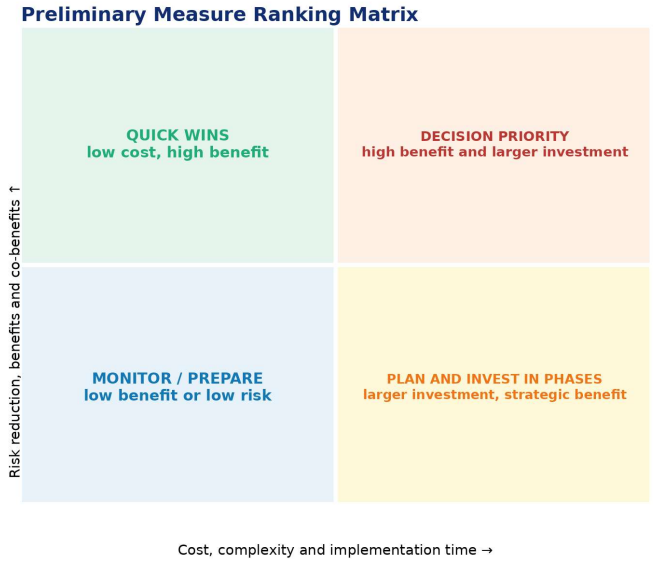


Figure 7. Rapid decision matrix before detailed multi-criteria analysis.

Criterion	Proposed weight	Score 1–5
Risk reduction	25%	1 2 3 4 5
Urgency and time horizon	15%	1 2 3 4 5
Cost-effectiveness	15%	1 2 3 4 5
Technical and institutional feasibility	10%	1 2 3 4 5
Co-benefits for health, nature and development	10%	1 2 3 4 5
Equity and protection of vulnerable groups	10%	1 2 3 4 5
Robustness across scenarios	10%	1 2 3 4 5
Low risk of maladaptation and increased emissions	5%	1 2 3 4 5

The weights are an initial proposal. The team should adapt them to the local context, but must document the reasons and involve stakeholders.

5.2. Maladaptation risk check

- Does the measure increase water or energy consumption in an unsustainable manner?
- Does it protect one group or location by increasing risk for another?
- Does it lock the system into expensive, inflexible infrastructure that may be unsuitable under a future scenario?
- Does it worsen water or soil quality, biodiversity or greenhouse gas emissions?
- Is maintenance realistically financed and organised throughout the entire life cycle?
- Does the measure overlook poorer households, small farms, older people, persons with disabilities or other vulnerable groups?
- Have assumptions about the availability of water, land and technology, and about user behaviour, been verified?

6. Portfolio of adaptation measures

The portfolio is organised around five themes defined in the Phase 3 work plan: water management, soil protection, agroecosystem resilience, institutional coordination and data, and awareness and education. Cross-cutting measures for health, urban areas, nature and infrastructure have also been added. Measures should be combined; a single investment can rarely address the risk on its own. [3]



Figure 8. Five interconnected pillars of the adaptation portfolio.

A. Water management

Code	Measure	Time / cost	Primary coverage
A1	Local water balances and drought plans	Short term / €	all districts
A2	Rehabilitation, automation and efficiency of irrigation systems	Medium–long term / €€€	RS124, RS126, RS122, RS125
A3	Micro-retention systems, reservoirs and rainwater harvesting	Medium term / €€	priority districts
A4	Reducing losses in public water supply and managing demand	Medium term / €€	cities and municipalities
A5	Protection of groundwater, surface water and environmental flows	Continuous / €€	entire AP Vojvodina
A6	Blue-green infrastructure for retaining rainfall	Medium term / €€	urban areas

B. Soil protection

Code	Measure	Time / cost	Primary coverage
B1	Cover crops and permanent soil cover	Short term / €	agricultural land
B2	Increasing organic matter and precision fertiliser application	Medium term / €–€€	entire AP Vojvodina
B3	Conservation tillage and controlled machinery traffic	Medium term / €€	at-risk soils
B4	Erosion-control measures and shelterbelts	Medium term / €€	exposed plots and canals
B5	Monitoring soil salinisation, compaction and moisture	Short term / €	Banat and other critical zones
B6	Demonstration plots and payments for ecosystem services	Medium term / €€	pilot municipalities

C. Agroecosystem resilience

Code	Measure	Time / cost	Primary coverage
C1	Varieties and crop rotation adapted to heat and drought	Short term / €	entire AP Vojvodina
C2	Adjusting sowing dates and operations to agrometeorological forecasts	Short term / €	entire AP Vojvodina
C3	Precision irrigation linked to soil moisture and ET_0	Medium term / €€	priority districts
C4	Diversification of farm production and income	Medium term / €€	rural areas
C5	Heat protection for livestock, water supply and ventilation	Short–medium term / €€	livestock areas
C6	Integrated pest management and management of emerging biological risks	Continuous / €	entire AP Vojvodina

D. Institutions, data and finance

Code	Measure	Time / cost	Primary coverage
D1	Provincial coordination mechanism and risk owners	Short term / €	provincial level
D2	Common platform of indicators and georeferenced data	Medium term / €€	entire AP Vojvodina
D3	Multi-hazard early warning system and action protocols	Medium term / €€	all districts
D4	Climate proofing of plans, budgets and investments	Short term / €	province and LSGUs
D5	Financial instruments, insurance and a fund for preventive measures	Medium term / €€	entire AP Vojvodina
D6	Annual risk report and plan review	Continuous / €	province and LSGUs

E. Knowledge, health and communication

Code	Measure	Time / cost	Primary coverage
E1	Seven territorial workshops and a training programme	Short term / €	seven districts
E2	Crop-specific agrometeorological advisory messages	Short term / €	farmers
E3	Heat-health action plans	Short term / €	cities and municipalities
E4	Online campaign and local communication packages	Short term / €	general public
E5	School and youth climate literacy programmes	Medium term / €	educational institutions
E6	Participatory monitoring and citizen science	Medium term / €	local communities

Cost legend: € – low; €€ – medium; €€€ – high capital requirement. The categories are indicative and must be confirmed through a feasibility study and life-cycle costing.

6.1. Ten priority measure fiches

D1 Provincial Climate Risk Coordination Mechanism	
Risk/problem	Fragmented responsibilities and unclear risk ownership.
Key activities	Appoint a cross-sectoral team by formal decision; define risk owners and the RACI matrix; adopt an annual work plan; review indicators quarterly; involve all seven districts, professional institutions, businesses and civil society.
Lead entity and partners	Provincial Secretariat for Urban Planning and Environmental Protection; partners: relevant secretariats, RHMZ, Ministry of the Interior/Emergency Management Sector, LSGUs, public enterprises and scientific institutions.
Time and cost	0–6 months; low direct cost.
Indicators	Decision adopted; number of regular meetings; percentage of decisions with a designated lead entity and deadline; IUKR governance domain.
Safeguards / note	Do not create a parallel body without a mandate; integrate existing mechanisms.

D2 Common Data and Indicator Platform

Risk/problem	Dispersed data, inconsistent resolutions and difficult updating of the assessment.
Key activities	Establish a data catalogue; data-sharing agreements; unified metadata; periodically calculate SPI, SPEI, P–ET_0, soil moisture, exposure and vulnerability; provide a public overview without sensitive data; and version the methodology.
Lead entity and partners	The Province and RHMZ, together with geodetic, water, agricultural, health and statistical institutions.
Time and cost	6–18 months; medium cost.
Indicators	Number of interoperable datasets; update time; district coverage; number of users; number of decisions using the platform.
Safeguards / note	Clear rules on quality, privacy and responsibility; do not combine data at different scales without a warning.

D3 Multi-Hazard Early Warning System and Action Protocols

Risk/problem	A warning without pre-agreed actions does not sufficiently reduce consequences.
Key activities	Define thresholds and levels; connect monitoring, forecasting, consequence assessment, communication and response; prepare “who does what” matrices for drought, heat, intense rainfall and wildfire risk; test them through exercises; and use multiple channels.
Lead entity and partners	RHMZ, provincial and local authorities, civil protection, health services, agricultural and utility services, and the media.
Time and cost	6–18 months; medium cost.
Indicators	Population coverage; time from forecast to message; percentage of messages with a clear action; number of tests; target-group response.
Safeguards / note	Messages must be understandable, accessible and available without digital barriers. The four EW4All pillars are risk knowledge, monitoring/forecasting, communication and response preparedness. [14]

A1 Local Water Balances and Drought Management Plans

Risk/problem	Water decisions made without a common picture of supply, demand, ecological needs and future scenarios.
Key activities	Calculate seasonal supply and demand for a catchment/utility system; include public supply, agriculture, industry and ecosystems; define phased measures for different drought levels; establish restriction thresholds and priority users; update annually.
Lead entity and partners	Water management institutions and LSGUs, with RHMZ, utility companies, agriculture, nature protection authorities and users.
Time and cost	0–12 months; low–medium cost.
Indicators	Adopted balance; percentage of consumption covered by metering; number of phased measures activated; water losses; maintained environmental flow.
Safeguards / note	Do not treat all theoretically available water as safe for abstraction; include water quality and ecological needs.

A3 Micro-Retention and Rainwater Harvesting

Risk/problem	Rapid rainfall runoff and lack of locally available water during dry periods.
Key activities	Map depressions and safe locations; assess water quality and flood risk; combine field ponds, canal retention, rooftop tanks and wetland restoration; prepare maintenance and sediment-management arrangements.
Lead entity and partners	LSGUs, water management authorities, agriculture, land managers and protected-area managers.
Time and cost	1–3 years; medium cost.
Indicators	m^3 of retention capacity; area with slowed runoff; number of users; reduced peak runoff; ecological indicators.
Safeguards / note	Mandatory hydrological and ecological assessment; avoid deterioration of water quality, spread of invasive species and safety risks.

C1 Climate-Adapted Crop Rotation, Varieties and Sowing Dates

Risk/problem	Heat and water deficit during critical phenological stages, with greater yield variability.
Key activities	Test varieties and hybrids with different growing-season lengths; diversify crop rotation; link sowing and operations to seasonal and short-term forecasts; preserve genetic diversity; publish local trial results.
Lead entity and partners	Advisory and scientific institutions, seed companies, cooperatives and farms.
Time and cost	from the next season; low cost.
Indicators	number of combinations tested; hectares under diversified crop rotation; yield variability; number of users of advisory services.
Safeguards / note	Do not base a decision on a single scenario or variety; monitor markets, diseases and water requirements.

E1 Seven Territorial Workshops and a Continuous Training Programme

Risk/problem	Uneven knowledge and capacity to apply assessment results in local plans.
Key activities	Conduct one workshop in each district; use local maps and cases; practise plan review, measure selection and preparation of a project fiche; establish a network of contact persons; provide materials, recordings and mentoring support.
Lead entity and partners	Provincial Secretariat and project team, together with LSGUs, RHMZ, professional institutions and local partners.
Time and cost	0–12 months; low cost.
Indicators	7 workshops; number and composition of participants; pre-/post-test result; number of completed local fiches; change in IUKR.
Safeguards / note	Ensure practical work, accessibility, gender and generational representation, and support for smaller municipalities.

6.2. Cross-cutting packages for cities, health, nature and infrastructure

URBAN HEAT AND INTENSE RAINFALL

mapping heat islands; tree-lined streets and shade; permeable surfaces; green roofs where feasible; rainwater retention; cooling spaces; climate standards for public buildings; and drought-adapted maintenance of green areas. The National Programme particularly highlights green areas, local urban adaptation planning and heat-island monitoring. [4]

BIODIVERSITY AND PROTECTED AREAS

restoration of wetlands and ecological corridors; control of invasive species; climate proofing of management plans; monitoring of key species and ecosystem services; adaptation of visitor management and ecotourism; water protection and fire prevention. Preserved ecosystems increase adaptive capacity and provide nature-based solutions. [5][7][8]

CRITICAL INFRASTRUCTURE AND PUBLIC SERVICES

climate proofing of roads, bridges, water supply, sewerage, energy systems, health and educational facilities; continuity planning; backup power and water; preventive maintenance; standards for future temperatures and precipitation; and “Build Back Better” after an event. [13]

SOCIAL RESILIENCE AND EQUITY

support registers with data protection safeguards; investment support for small farms and lower-income households; accessible insurance; field-based advisory support; inclusion of women, young people, older people and persons with disabilities; and monitoring of the distribution of benefits and costs.

7. Territorial priorities for the seven administrative districts corresponding to the NUTS 3 areas of AP Vojvodina

The profiles below provide an initial orientation for planning and workshops. They are based on the Phase 2 ranking and must be supplemented with local data, critical infrastructure maps, water balances, farm structures, health indicators and consultations. [3]

RS124 – North Banat District

VERY HIGH PRIORITY

Risk profile: Relative and agricultural drought; immediate action; RPI 3.7; low capacity 0.30.

Recommended package: Local water balances and a drought plan; irrigation modernisation and metering; micro-retention; soil moisture/salinity monitoring; cover crops and organic matter; agrometeorological messages; support for small farms; and operational warning thresholds.

Result within the first 12 months: a coordination group, detailed exposure map, at least two pilot sites and prepared investment fiches.

RS126 – Central Banat District

VERY HIGH PRIORITY

Risk profile: Highest frequency/intensity in the assessment; relative and agricultural drought; RPI 3.7; low capacity 0.33.

Recommended package: Water demand and retention management; priority infrastructure; soil protection; crop diversification; livestock heat protection; an early warning system; and climate proofing of development and spatial plans.

Result within the first 12 months: adopted thresholds, a pilot water–soil–crop package and a data-sharing agreement.

RS122 – South Banat District

HIGH PRIORITY

Risk profile: Combined drought; immediate action; RPI 3.3; medium capacity 0.35; dependence on rainfall patterns.

Recommended package: Efficient irrigation and secure sources; crop rotation and varieties; shelterbelts; urban heat measures; continuity of water supply; protection of natural areas and aquatic ecosystems; insurance and advisory support.

Result within the first 12 months: a water balance, critical zones for crops and health, a package of rapid measures and project documentation for priority investments.

RS125 – North Bačka District

HIGH PRIORITY

Risk profile: Combined drought; immediate action; RPI 3.3; medium capacity 0.40; long-term exposure.

Recommended package: Soil and water monitoring; retention and efficiency; wind erosion protection; adapted schedules and varieties; climate plans for settlements; and cross-border exchange of knowledge and data where useful.

Result within the first 12 months: a gap analysis of local plans, a pilot agrometeorological advisory service and an erosion-control package.

RS121 – West Bačka District

MEDIUM PRIORITY

Risk profile: Agricultural drought; more action required; RPI 2.3; significant capacity 0.55.

Recommended package: Prevention of deterioration; water-consumption metering; conservation agriculture; moisture monitoring; continuity of public services; demonstration plots; and maintenance of existing advantages.

Result within the first 12 months: an updated assessment, at least one demonstration site and a scaling plan in case the scenario worsens.

RS123 – South Bačka District

MEDIUM PRIORITY

Risk profile: Agricultural drought; more action required; RPI 2.3; significant capacity 0.68.

Recommended package: Urban heat and blue-green infrastructure; efficient water management; climate proofing of major infrastructure; health protection; digital services and demonstrations; and support for surrounding rural areas.

Result within the first 12 months: a heat plan, a climate-proofing standard for public investments and development of a demonstration knowledge centre.

RS127 – Srem District / Srem Administrative District

LOW RELATIVE PRIORITY / REFERENCE AREA
Risk profile: Agricultural drought; monitoring; RPI 1.3; high capacity 0.75.
Recommended package: Preserve capacity; document good practices; monitor heat and drought; protect forests, Fruška Gora, water and ecological corridors; prevent the transfer of risk through development and urbanisation; and exchange experience with priority districts.
Result within the first 12 months: a catalogue of transferable practices and a plan for monitoring early signs of deterioration.

8. Capacity building and programme of seven workshops

The project application provides for seven educational workshops, one in each administrative district, to facilitate information exchange between levels of government and local stakeholders, transfer knowledge on climate risks and improve preparedness. [1] The workshops must produce a concrete local output, not merely convey information.

8.1. Competencies to be developed

Understanding risk	interpretation of hazards, exposure, vulnerability, capacity, scenarios and uncertainty
Working with data	use of maps, indicators and local records, and documentation of data quality
Integration into plans	translating findings into an objective, measure, budget, responsibility and indicator
Project preparation	problem description, intervention logic, feasibility study, life-cycle cost and financing
Risk communication	clear messages, audience segmentation, actionable warnings and media engagement
Monitoring and learning	baseline, outcome indicators, evaluation, review and exchange of good practices

8.2. Proposed one-day workshop programme

Time	Content
11:00–11:30	Participant registration
11:30–11:40	Welcome address by a representative of the Provincial Secretariat for Urban Planning and Environmental Protection
11:40–12:00	Presentation of the CLIMAAX programme and the CLIMACHANGE project
12:00–12:30	Presentation of the results of the first and second project phases, with particular reference to the climate risk assessment in AP Vojvodina
12:30–13:00	Climate risks, emergencies and existing response mechanisms
13:00–13:30	Presentation of the Geoportal and opportunities to use spatial data in risk assessment and management
13:30–14:00	Open discussion with participants and completion of the survey
14:00–15:00	Refreshments and informal exchange of experience

Depending on the location and availability of expert lecturers, the programme may be supplemented with dedicated presentations on observed climate change, future climate projections, risk assessment, relevant projects and opportunities to improve regional and local plans. The programme framework is based on the planned seminar topics: presentation of the project and its results, climate risks and emergencies, the Geoportal, discussion and survey.

8.3. Expected results of the educational seminars

The organised seminars are expected to contribute to:

- better understanding of climate risks and vulnerability across AP Vojvodina;
- familiarising participants with the results of the first and second phases of the CLIMACHANGE project;
- improving knowledge of how climate and spatial data can be used in planning;
- better linking climate risk assessment with disaster risk reduction and emergency management systems;
- exchange of experience among provincial institutions, local self-governments, professional services and other stakeholders;
- collecting participants' views on existing risks, capacities, needs and opportunities to improve local and regional plans;
- identifying topics for further capacity building and professional support to local self-governments;
- increasing project visibility and raising awareness of the need for timely climate change adaptation.

The survey planned at the end of each seminar will be used as a supplementary instrument to examine participants' views, experiences and needs. Its results will help guide further project activities and future improvements to climate risk management recommendations.

8.4. Expected outputs of each workshop

In accordance with the planned programme, each educational seminar is expected to provide for:

- recording the number and composition of participants based on attendance lists;
- presenting the CLIMAAX programme, the CLIMACHANGE project and the results of the first and second project phases;
- familiarising participants with the identified climate risks and possibilities for using spatial data and the Geoportal;
- exchanging experience among representatives of provincial institutions, local self-governments, professional services and other stakeholders;
- collecting participants' views on climate risks, existing capacities, barriers and support needs through a survey;
- recording proposals and observations from the open discussion, where documented;
- identifying topics requiring additional information, training or institutional support;
- contributing to awareness raising and a better understanding of the importance of climate change adaptation at regional and local levels.

Seminar outputs will be documented through participant attendance lists, completed survey questionnaires, event programmes and other available supporting materials.

"TRAINING + MENTORING" MODEL

A one-day workshop is not sufficient to change practice. Each district should receive at least two follow-up online consultations and one joint experience-sharing session after six months.

9. Communication, educational materials and online campaign

Communication is a risk management measure only when it enables the recipient to take timely and specific action. General climate change messages should be linked to the local risk, season, sector and decision. The system must combine websites, social media, local media, SMS/applications, advisory services, schools and face-to-face communication.

9.1. Target group and message matrix

Target group	Core message	Best format
Decision-makers	Risk affects budgets, development and continuity of services.	Short policy brief, map, dashboard and budget recommendation.
Local officials and public enterprises	How to integrate risk into a plan, project and operating protocol.	Manual, training, checklist and technical workshop.
Farmers and cooperatives	What to do this week/season to reduce risk.	Agrometeorological message, demonstration, video and adviser.
Health and social services, and employers	Whom to protect and when to activate a heat plan.	Protocol, contact list, warning and poster.
Citizens	What risk is approaching, what it means and which actions protect the household.	Short message, infographic, local media and event.
Children and young people	How the local climate is changing and how to participate.	School package, experiment, quiz and citizen science.
Media	Accurate data, context, source and recommended action.	Media package, expert contact, graphics and FAQ.

9.2. Proposed online campaign

Topic	Content
Understanding risk	What relative and agricultural drought are; how to read a map; what a scenario means.
Water	Water efficiency, retention, responsible abstraction and drought planning.
Soil and crops	Cover crops, organic matter, crop rotation, timing and agrometeorological advice.
Heat and health	Vulnerable groups, outdoor work, cooling spaces and urban shade.
Local solutions	Examples from the seven districts, short interviews and visual measure cards.
Plans and financing	How a proposal becomes a project; invitation to local stakeholders to submit ideas.

Results and next steps	What has been done, who is responsible, where to track data and how to participate.

9.3. Standard for a single post

1. A headline that describes the local problem without sensationalism.
2. One verifiable data point or map with a clear source and date.
3. An explanation of what the information means for the specific target group.
4. One to three actions that can be taken immediately or during the next period.
5. A contact point or place for further information.
6. An accessible visual format, alternative text for the image and a mobile-friendly version.

EXAMPLE DROUGHT MESSAGE

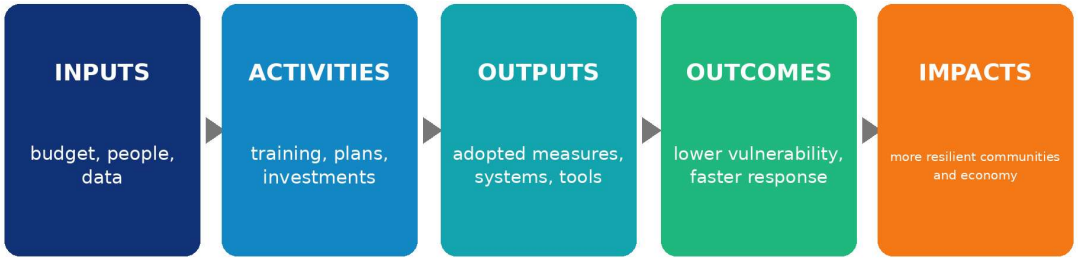
"Soil moisture and the water balance indicate increasing crop stress in the coming period. Check actual soil moisture in the field before irrigating, prioritise critical phenological stages and follow the advisory service's recommendations. Do not increase abstraction without confirming that the source is permitted and sustainable."

EXAMPLE HEAT MESSAGE

"A period of high heat stress is expected. Older people, children, people with chronic conditions and outdoor workers face greater risk. Provide water, shade and more frequent breaks, check on people who live alone and follow the instructions of health services."

10. Monitoring, evaluation and learning

Monitoring must distinguish whether an activity has been completed, whether it produced the expected outcome and whether risk has decreased. The number of training sessions, trees planted or kilometres of pipe alone is insufficient unless functionality, maintenance, accessibility and impacts on vulnerable groups are also monitored. Climate-ADAPT emphasises that monitoring, evaluation and review are integral parts of the iterative adaptation cycle. [10]



Indicators must track not only completed activities, but also actual changes in risk and capacity.

Figure 9. Results chain for adaptation monitoring.

10.1. Proposed key indicators

Domain	Example indicator	Frequency
Governance	IUKR; number of plans with designated risk owners; frequency of coordination meetings	annually
Assessment and data	number of districts with updated indicators; update time; data coverage	seasonally/annually
Plans	share of relevant plans reviewed and amended; number of measures with a budget and lead entity	annually
Water	network losses; m^3/t of product; retention capacity; share of metered abstractions	monthly/seasonally
Soil	organic matter; infiltration; hectares under protective practices; erosion/salinisation	annually/multi-annually
Agriculture	yield variability; hectares under adapted practices; use of advice; insurance	seasonally/annually
Health	heat-plan activations; coverage of vulnerable people; heat-related outcomes	during the season
Warning	issue time; message reach; percentage of messages containing an action; number of exercises	per event
Communication	reach, engagement, downloads of materials, and changes in knowledge and behaviour	monthly/by campaign
Equity	participation and benefits by gender, age, location, farm size and vulnerability	annually
Finance	adaptation budget; preventive/recovery share; leverage of external	annually

	funds	
Risk outcome	service disruptions, damage, avoided losses, recovery time and residual risk	per event/annually

10.2. Evaluation questions

- Have priority districts and vulnerable groups received proportionally greater support?
- Are indicators of risk, service disruption or damage changing in the desired direction?
- Are the measures functional during an extreme event, rather than merely formally completed?
- Which assumptions proved incorrect and what unintended consequences emerged?
- Have maintenance costs, staff and data been secured?
- Which measure should be continued, expanded, modified or discontinued?
- How should the findings be translated into amendments to the plan, budget and standards, and into the next assessment cycle?

ANNUAL PUBLIC REVIEW

A concise annual “AP Vojvodina Climate Risk and Adaptation Review” is recommended, covering the status of hazards and consequences, indicator progress, implemented measures, available financing, gaps and decisions for the following year.

11. Financing and preparation of the investment portfolio

Adaptation is most successfully financed through a combination of regular budgets, sectoral incentives, public investment, European and international funds, loans, insurance and private participation. The source is selected according to the type of measure, project maturity, beneficiary, geographical scope and expected revenue. The availability of individual calls and eligibility conditions changes over time and must be verified before applying.

Provincial and local budgets	coordination, plans, data, training, maintenance, small rapid measures and co-financing
National programmes and incentives	agriculture, water, environmental protection, health, infrastructure and civil protection
EU pre-accession and territorial cooperation	IPA, IPARD, Interreg and other instruments for infrastructure, rural development, cooperation and capacity
Horizon Europe / EU Mission / LIFE	demonstrations, innovation, climate services, nature-based solutions, governance and replication
International financial institutions	EIB, EBRD, World Bank and development banks for major investments and technical assistance
Climate and environmental funds	GCF, GEF and donor programmes, usually through accredited/national partners
Private sector and insurance	beneficiary investment, performance-based contracts, insurance, value chains and public-private arrangements with safeguards for the public interest

11.1. Minimum project fiche for financing

- Problem and evidence of risk; location and target group;
- Baseline and no-intervention scenario;
- Objective and measurable resilience outcomes;
- Description of the solution and alternative options;
- Lead entity, ownership, partners and permits;
- Capital and operating costs, maintenance and service life;
- Benefits, avoided losses and co-benefits;
- Impact on emissions, nature, gender and vulnerable groups;
- Project risks, adaptation and mitigation measures;
- Procurement and implementation plan, and indicators;
- Funding source, co-financing and financial sustainability.

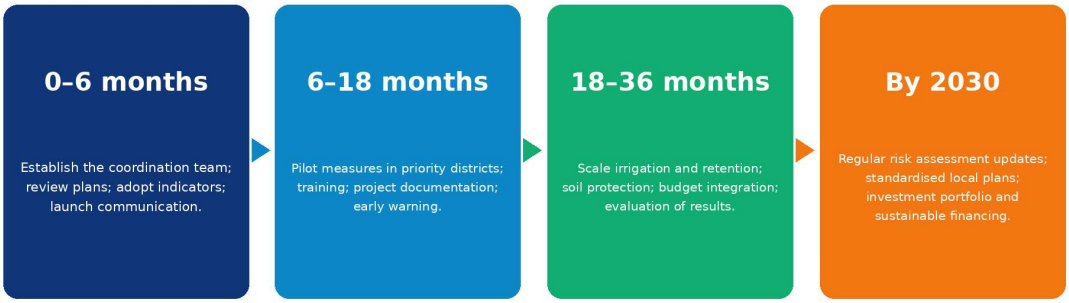
11.2. Adaptation budget tagging

For each budget activity, the following tag is recommended: (A) adaptation as the primary objective; (B) significant contribution to adaptation; (C) enabling activity; (N) no relevant contribution. The tag should be accompanied by the climate risk, target group, district, indicator and expected result. This does not replace financial control, but enables an overview of how much is being invested preventively and where gaps remain.

RULE FOR MAJOR INVESTMENTS

Before approving a significant public investment, conduct climate proofing covering: the relevant hazard and scenario, critical design threshold, sensitivity over the life cycle, alternatives, residual risk, continuity plan and maintenance cost.

12. Roadmap 2026–2030



The roadmap is updated at least annually on the basis of new data, experience and budget options.

Figure 10. Proposed roadmap for moving from risk assessment to implementation and learning.

By the end of 2026	coordination mechanism; seven workshops; baseline IUKR measurement; review of priority plans; data catalogue; communication campaign; at least one project fiche per district
During 2027	harmonised drought/heat thresholds and protocols; pilot packages in RS124, RS126, RS122 and RS125; heat-health action plans; public annual review
2028	evaluation of pilots; scaling of successful measures; climate proofing of major investments; integration into budgets and sectoral plans; expansion of insurance and advisory services
2029	updated regional risk assessment; cascading-risk assessment; consolidated investment portfolio; exchange and replication of practices among districts
2030	independent performance evaluation; review of priorities and objectives; documentation of avoided losses and residual risk; plan for the next cycle

12.1. Allocation of responsibilities – summary RACI matrix

Task	Responsible / accountable	Consulted	Informed
Regional assessment and indicators	Provincial Secretariat / RHMZ	LSGUs, professional institutions, sectors	public and businesses
Local plan analysis	LSGUs	Province, local services, experts	local stakeholders and citizens
Water and agricultural measures	competent water/agricultural authorities and users	LSGUs, RHMZ, advisory services	communities and nature protection authorities
Warning and preparedness	RHMZ and competent protection/rescue authorities	health services, LSGUs, media, utility services	population and businesses
Heat-health protection	health authorities and LSGUs	social services, employers, schools	vulnerable groups and the public
Monitoring and annual report	Provincial coordination mechanism	all measure owners	public, assemblies and funders

FINAL OUTCOME

By 2030, provincial and local systems should have updated risk assessments, clearly responsible institutions, financed and monitored measures, functioning early warning, prepared projects and evidence that the vulnerability of priority districts and groups is decreasing.

Annex A. Rapid checklist for reviewing a local plan

Question	Yes	Partly	No / missing evidence
Does the document identify relevant climate hazards and their sources?	☐	☐	☐ _____
Does it use future climate scenarios and at least two time horizons?	☐	☐	☐ _____
Does it map the exposure of people, crops, water, nature, infrastructure and services?	☐	☐	☐ _____
Does it identify vulnerable groups and spatial inequalities?	☐	☐	☐ _____
Does it analyse cascading and cross-sectoral risks?	☐	☐	☐ _____
Have risk owners and responsibilities been identified?	☐	☐	☐ _____
Are the resilience objectives measurable?	☐	☐	☐ _____
Do the measures have a deadline, lead entity, budget, source and indicator?	☐	☐	☐ _____
Have the measures been checked for maladaptation, emissions and impacts on nature?	☐	☐	☐ _____
Is there a warning and action protocol?	☐	☐	☐ _____
Has participation by the public and vulnerable groups been ensured?	☐	☐	☐ _____
Is there a baseline, target and reporting schedule?	☐	☐	☐ _____
Have triggers for plan review been defined?	☐	☐	☐ _____

Are the results publicly available in an understandable form?	☐	☐	☐ _____

Annex B. Measure project fiche template

Measure title and code	
Location and territorial coverage	
Climate risk and evidence	
Target groups and beneficiaries	
Objective and expected outcome	
Description of activities and alternatives	
Lead entity, partners and ownership	
Permits, conditions and technical documentation	
Deadline and phases	
Capital cost / operating cost	
Funding source and co-financing	
Indicator, baseline and target	
Implementation risks and maladaptation	
Impact on vulnerable groups, nature and emissions	
Maintenance and post-completion plan	

Annex C. IUKR assessment form

Domain	Baseline score 0–4	Score after intervention	Change	Evidence / note
Governance and responsibilities				
Data and risk assessment				
Planning and standards				
Financing				
Implementation and maintenance				
Warning and preparedness				
Participation and equity				
Monitoring, evaluation and learning				

Initial IUKR: _____ / 32 = _____ % Final IUKR: _____ / 32 = _____ % Improvement: _____ percentage points

Annex D. Proposed dataset for local assessment

Climate	precipitation, temperature, heatwaves, dry days, SPI/SPEI, ET_0, extreme precipitation
Water	flows/levels, groundwater, abstraction, losses, quality, reservoirs and ecological needs
Soil	type, organic matter, moisture, infiltration, erosion, salinisation, compaction
Agriculture	crops, yields, irrigation, livestock, farm size, insurance and economic exposure
Population and health	age, disability, social vulnerability, outdoor work, health outcomes and access to services
Nature	protected areas, habitats, corridors, wetlands, wildfire risk and invasive species
Infrastructure and services	roads, bridges, water supply, sewerage, energy, healthcare, schools, shelters and critical points
Damage and events	location, date, hazard, direct/indirect damage, disruptions, affected groups and recovery time
Measures and finance	projects, costs, sources, status, maintenance, indicators and evaluation

Annex E. Glossary of key terms

Adaptation	the process of adjusting to the actual or expected climate and its effects in order to reduce harm or take advantage of beneficial opportunities
Climate hazard	a physical event or trend that may cause loss or damage
Exposure	the presence of people, assets, ecosystems, infrastructure or activities in places that may be affected
Vulnerability	the propensity of a system to be adversely affected, including sensitivity and lack of capacity
Resilience capacity	the ability to anticipate, prepare, respond, adapt and recover while preserving key functions
Residual risk	risk that remains after measures have been implemented
Maladaptation	a measure that unintentionally increases risk, inequality, emissions or degradation of nature, now or in the future
Nature-based solutions	the protection, sustainable management and restoration of ecosystems to address societal challenges while providing benefits for people and biodiversity
Early warning	an integrated system of risk knowledge, monitoring/forecasting, communication and response preparedness
RPI	composite risk priority index used in CLIMACHANGE Phase 2
IUKR	project index for measuring the maturity and improvement of climate risk management

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Reliability and updating note

The document uses project data available up to December 2025 and public online sources verified on 10 January 2026. Plans, regulations, funding programmes and operating procedures may change. Before adopting a specific decision, the applicable regulation, current data, institutional competence and funding conditions should be verified with the competent official institution.

CLIMAAX
climate ready regions

FROM RISK ASSESSMENT TO DECISION, FROM DECISION TO RESILIENCE

A practical guide for provincial and local institutions, professional services, agriculture and communities of AP Vojvodina



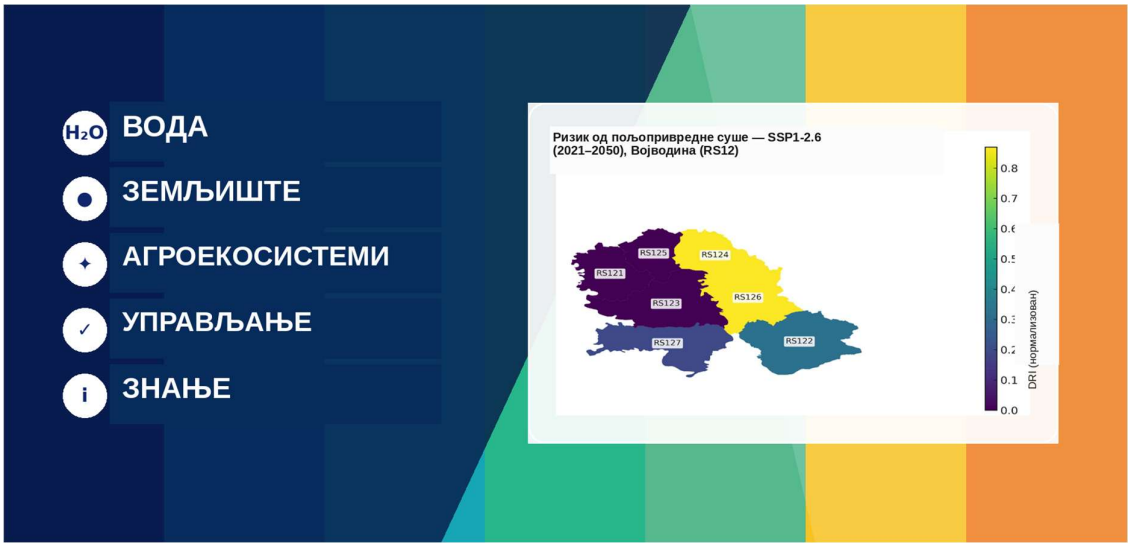
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CLIMAAX
climate ready regions

ВОДИЧ ЗА УПРАВЉАЊЕ КЛИМАТСКИМ РИЗИЦИМА И ПРИЛАГОЂАВАЊЕ НА КЛИМАТСКЕ ПРОМЕНЕ У АП ВОЈВОДИНИ

Најбоље праксе и предложене мере адаптације на локалном и регионалном нивоу

CLIMACHANGE – Adapt on clime change in APV | Phase 3



Република Србија / Аутономна Покрајина Војводина
Верзија 1.0 | јануар 2026.

Funded by
the European Union

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Назив документа	Водич за управљање климатским ризицима и прилагођавање на климатске промене у АП Војводини
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Територијални обухват	АП Војводина – седам управних области (NUTS 3)
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Верзија и датум	1.0 | јануар 2026.

ВАЖНА НАПОМЕНА

Водич претвара резултате климатске процене ризика у оперативне кораке. Карте и рангирање области заснивају се на CLIMACHANGE процени из Фазе 2. Предложене мере нису замена за техничку документацију, поступке процене утицаја, водне услове, урбанистичке процедуре, јавне набавке или друге законске обавезе. Пре улагања, свака мера мора бити проверена на конкретној локацији, укључујући ризик од неприлагођености (маладаптације).

ЕУ изјава о одрицању одговорности: This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101093864. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.

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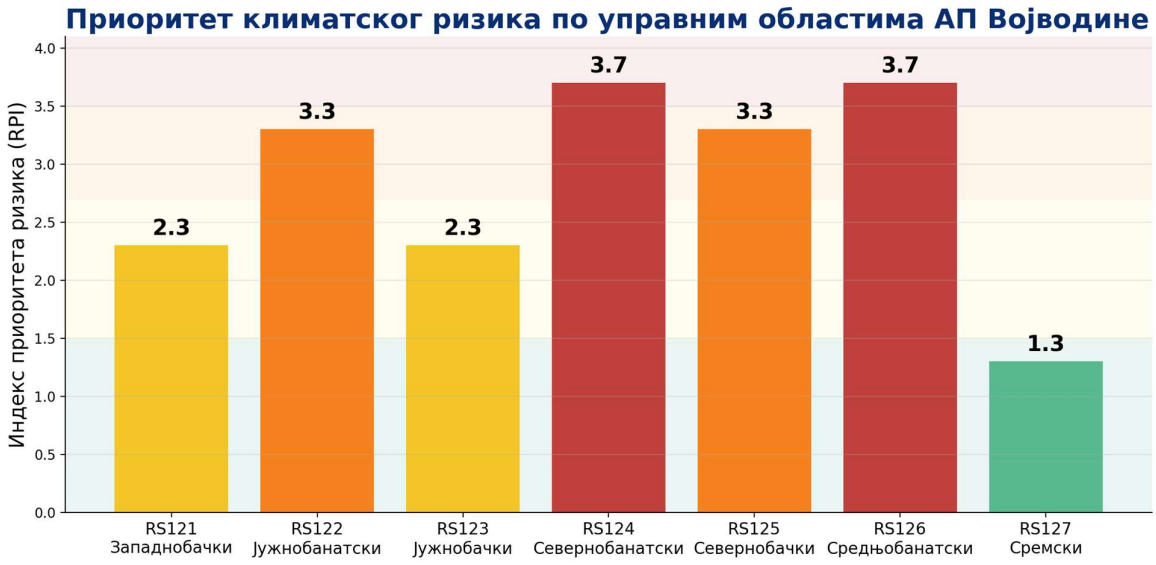
Извршни сажетак

АП Војводина је изразито изложена климатским ризицима који се међусобно појачавају: релативној и пољопривредној суши, топлотним таласима, променљивој расподели падавина, интензивним падавинама и поплавама, деградацији земљишта, притисцима на водне ресурсе, здравље, биодиверзитет и инфраструктуру. Национални Програм прилагођавања указује да се Србија загрева брже од глобалног просека и да су суше и високе температуре одговорне за највећи део процењених штета од климатских и временских екстрема у периоду 2000–2020. [4]

CLIMACHANGE процена ризика за свих седам управних области АП Војводине показала је да су Севернобанатска (RS124) и Средњобанатска област (RS126) у категорији веома високог приоритета, Јужнобанатска (RS122) и Севернобачка (RS125) у високом приоритету, Западнобачка (RS121) и Јужнобачка (RS123) у средњем, док Сремска област (RS127) има низак релативни приоритет и може да послужи као референтно подручје за поједине праксе отпорности. [3]

ШТА ОВАЈ ВОДИЧ ДОНОСИ

Јединствен поступак за проверу и унапређење постојећих планова; портфељ од 30 практичних мера; детаљне приоритетне мере за воду, земљиште, агроекосистеме, институције и комуникацију; препоруке за свих седам области; програм обука и кампање; показатеље за праћење напретка; образац за мерење побољшања управљања ризиком.



Извор: CLIMACHANGE, резултат Фазе 2, Табела 2-19. RPI је композитни индекс озбиљности, хитности и капацитета отпорности.

Слика 1. Рангирање управних области према Индексу приоритета ризика (RPI) из Фазе 2 пројекта CLIMACHANGE.

Десет одлука које не треба одлагати

1. Успоставити стални Покрајински координациони механизам за климатске ризике са јасним власницима ризика, одговорностима и годишњим програмом рада.
2. Укључити резултате CLIMAAX процене, сценарије и мапе у покрајинске и локалне развојне, просторне, урбанистичке, водне, пољопривредне, здравствене и планове заштите и спасавања.
3. Дефинисати оперативне класе и прагове за сушу, топлоту и повезане последице, уз транспарентан протокол упозорења и препоручених радњи.
4. Приоритетно развијати ретенцију воде, ефикасно наводњавање и управљање потражњом у RS124, RS126, RS122 и RS125, уз проверу одрживости захватања воде.

5. Успоставити програм заштите земљишта и повећања органске материје, са демонстрационим парцелама и саветодавном подршком.
6. Повезати агрометеоролошке информације са препорукама које пољопривредник може одмах да примени.
7. Израдити локалне планове заштите здравља од врућине и обезбедити подршку старијима, деци, радницима на отвореном и другим рањивим групама.
8. Увести климатску проверу свих већих јавних инвестиција и буџетско означавање расхода за адаптацију.
9. Спровести седам територијалних радионица и трајни програм обуке локалних службеника, саветодаваца, комуналних система, цивилне заштите и других носилаца.
10. Мерити напредак кроз заједнички систем показатеља, јавни годишњи преглед и периодично ажурирање процене ризика.

1. Сврха, обухват и начин коришћења водича

Водич је израђен као оперативни производ треће фазе пројекта CLIMACHANGE. Његова сврха је да резултате процене климатског ризика претвори у одлуке које се могу планирати, финансирати, спровести и мерити. У складу са пројектном апликацијом, документ подржава анализу постојећих процедура и стратегија, идентификацију потребе за њиховим прилагођавањем, јачање капацитета, подизање свести и ширење релевантних мера у рањивим локалитетима. [1]

1.1. Коме је водич намењен

- покрајинским секретаријатима, заводима и јавним предузећима;
- градовима и општинама, нарочито тимовима за планирање, урбанизам, животну средину, пољопривреду, локални економски развој и ванредне ситуације;
- водопривредним, комуналним, здравственим и социјалним службама;
- пољопривредним саветодавним службама, задругама, удружењима и газдинствима;
- управљачима заштићених подручја, стручним и научним институцијама;
- организацијама цивилног друштва, школама, медијима, привреди и грађанима.

1.2. Како користити документ

1. Почети од профила ризика и одредити којој категорији припада област или локална самоуправа.
2. Попунити брзу проверу постојећих планова из Прилога А и утврдити највеће празнине.
3. Из портфеља мера одабрати комбинацију структурних, природних, управљачких, финансијских и образовних решења.
4. Проценити мере кроз критеријуме користи, трошка, хитности, изводљивости, једнакости, емисија и ризика од неприлагођености.
5. Претворити изабране мере у пројектне картице са одговорностима, буџетом, роковима и показатељима.
6. Спроводити, пратити резултате и најмање једном годишње проверити да ли се променио ризик, податак, пропис, финансирање или приоритет.



Слика 2. Ланац климатског ризика коришћен за повезивање опасности, изложености, рањивости и последица.

ПРИНЦИП „НЕМА ЖАЉЕЊА”

Предност треба дати мерама које имају корист и у садашњој клими, које су флексибилне, реверзибилне или се могу фазно проширивати. Примери су смањење губитака воде, побољшање структуре земљишта, рано упозоравање, засењивање јавних простора, заштита рањивих група и боља координација.

1.3. Водећи принципи

Принцип	Практично значење
Заснованост на доказима	Комбиновати CLIMAAX резултате, локалне податке, стручна знања и искуство становништва.
Будући ризик	Не планирати само према прошлим екстремима; користити најмање један нижи и један виши сценарио емисија.
Праведност	Идентификовати ко је најизложенији, ко има најмање средстава за прилагођавање и ко може ненамерно сносити трошкове мере.
Вишесекторски приступ	Вода, пољопривреда, здравље, природа, инфраструктура и развој морају се планирати повезано.
Природна решења	Чувати и обнављати екосистеме када могу безбедно и ефикасно смањити ризик.
Избегавање неприлагођености	Не пребацивати ризик на друге локације, групе, секторе или будуће генерације и не повећавати емисије без оправдања.
Итеративност	План је живи документ који се мења са новим подацима и резултатима праћења.

2. Профил климатског ризика АП Војводине

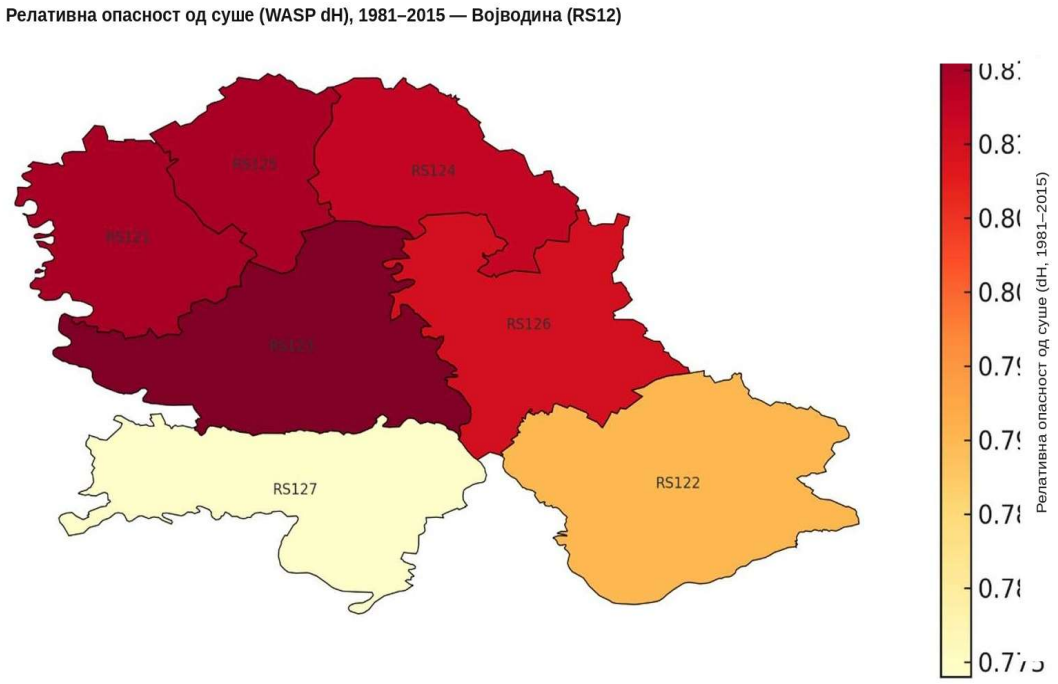
АП Војводина (NUTS 2: PC12) обухвата приближно 21.500 км^2 и седам NUTS 3 управних области: Западнобачку (RS121), Јужнобанатску (RS122), Јужнобачку (RS123), Севернобанатску (RS124), Севернобачку (RS125), Средњобанатску (RS126) и Сремску (RS127). Пољопривреда, нарочито производња пшенице и кукуруза, изразито је зависна од расположивости воде и температуре током вегетације. [3]

2.1. Кључне опасности и повезани ризици

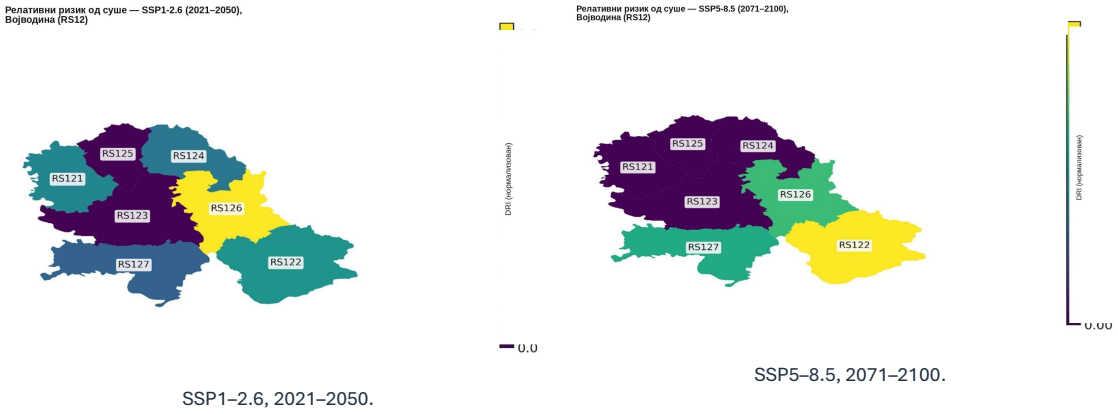
Опасност	Главни механизам утицаја
Релативна и метеоролошка суша	Дефицит падавина, дужи сушни периоди и повећана евапотранспирација
Пољопривредна суша	Недовољна влажност земљишта и водни биланс за усеве током критичних фенофаза
Топлотни таласи	Здравствени стрес, веће потребе за водом и енергијом, оштећења усева и стоке
Интензивне падавине и бујично/плувијално плављење	Локално плављење, ерозија, оштећење инфраструктуре и усева
Хидролошки и еколошки стрес	Притисак на површинске и подземне воде, мочваре, каналске системе и биодиверзитет
Каскадни ризици	Комбинације топлоте, суше, пожара, прекида снабдевања, раста цена хране и социјалних последица

2.2. Резултати CLIMACHANGE процене

Фаза 2 је прилагодила CLIMAAX методологију локалном контексту, користећи WASP/dH и P–ET_0 као примарне показатеље релативне и пољопривредне суше, док су SPI и SPEI коришћени за контекстуалну проверу резултата кроз доступне податке и билтене РХМЗ-а. Процена је повезала показатеље опасности са подацима о изложености, рањивости и капацитетима, као и са будућим сценаријима SSP1–2.6 и SSP5–8.5. [3]



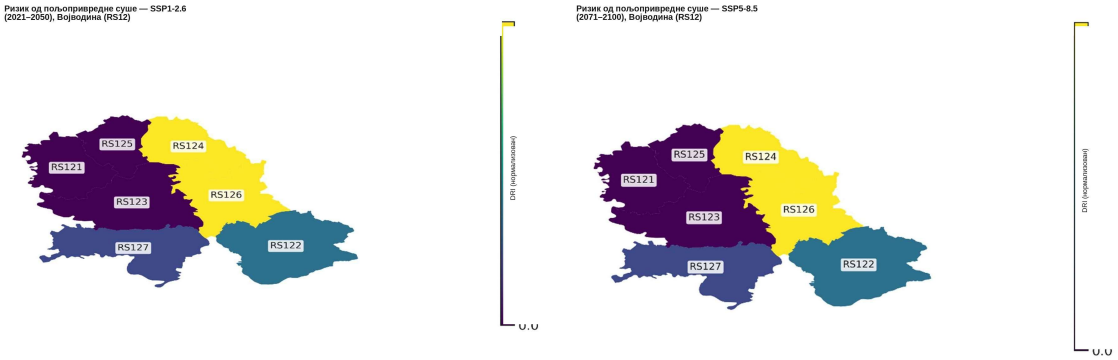
Слика 3. Релативна опасност од суше у референтном периоду 1981–2015. (извор: Фаза 2 пројекта CLIMACHANGE).



SSP1–2.6, 2021–2050.

SSP5–8.5, 2071–2100.

Слика 4. Релативна опасност од суше у будућим сценаријима. Карте приказују просторне разлике у оквиру коришћених сценарија и не представљају прогнозу штете за појединачну парцелу.



Пољопривредни ризик, SSP1–2.6

Пољопривредни ризик, SSP5–8.5

Слика 5. Упоредни приказ пољопривредног ризика од суше по областима (извор: Фаза 2 пројекта CLIMACHANGE).

2.3. Приоритети по управним областима

Област	Приоритетни профил ризика	Хитност	Капацитет	RPI	Приоритет
RS121 – Западнобачка	Релативна и пољопривредна суша	Више акције потребно	0,55	2,3	**Средњи**
RS122 – Јужнобанатска	Релативна и пољопривредна суша	Непосредна акција	0,35	3,3	**Висок**
RS123 – Јужнобачка	Релативна и пољопривредна суша	Више акције потребно	0,68	2,3	**Средњи**
RS124 – Севернобанатска	Релативна и пољопривредна суша	Непосредна акција	0,30	3,7	**Веома висок**
RS125 – Севернобачка	Релативна и пољопривредна суша	Непосредна акција	0,40	3,3	**Висок**
RS126 – Средњобанатска	Релативна и пољопривредна суша	Непосредна акција	0,33	3,7	**Веома висок**
RS127 – Сремска	Релативна и пољопривредна суша	Праћење	0,75	1,3	**Низак**

Напомена: капацитет је композитна оцена финансијских/институционалних, природних и људских/социјалних способности; виша вредност значи већи капацитет. RPI је релативни индекс приоритета из Фазе 2.

2.4. Ограничења и правилно тумачење

- Процена је регионална (NUTS 3) и не замењује процену за парцелу, насеље, објекат или конкретну инвестицију.
- Различити скупови података имају различиту просторну и временску резолуцију; доступност детаљних података о земљишту, наводњавању, газдинствима и друштвеној рањивости остаје ограничење.
- Сценарио није прогноза. Он приказује могућу путању под одређеним претпоставкама и служи за проверу робусности одлука.
- Климатски ризик се мења са изложеношћу, коришћењем земљишта, демографијом, ценама, инфраструктуром и институцијама; зато процену треба периодично ажурирати.
- Рангирање не значи да области нижег приоритета немају локалне „вруће тачке” нити да се у њима могу одлагати све мере.

3. Садашњи систем управљања ризиком: поступци, снаге и празнине

Управљање климатским ризиком у АП Војводини не почиње од нуле. Постоје системи метеоролошког и хидролошког осматрања, процене ризика од катастрофа, планови заштите и спасавања, водна, пољопривредна, просторна и урбанистичка документа, локални планови развоја, инструменти осигурања, саветодавне службе, научне институције и програми финансијске подршке. Проблем није само одсуство инструмената, већ њихова фрагментација, неравномерна територијална покривеност, реактивно финансирање и недовољно коришћење будућих климатских сценарија. [3][4][5]

3.1. Типичан постојећи ток одлучивања

1 Праћење и упозорење	РХМЗ, водопривредне и друге службе прате опасности; информације се прослеђују институцијама и јавности.
2 Процена ризика	Органи и јединице локалне самоуправе процењују ризике и сценарије у оквиру прописаних поступака и секторских анализа.
3 Планирање	Ризици се уграђују у развојне, просторне, урбанистичке, водне, пољопривредне, здравствене и планове заштите и спасавања – различитом дубином.
4 Буџетирање и пројекти	Мере се финансирају из редовних буџета, трансфера, подстицаја, фондова, донација, кредита и приватних улагања.
5 Одговор и опоравак	Службе реагују током догађаја; накнадно се процењују штете и потребе.
6 Праћење учинка	Праћење је често усмерено на утрошак и завршене активности, а ређе на промену рањивости и избегнуте губитке.

3.2. Главне снаге

- стручни капацитет РХМЗ, универзитета, института и покрајинских институција;
- постојеће мреже за праћење времена, вода, пољопривреде и животне средине које се могу боље повезати;
- искуство у управљању водама, мелиорацијама, пољопривредном саветовању и заштити од катастрофа;
- расположиви европски и отворени скупови података, као и поновљиви CLIMAAX токови обраде;
- растућа заинтересованост локалних власти, удружења, невладиних организација и пољопривредника;
- национални Програм прилагођавања са мерама за знање, сушу, воде, пољопривреду, шуме, здравље, урбанизам, инфраструктуру и локалне капацитете. [4]

КЉУЧНА ПРОМЕНА ПРИСТУПА

Са управљања догађајем прећи на управљање ризиком: планирати пре штете, користити будуће сценарије, повезати секторе, унапред договорити прагове и радње, обезбедити превентивно финансирање и мерити да ли је рањивост стварно смањена.

3.3. Критичне празнине

Домен	Празнина коју треба затворити
Управљање	расуте надлежности; недовољно јасни власници ризика и механизми заједничког одлучивања
Планови	климатски сценарији и квантитативни показатељи нису систематски уграђени у сва релевантна документа
Прагови ризика	не постоје усаглашени покрајински квантитативни прагови прихватљивог/толерабилног ризика од суше
Подаци	недовољна резолуција и интероперабилност података о земљишту, водама, наводњавању, газдинствима и рањивим групама
Превенција	финансирање и даље претежно реагује на штету, а мање на превентивно смањење ризика
Инфраструктура	покривеност наводњавањем је ограничена и просторно неуједначена; Фаза 2 наводи наводњавану површину испод 3% обрадивог земљишта на регионалном нивоу.
Осигурање	Фаза 2 процењује да је покривеност пољопривредним осигурањем испод 30%
Локални капацитет	ограничена климатска писменост и недостатак сталног техничког особља у делу локалних управа
Учешће	мала газдинства, руралне жене, старији пољопривредници и друге рањиве групе нису довољно заступљени
Праћење ефекта	недовољно се мери смањење рањивости, отпорност система и избегнута штета

4. Како проверити и прилагодити постојеће планове

Најбржи пут није израда потпуно нових паралелних докумената, већ систематско укључивање климатског ризика у постојеће развојне и секторске планове, уз посебан акциони план адаптације када је потребан. Национални Програм такође даје предност укључивању адаптације у секторске политике и планове, уз систематско праћење и извештавање. [4]

4.1. Минимални стандард климатски отпорног плана

Елемент	Питање за проверу	Оцена 0–3
1. Мандат и одговорност	Именован координатор, власници ризика, међусекторски тим и начин извештавања.	0 1 2 3
2. Садашња клима	Коришћени релевантни подаци о хазардима, штетама, прекидима и рањивости.	0 1 2 3
3. Будући сценарији	Размотрен најмање један нижи и један виши сценарио, са временским хоризонтима.	0 1 2 3
4. Изложеност	Мапирани људи, усеви, природа, вода, инфраструктура, услуге и имовина.	0 1 2 3
5. Рањивост и неједнакост	Идентификоване осетљиве групе, капацитети и просторне разлике.	0 1 2 3
6. Каскадни ризици	Размотрене везе суша–топлота–вода–храна–енергија–здравље–економија.	0 1 2 3
7. Циљеви	Дефинисани мерљиви исходи отпорности, не само активности.	0 1 2 3
8. Мере	Портфељ садржи превентивне, структурне, природне, финансијске и образовне мере.	0 1 2 3
9. Провера мера	Процена користи, трошка, емисија, једнакости, изводљивости и маладаптације.	0 1 2 3
10. Финансирање	Утврђени извор, носилац, припрема пројекта и трошкови животног циклуса.	0 1 2 3
11. Спровођење	Рокови, одговорности, набавке, дозволе, партнери и капацитети.	0 1 2 3
12. Праћење и ревизија	Показатељи, почетно стање, циљне вредности, учесталост и окидачи за ревизију.	0 1 2 3

Скала: 0 – није обухваћено; 1 – поменуто без анализе или одговорности; 2 – делимично операционализовано; 3 – потпуно уграђено, финансирано и праћено.

4.2. Индекс побољшања управљања климатским ризиком

За мерење побољшања предлаже се пројектни Индекс управљања климатским ризиком (ИУКР). То није законски прописан индекс, већ једноставан алат за Фазу 3. Осам домена оцењује се од 0 до 4: управљање; подаци и процена; планирање; финансирање; спровођење; рано упозоравање и спремност; учешће и праведност; праћење, евалуација и учење.

ФОРМУЛА

ИУКР (%) = збир остварених бодова / максималних 32 бода × 100. Побољшање = ИУКР након интервенције – почетни ИУКР. Предложени оперативни циљ за будућу примену водича јесте пораст најмање једног нивоа зрелости у најмање шест од осам домена, након утврђивања почетног стања.

0 – почетно	нема формалног приступа; реаговање је ad hoc
1 – основно	ризик је препознат, али без јасних процедура
2 – развија се	постоје делимични процеси, пројекти и одговорности
3 – интегрисано	ризик је уграђен у планове, буџете и рад служби
4 – адаптивно	систем учи, мери резултате, користи сценарије и редовно се ажурира

ИУКР, предложене тежине критеријума, индикативне категорије трошка, временски рокови и мапа пута представљају пројектне алате и стручне препоруке за потребе Фазе 3. Они нису законски прописани стандарди нити обавезне вредности преузете из националних докумената.

4.3. Поступак анализе документа

1. Одредити власника анализе и окупити тим који познаје документ, податке и спровођење.
2. Пописати све повезане планове, одлуке, буџете, пројекте и процедуре упозоравања/одговора.
3. Повезати циљеве и мере плана са мапама ризика, рањивим групама и критичним услугама.
4. Оценити 12 елемената минималног стандарда и осам домена ИУКР-а.
5. Утврдити празнине које могу проузроковати највећи губитак или блокирати спровођење.
6. Предложити прецизне измене: нови циљ, показатељ, мапа, поступак, буџетска линија, одговорна институција или мера.
7. Јавно проверити налазе са заинтересованим странама, посебно групама које сносе ризик или трошак.
8. Усвојити план измене, пратити спровођење и поновити оцену након 12–18 месеци.

5. Циклус планирања адаптације

Европски Adaptation Support Tool и Regional Adaptation Support Tool третирају адаптацију као флексибилан и итеративан циклус: припрема, процена ризика, избор опција, спровођење, праћење, евалуација и ажурирање. [10] Стандард ISO 14091 даје оквир за процену садашњих и будућих ризика као основу за планирање, спровођење и праћење адаптације. [12]



Слика 6. Предложени шестостепени циклус адаптације за покрајинске и локалне органе.

Корак 1 – Мандат, тим и учешће

Усвојити одлуку или задатак; именовати координатора; дефинисати власнике ризика; мапирати актере; обезбедити учешће рањивих група; договорити начин размене података и решавања конфликата.

Корак 2 – Процена ризика

Комбиновати историјске догађаје, CLIMAAX карте, будуће сценарије, изложеност, рањивост, капацитет и локално знање. Евидентирати неизвесност и недостатке података.

Корак 3 – Циљеви отпорности

Дефинисати шта мора остати функционално и под којим условима: снабдевање водом, усеви, здравство, путеви, школе, природна станишта, социјалне услуге. Поставити мерљиве циљеве.

Корак 4 – Избор мера

Развити више опција, укључујући „без акције”, природна и техничка решења, промену понашања, прописе, финансијске инструменте и комбиноване пакете.

Корак 5 – Финансирање и спровођење

Припремити техничке картице, студије, дозволе, буџет, набавке, партнерства, план одржавања и комуникацију. Приоритет дати мерама које су зреле и смањују највећи ризик.

Корак 6 – Праћење и ревизија

Мерити остварење, исход и промену ризика; проверавати неједнакости и нежељене последице; јавно извештавати и ажурирати план када се промене сценарио, праг, трошак или учинак.

5.1. Вишекритеријумско рангирање мера



Слика 7. Брза матрица за одлучивање пре детаљне вишекритеријумске анализе.

Критеријум	Предложена тежина	Оцена 1–5
Смањење ризика	25%	1 2 3 4 5
Хитност и временски хоризонт	15%	1 2 3 4 5
Трошковна ефикасност	15%	1 2 3 4 5
Техничка и институционална изводљивост	10%	1 2 3 4 5
Додатне користи за здравље, природу и развој	10%	1 2 3 4 5
Праведност и заштита рањивих група	10%	1 2 3 4 5
Робусност кроз сценарије	10%	1 2 3 4 5
Низак ризик од маладаптације и повећања емисија	5%	1 2 3 4 5

Тежине су почетни предлог. Тим их прилагођава локалном контексту, али мора документовати разлог и укључити заинтересоване стране.

5.2. Провера ризика од неприлагођености

- Да ли мера повећава потрошњу воде или енергије на неодржив начин?
- Да ли штити једну групу или локацију тако што повећава ризик другој?
- Да ли закључава систем у скупу, нефлексибилну инфраструктуру која неће бити одговарајућа у будућем сценарију?
- Да ли погоршава квалитет воде, земљишта, биодиверзитет или емисије гасова са ефектом стаклене баште?
- Да ли је одржавање реално финансирано и организовано током целог животног века?
- Да ли мера занемарује сиромашнија домаћинства, мала газдинства, старије, особе са инвалидитетом или друге рањиве групе?
- Да ли су претпоставке о доступности воде, земљишта, технологије и понашању корисника проверене?

6. Портфељ мера адаптације

Портфељ је организован према пет тема дефинисаних у радном плану Фазе 3: управљање водама, заштита земљишта, отпорност агроекосистема, институционална координација и подаци, те свест и образовање. Додате су попречне мере за здравље, урбана подручја, природу и инфраструктуру. Мере треба комбиновати; једна инвестиција ретко може самостално решити ризик. [3]



Слика 8. Пет повезаних стубова портфеља адаптације.

A. Управљање водама

Код	Мера	Време / трошак	Примарни обухват
A1	Локални водни биланси и планови суше	Брзо / €	све области
A2	Обнова, аутоматизација и ефикасност система за наводњавање	Средње–дуго / €€€	RS124, RS126, RS122, RS125
A3	Микроретенције, акумулације и прикупљање атмосферске воде	Средње / €€	приоритетне области
A4	Смањење губитака у јавном водоснабдевању и управљање потражњом	Средње / €€	градови и општине
A5	Заштита подземних и површинских вода и еколошких протока	Континуирано / €€	цела АПВ
A6	Плаво-зелена инфраструктура за задржавање падавина	Средње / €€	урбана подручја

Б. Заштита земљишта

Код	Мера	Време / трошак	Примарни обухват
B1	Покровни усеви и стална покривеност земљишта	Брзо / €	пољопривредне површине
B2	Повећање органске материје и прецизна примена ђубрива	Средње / €–€€	цела АПВ
B3	Конзервацијска обрада и контролисани пролази механизације	Средње / €€	ризична земљишта
B4	Противерозионе мере и заштитни појасеви	Средње / €€	изложене парцеле и канали
B5	Праћење салинизације, сабијања и влаге земљишта	Брзо / €	Банат и друге критичне зоне
B6	Демонстрационе парцеле и плаћања за екосистемске услуге	Средње / €€	пилот општине

Ц. Отпорност агроекосистема

Код	Мера	Време / трошак	Примарни обухват
C1	Сортимент и плодоред прилагођен топлоти и суши	Брзо / €	цела АПВ
C2	Прилагођавање рокова сетве и операција агрометеоролошким прогнозама	Брзо / €	цела АПВ
C3	Прецизно наводњавање повезано са влагом земљишта и ET_0	Средње / €€	приоритетне области
C4	Диверсификација производње и прихода газдинстава	Средње / €€	рурална подручја
C5	Топлотна заштита стоке, вода и вентилација	Брзо–средње / €€	сточарска подручја
C6	Интегрисано управљање штеточинама и новим биолошким ризицима	Континуирано / €	цела АПВ

Д. Институције, подаци и финансије

Код	Мера	Време / трошак	Примарни обухват
D1	Покрајински координациони механизам и власници ризика	Брзо / €	покрајински ниво
D2	Заједничка платформа показатеља и георефернцираних података	Средње / €€	цела АПВ
D3	Вишехазардни систем раног упозоравања и протоколи деловања	Средње / €€	све области

Код	Мера	Време / трошак	Примарни обухват
D4	Климатска провера планова, буџета и инвестиција	Брзо / €	покрајина и ЈЛС
D5	Финансијски инструменти, осигурање и фонд за превентивне мере	Средње / €€	цела АПВ
D6	Годишњи извештај о ризику и ревизија планова	Континуирано / €	покрајина и ЈЛС

Е. Знање, здравље и комуникација

Код	Мера	Време / трошак	Примарни обухват
E1	Седам територијалних радионица и програм обуке	Брзо / €	седам области
E2	Агрометеоролошке саветодавне поруке по културама	Брзо / €	пољопривредници
E3	Планови заштите здравља од врућине	Брзо / €	градови и општине
E4	Онлајн кампања и локални комуникациони пакети	Брзо / €	јавност
E5	Школски и омладински програми климатске писмености	Средње / €	образовне установе
E6	Партиципативно праћење и грађанска наука	Средње / €	локалне заједнице

Легенда трошка: € – низак; €€ – средњи; €€€ – висок капитални захтев. Категорије су индикативне и морају се потврдити студијом изводљивости и трошковима животног циклуса.

6.1. Десет приоритетних картица мера

D1 Покрајински координациони механизам за климатске ризике

Ризик/проблем	Фрагментиране надлежности и нејасно власништво над ризиком.
Кључне активности	Одлуком именовати међусекторски тим; дефинисати власнике ризика и RACI матрицу; усвојити годишњи план рада; квартално разматрати показатеље; укључити седам области, стручне институције, привреду и цивилно друштво.
Носилац и партнери	Покрајински секретаријат за урбанизам и заштиту животне средине; партнери: релевантни секретаријати, РХМЗ, МУП/Сектор за ванредне ситуације, ЈЛС, јавна предузећа, научне институције.
Време и трошак	0–6 месеци; низак директни трошак.
Показатељи	Одлука усвојена; број редовних састанака; проценат одлука са именованим носиоцем и роком; ИУКР домен управљања.
Заштитне мере / напомена	Не стварати паралелно тело без мандата; интегрисати постојеће механизме.

D2 Заједничка платформа података и показатеља

Ризик/проблем	Расути подаци, неусклађене резолуције и отежано ажурирање процене.
Кључне активности	Успоставити каталог података; споразуме о размени; јединствене метаподатке; периодично рачунати SPI, SPEI, П–ET_0, влагу земљишта, изложеност и рањивост; јавни преглед без осетљивих података; верзионисање методологије.
Носилац и партнери	Покрајина и РХМЗ уз геодетске, водне, пољопривредне, здравствене и статистичке институције.
Време и трошак	6–18 месеци; средњи трошак.
Показатељи	Број интероперабилних скупова; време ажурирања; покривеност области; број корисника; број одлука које користе платформу.
Заштитне мере / напомена	Јасна правила квалитета, приватности и одговорности; не мешати податке различите скале без упозорења.

D3 Вишехазардни систем раног упозоравања и протоколи деловања

Ризик/проблем	Упозорење без унапред договорених радњи не смањује довољно последице.
Кључне активности	Дефинисати прагове и нивое; повезати мониторинг, прогнозу, процену последица, комуникацију и одговор; израдити матрице „ко ради шта” за сушу, топлоту, интензивне падавине и пожарни ризик; тестирати вежбама; користити више канала.
Носилац и партнери	РХМЗ, покрајински и локални органи, цивилна заштита, здравство, пољопривредне и комуналне службе, медији.
Време и трошак	6–18 месеци; средњи трошак.
Показатељи	Покривеност становништва; време од прогнозе до поруке; проценат порука са јасном радњом; број тестова; одзив циљних група.
Заштитне мере / напомена	Поруке морају бити разумљиве, приступачне и доступне без дигиталних препрека. Четири стуба EW4Алл су знање о ризику, праћење/прогноза, комуникација и спремност за одговор. [14]

A1 Локални водни биланси и планови управљања сушом

Ризик/проблем	Одлуке о води без заједничке слике понуде, потражње, еколошких потреба и будућих сценарија.
Кључне активности	За слив/комунални систем израчунати сезонску понуду и потражњу; укључити јавно снабдевање, пољопривреду, индустрију и екосистеме; дефинисати фазне мере за различите нивое суше; утврдити прагове рестрикције и приоритетне кориснике; годишње ажурирати.
Носилац и партнери	Водопривредне институције и ЈЛС, уз РХМЗ, комунална предузећа, пољопривреду, заштиту природе и кориснике.
Време и трошак	0–12 месеци; низак–средњи трошак.
Показатељи	Усвојен биланс; проценат потрошње обухваћен мерењем; број активираних фазних мера; губици воде; одржан еколошки проток.
Заштитне мере / напомена	Не рачунати сву теоријски расположиву воду као безбедну за захватање; укључити квалитет и еколошке потребе.

A3 Микроретенције и прикупљање атмосферске воде

Ризик/проблем	Брз отицај падавина и недостатак локално доступне воде у сушном периоду.
Кључне активности	Мапирати депресије и безбедне локације; проценити квалитет воде и ризик од поплаве; комбиновати пољске баре, каналске ретенције, кровне резервоаре и обнову влажних станишта; припремити режим одржавања и управљања седиментом.
Носилац и партнери	ЈЛС, водопривреда, пољопривреда, управљачи земљишта и заштићених подручја.
Време и трошак	1–3 године; средњи трошак.
Показатељи	$м^3$ ретенцијског капацитета; површина успореног отицаја; број корисника; смањење вршног отицаја; еколошки показатељи.
Заштитне мере / напомена	Обавезна хидролошка и еколошка провера; избећи погоршање квалитета воде, ширење инвазивних врста и ризик по безбедност.

C1 Климатски прилагођени плодоред, сортимент и рокови сетве

Ризик/проблем	Топлота и дефицит воде у критичним фенофазама, већа варијабилност приноса.
Кључне активности	Тестирати сорте и хибриде различите дужине вегетације; диверсификовати плодоред; повезати сетву и операције са сезонским и краткорочним прогнозама; очувати генетичку разноврсност; објављивати локалне резултате огледа.
Носилац и партнери	Саветодавне и научне институције, семенске куће, задруге и газдинства.
Време и трошак	од наредне сезоне; низак трошак.
Показатељи	број тестираних комбинација; ха диверсификованог плодореда; варијабилност приноса; број корисника савета.
Заштитне мере / напомена	Не заснивати одлуку на једном сценарију или једној сорти; пратити тржиште, болести и потребе за водом.

E1 Седам територијалних радионица и трајни програм обуке

Ризик/проблем	Неравномерно знање и капацитет за примену резултата процене у локалним плановима.
Кључне активности	Спровести по једну радионицу у свакој области; користити локалне мапе и случајеве; вежбати проверу плана, избор мера и израду пројектне картице; успоставити мрежу контакт особа; обезбедити материјале, снимке и менторску подршку.
Носилац и партнери	Покрајински секретаријат и пројектни тим уз ЈЛС, РХМЗ, стручне институције и локалне партнере.
Време и трошак	0–12 месеци; низак трошак.
Показатељи	7 радионица; број и структура учесника; резултат теста пре/после; број завршених локалних картица; ИУКР промена.
Заштитне мере / напомена	Обезбедити практичан рад, доступност, родну и генерацијску заступљеност и подршку мањим општинама.

6.2. Попречни пакети за градове, здравље, природу и инфраструктуру

УРБАНА ТОПЛОТА И ИНТЕНЗИВНЕ ПАДАВИНЕ

мапирање топлотних острва; дрвореди и хлад; пропусне површине; зелени кровови где су изводљиви; ретенција кишнице; расхладни простори; климатски стандарди за јавне објекте; одржавање зеленила прилагођено суши. Национални програм посебно истиче зелене површине, локално урбано планирање адаптације и праћење топлотних острва. [4]

БИОДИВЕРЗИТЕТ И ЗАШТИЋЕНА ПОДРУЧЈА

обнова влажних станишта и еколошких коридора; контрола инвазивних врста; климатска провера планова управљања; праћење кључних врста и услуга екосистема; прилагођавање посетилаца и екотуризма; заштита воде и пожарна превенција. Очувани екосистеми повећавају капацитет прилагођавања и пружају природна решења. [5][7][8]

КРИТИЧНА ИНФРАСТРУКТУРА И ЈАВНЕ УСЛУГЕ

климатска провера путева, мостова, водовода, канализације, енергетике, здравствених и образовних објеката; план континуитета; резервно напајање и вода; превентивно одржавање; стандарди за будуће температуре и падавине; „Буилд Бацк Беттер” после догађаја. [13]

СОЦИЈАЛНА ОТПОРНОСТ И ПРАВЕДНОСТ

регистри подршке уз заштиту података; помоћ при улагању малим газдинствима и сиромашнијим домаћинствима; доступно осигурање; саветовање на терену; укључивање жена, младих, старијих и особа са инвалидитетом; праћење расподеле користи и трошкова.

7. Територијални приоритети за седам управних округа, који одговарају NUTS 3 областима АП Војводине

Профили у наставку служе као почетна оријентација за планирање и радионице. Они се заснивају на рангирању Фазе 2 и морају бити допуњени локалним подацима, мапама критичне инфраструктуре, водним билансима, структурама газдинстава, здравственим показатељима и консултацијама. [3]

RS124 – Севернобанатска област

ВЕОМА ВИСОК ПРИОРИТЕТ

Профил ризика: Релативна и пољопривредна суша; непосредна акција; RPI 3,7; низак капацитет 0,30.

Препоручени пакет: Локални водни биланси и план суше; модернизација и мерење наводњавања; микроретенције; праћење влаге/салинизације; покровни усеви и органска материја; агрометеоролошке поруке; помоћ малим газдинствима; оперативни прагови упозорења.

Резултат у првих 12 месеци: Првих 12 месеци: координациона група, детаљна мапа изложености, најмање две пилот локације и припремљене инвестиционе картице.

RS126 – Средњобанатска област

ВЕОМА ВИСОК ПРИОРИТЕТ

Профил ризика: Највиша учесталост/интензитет у процени; релативна и пољопривредна суша; RPI 3,7; низак капацитет 0,33.

Препоручени пакет: Управљање потражњом и ретенцијом воде; приоритетна инфраструктура; заштита земљишта; диверсификација усева; заштита стоке од топлоте; рани систем упозорења; климатска провера развојних и просторних планова.

Резултат у првих 12 месеци: Првих 12 месеци: усвојени прагови, пилот пакет вода–земљиште–усев и споразум о размени података.

RS122 – Јужнобанатска област

ВИСОК ПРИОРИТЕТ

Профил ризика: Комбинована суша; непосредна акција; RPI 3,3; средњи капацитет 0,35; зависност од кишног режима.

Препоручени пакет: Ефикасно наводњавање и безбедни извори; плодоред и сортимент; заштитни појасеви; урбана топлота; континуитет водоснабдевања; заштита природних подручја и водних екосистема; осигурање и саветовање.

Резултат у првих 12 месеци: Првих 12 месеци: водни биланс, критичне зоне за усеве и здравље, пакет брзих мера и пројектна документација за приоритетне инвестиције.

RS125 – Севернобачка област

ВИСОК ПРИОРИТЕТ

Профил ризика: Комбинована суша; непосредна акција; RPI 3,3; средњи капацитет 0,40; дугорочна изложеност.

Препоручени пакет: Мониторинг земљишта и воде; ретенција и ефикасност; заштита од ветроерозије; прилагођени рокови и сорте; климатски планови за насеља; прекогранична размена знања и података где је корисна.

Резултат у првих 12 месеци: Првих 12 месеци: анализа празнина у локалним плановима, пилот агрометеоролошко саветовање и пакет противерозионих мера.

RS121 – Западнобачка област

СРЕДЊИ ПРИОРИТЕТ

Профил ризика: Пољопривредна суша; више акције потребно; RPI 2,3; значајан капацитет 0,55.

Препоручени пакет: Превенција погоршања; мерење потрошње воде; конзервацијска пољопривреда; праћење влажности; континуитет јавних услуга; демонстрационе парцеле; одржавање постојећих предности.

Резултат у првих 12 месеци: Првих 12 месеци: ажурирана процена, најмање једна демонстрациона локација и план скалирања у случају погоршања сценарија.

RS123 – Јужнобачка област

СРЕДЊИ ПРИОРИТЕТ

Профил ризика: Пољопривредна суша; више акције потребно; RPI 2,3; значајан капацитет 0,68.

Препоручени пакет: Урбана топлота и плаво-зелена инфраструктура; ефикасно управљање водом; климатска провера велике инфраструктуре; заштита здравља; дигиталне услуге и демонстрације; подршка околним руралним подручјима.

Резултат у првих 12 месеци: Првих 12 месеци: план топлоте, стандард климатске провере јавних инвестиција и развој демонстрационог центра знања.

RS127 – Сремска област / Сремски управни округ

НИЗАК РЕЛАТИВНИ ПРИОРИТЕТ / РЕФЕРЕНТНО ПОДРУЧЈЕ
Профил ризика: Пољопривредна суша; праћење; RPI 1,3; висок капацитет 0,75.
Препоручени пакет: Очувати капацитет; документовати добре праксе; пратити топлоту и сушу; штитити шуме, Фрушку гору, воде и еколошке коридоре; спречити пренос ризика развојем и урбанизацијом; размена искустава са приоритетним областима.
Резултат у првих 12 месеци: каталог пракси које се могу пренети и план праћења раних знакова погоршања.

8. Јачање капацитета и програм седам радионица

Пројектна апликација предвиђа седам едукативних радионица, по једну у свакој управној области, ради размене информација између нивоа власти и локалних актера, преноса знања о климатским ризицима и повећања спремности. [1] Радионице морају произвести конкретан локални резултат, а не само пренети информације.

8.1. Компетенције које треба развити

Разумевање ризика	тумачење опасности, изложености, рањивости, капацитета, сценарија и неизвесности
Рад са подацима	коришћење карата, показатеља, локалних евиденција и документовање квалитета података
Интеграција у планове	претварање налаза у циљ, меру, буџет, одговорност и показатељ
Припрема пројеката	опис проблема, логика интервенције, студија изводљивости, трошак животног циклуса и финансирање
Комуникација ризика	јасна порука, сегментација публике, упозорење са радњом, рад са медијима
Праћење и учење	почетно стање, показатељи исхода, евалуација, ревизија и размена добрих пракси

8.2. Предложени једнодневни програм радионице

Време	Садржај
11:00–11:30	Регистрација учесника
11:30–11:40	Поздравна реч представника Покрајинског секретаријата за урбанизам и заштиту животне средине
11:40–12:00	Представљање програма CLIMAAX и пројекта CLIMACHANGE
12:00–12:30	Представљање резултата прве и друге фазе пројекта, са посебним освртом на процену климатских ризика у АП Војводини
12:30–13:00	Климатски ризици, ванредне ситуације и постојећи механизми одговора
13:00–13:30	Представљање Гепортала и могућности коришћења просторних података у процени и управљању ризицима
13:30–14:00	Отворена дискусија са учесницима и спровођење анкете
14:00–15:00	Послужење и неформална размена искустава

У зависности од локације и доступности стручних предавача, програм може бити допуњен посебним излагањима о осмотреним климатским променама, пројекцијама будуће климе, процени ризика, релевантним пројектима и могућностима унапређења регионалних и локалних планова.

Оквир програма заснива се на планираним темама семинара: представљање пројекта и његових резултата, климатски ризици и ванредне ситуације, Гепортал, дискусија и анкета.

8.3. Очекивани резултати едукативних семинара

Очекује се да ће организовани семинари допринети:

- бољем разумевању климатских ризика и рањивости на територији АП Војводине;
- упознавању учесника са резултатима прве и друге фазе пројекта CLIMACHANGE;
- унапређењу знања о могућностима коришћења климатских и просторних података у планирању;
- бољем повезивању процене климатских ризика са системом смањења ризика од катастрофа и управљања ванредним ситуацијама;
- размени искустава између покрајинских институција, локалних самоуправа, стручних служби и других заинтересованих страна;
- прикупљању мишљења учесника о постојећим ризицима, капацитетима, потребама и могућностима за унапређење локалних и регионалних планова;
- идентификовању тема за даље јачање капацитета и стручну подршку локалним самоуправама;
- повећању видљивости пројекта и подизању свести о потреби правовременог прилагођавања на климатске промене.

Анкета планирана на крају сваког семинара користиће се као допунски инструмент за сагледавање ставова, искустава и потреба учесника. Њени резултати послужиће за усмеравање даљих пројектних активности и будуће унапређење препорука за управљање климатским ризицима.

8.4. Очекивани излази сваке радионице

У складу са планираним програмом, очекује се да ће сваки едукативни семинар омогућити:

- евидентирање броја и структуре учесника на основу пописних листа;
- представљање програма CLIMAAX, пројекта CLIMACHANGE и резултата прве и друге фазе пројекта;
- упознавање учесника са идентификованим климатским ризицима и могућностима коришћења просторних података и Геопортала;
- размену искустава представника покрајинских институција, локалних самоуправа, стручних служби и других заинтересованих страна;
- прикупљање мишљења учесника о климатским ризицима, постојећим капацитетима, препрекама и потребама за подршком путем анкете;
- евидентирање предлога и запажања из отворене дискусије, уколико буду документовани;
- идентификовање тема које захтевају додатно информисање, обуку или институционалну подршку;
- допринос подизању свести и бољем разумевању значаја прилагођавања на климатске промене на регионалном и локалном нивоу.

Остварени излази семинара биће документовани пописним листама учесника, попуњеним анкетним упитницима, програмима догађаја и другим расположивим пратећим материјалима.

МОДЕЛ „ОБУКА + МЕНТОРСТВО”

Једнодневна радионица није довољна за промену праксе. Свакој области треба обезбедити најмање две накнадне онлајн консултације и једну заједничку сесију размене искустава након шест месеци.

9. Комуникација, едукативни материјали и онлајн кампања

Комуникација је мера управљања ризиком само када примаоцу омогућава правовремену и конкретну радњу. Опште поруке о климатским променама треба повезати са локалним ризиком, сезоном, сектором и одлуком. Систем мора комбиновати веб, друштвене мреже, локалне медије, SMS/апликације, саветодавне службе, школе и комуникацију лицем у лице.

9.1. Матрица циљних група и порука

Циљна група	Основна порука	Најбољи формат
Доносиоци одлука	Ризик утиче на буџет, развој и континуитет услуга.	Кратки полицу бриеф, мапа, дасхбоард, буџетска препорука.
Локални службеници и јавна предузећа	Како уградити ризик у план, пројекат и оперативни протокол.	Приручник, обука, контролна листа, техничка радионица.
Пољопривредници и задруге	Шта урадити ове седмице/сезоне да се смањи ризик.	Агрометеоролошка порука, демонстрација, видео, саветодавац.
Здравство, социјалне службе и послодавци	Кога заштитити и када активирати план топлоте.	Протокол, листа контаката, упозорење, плакат.
Грађани	Који ризик долази, шта значи и које радње штите домаћинство.	Кратка порука, инфографик, локални медиј, догађај.
Деца и млади	Како се локална клима мења и како учествовати.	Школски пакет, експеримент, квиз, грађанска наука.
Медији	Тачни подаци, контекст, извор и препоручена радња.	Медијски пакет, контакт стручњака, графика, ФАQ.

9.2. Предлог онлајн кампање

Тема	Садржај
Разумевање ризика	Шта су релативна и пољопривредна суша; како читати мапу; шта значи сценарио.
Вода	Водна ефикасност, ретенција, одговорно захватање и план суше.
Земљиште и усеви	Покровни усеви, органска материја, плодоред, рокови и агрометеоролошки савети.
Топлота и здравље	Рањиве групе, рад на отвореном, расхладни простори и урбана сенка.
Локална решења	Примери из седам области, кратки интервјуи и визуелне картице мера.
Планови и	Како предлог постаје пројекат; позив локалним актерима да доставе идеје.

финансирање	
Резултати и наредни кораци	Шта је урађено, ко је одговоран, где пратити податке и како се укључити.

9.3. Стандард једне објаве

1. Наслов који описује локални проблем без сензационализма.
2. Један проверљив податак или мапа са јасним извором и датумом.
3. Објашњење шта податак значи за конкретну циљну групу.
4. Једна до три радње које се могу предузети одмах или у наредном периоду.
5. Контакт или место за додатне информације.
6. Приступачан визуелни формат, текстуални опис слике и верзија прилагођена мобилном телефону.

ПРИМЕР ПОРУКЕ ЗА СУШУ

„Влажност земљишта и водни биланс указују на растући стрес за усеве у наредном периоду. Проверите стварну влагу на парцели пре наводњавања, приоритизујте критичне фенофазе и пратите препоруке саветодавне службе. Не повећавајте захватање без провере дозвољеног и одрживог извора."

ПРИМЕР ПОРУКЕ ЗА ТОПЛОТУ

„Очекује се период високог топлотног оптерећења. Старије особе, деца, хронични болесници и радници на отвореном имају већи ризик. Обезбедите воду, хлад и чешће паузе, проверите особе које живе саме и пратите упутства здравствених служби."

10. Праћење, евалуација и учење

Праћење мора разликовати да ли је активност завршена, да ли је произвела очекивани исход и да ли се ризик смањио. Сам број обука, посађених стабала или километара цеви није довољан ако се не прати функционалност, одржавање, доступност и утицај на рањиве групе. Climate-ADAPT наглашава да су мониторинг, евалуација и ревизија интегрални део итеративног циклуса адаптације. [10]



Слика 9. Ланац резултата за праћење адаптације.

10.1. Предложени кључни показатељи

Домен	Пример показатеља	Учесталост
Управљање	ИУКР; број планова са именованим власницима ризика; учесталост координационих састанака	годишње
Процена и подаци	број области са ажурираним показатељима; време ажурирања; покривеност подацима	сезонски/годишње
Планови	удео прегледаних и измењених релевантних планова; број мера са буџетом и носиоцем	годишње
Вода	губици у мрежи; $м^3$/т производа; ретенцијски капацитет; удео мерених захватања	месечно/сезонски
Земљиште	органска материја; инфилтрација; ха под заштитним праксама; ерозија/салинизација	годишње/вишегодишње
Пољопривреда	варијабилност приноса; ха са прилагођеним праксама; коришћење савета; осигурање	сезонски/годишње
Здравље	активације плана топлоте; обухват рањивих особа; исходи повезани с топлотом	током сезоне
Упозорење	време издавања; домет поруке; проценат порука са радњом; број вежби	по догађају
Комуникација	досег, ангажовање, преузимање материјала, промена знања и понашања	месечно/кампања
Праведност	учешће и корист по полу, доби, локацији, величини газдинства и рањивости	годишње
Финансије	буџет адаптације; превентивни/део за опоравак; левераге	годишње

	екстерних средстава	
Исход ризика	прекиди услуга, штете, избегнути губици, време опоравка, резидуални ризик	по догађају/годишње

10.2. Евалуациона питања

- Да ли су приоритетне области и рањиве групе добиле пропорционално већу подршку?
- Да ли се показатељи ризика, прекида услуга или штете мењају у жељеном правцу?
- Да ли су мере функционалне током екстремног догађаја, а не само формално завршене?
- Које претпоставке нису биле тачне и које нежељене последице су се појавиле?
- Да ли су трошкови одржавања, особље и подаци обезбеђени?
- Коју меру треба наставити, проширити, изменити или обуставити?
- Како налазе претворити у измену плана, буџета, стандарда и наредног циклуса процене?

ГОДИШЊИ ЈАВНИ ПРЕГЛЕД

Препоручује се кратак годишњи „Преглед климатског ризика и адаптације АП Војводине”: стање опасности и последица, напредак показатеља, спроведене мере, расположиво финансирање, празнине и одлуке за наредну годину.

11. Финансирање и припрема инвестиционог портфеља

Адаптација се најуспешније финансира комбиновањем редовних буџета, секторских подстицаја, јавних инвестиција, европских и међународних фондова, кредита, осигурања и приватног учешћа. Извор се бира према врсти мере, зрелости пројекта, кориснику, географском обухвату и очекиваним приходима. Доступност појединачних позива и услови прихватљивости мењају се и морају се проверити пре пријаве.

Покрајински и локални буџети	координација, планови, подаци, обуке, одржавање, мале брзе мере и суфинансирање
Национални програми и подстицаји	пољопривреда, воде, заштита животне средине, здравље, инфраструктура, цивилна заштита
ЕУ претприступна и територијална сарадња	ИПА, ИПАРД, Интеррег и други инструменти за инфраструктуру, рурални развој, сарадњу и капацитете
Хоризон Европе / ЕУ Миссион / ЛИФЕ	демонстрације, иновације, климатске услуге, природна решења, управљање и репликација
Међународне финансијске институције	ЕИБ, ЕБРД, Светска банка и развојне банке за веће инвестиције и техничку помоћ
Климатски и еколошки фондови	ГЦФ, ГЕФ и донаторски програми, обично кроз акредитоване/националне партнере
Приватни сектор и осигурање	улагања корисника, уговори о учинку, осигурање, ланци вредности и јавно-приватни аранжмани уз заштиту јавног интереса

11.1. Минимална пројектна картица за финансирање

- Проблем и доказ ризика; локација и циљна група;
- Почетно стање и сценарио без интервенције;
- Циљ и мерљиви исходи отпорности;
- Опис решења и алтернативних опција;
- Носилац, власништво, партнери и дозволе;
- Капитални и оперативни трошак, одржавање и животни век;
- Користи, избегнути губици и додатне користи;
- Утицај на емисије, природу, полове и рањиве групе;
- Ризици пројекта, адаптација и мере ублажавања;
- План набавке, спровођења и показатељи;
- Извор финансирања, суфинансирање и финансијска одрживост.

11.2. Буџетско означавање адаптације

За сваку буџетску активност препоручује се ознака: (А) примарни циљ адаптација; (Б) значајан допринос адаптацији; (Ц) омогућавајућа активност; (Н) без релевантног доприноса. Уз ознаку се наводи климатски ризик, циљна група, област, показатељ и очекивани резултат. Овим се не замењује финансијска контрола, већ омогућава преглед колико се улаже превентивно и где постоје празнине.

ПРАВИЛО ЗА ВЕЛИКЕ ИНВЕСТИЦИЈЕ

Пре одобрења значајне јавне инвестиције спровести климатску проверу: релевантни хазард и сценарио, критична граница пројектовања, осетљивост током животног века, алтернативе, резидуални ризик, план континуитета и трошак одржавања.

12. Мапа пута 2026–2030.



Слика 10. Предложена мапа пута за прелазак са процене ризика на спровођење и учење.

До краја 2026.	координациони механизам; седам радионица; ИУКР почетно мерење; преглед приоритетних планова; каталог података; комуникациона кампања; најмање једна пројектна картица по области
Током 2027.	усаглашени прагови и протоколи за сушу/топлоту; пилот пакети у RS124, RS126, RS122 и RS125; планови заштите здравља од врућине; јавни годишњи преглед
2028.	евалуација пилота; скалирање успешних мера; климатска провера већих инвестиција; интеграција у буџете и секторске планове; проширење осигурања и саветодавних услуга
2029.	ажурирана регионална процена ризика; процена каскадних ризика; консолидован инвестициони портфељ; размена и репликација пракси између области
2030.	независна евалуација учинка; ревизија приоритета и циљева; документовање избегнутих губитака и резидуалног ризика; план наредног циклуса

12.1. Расподела одговорности – сажета RACI матрица

Задатак	Одговоран / полаже рачун	Консултује се	Информише се
Регионална процена и показатељи	Покрајински секретаријат / РХМЗ	ЈЛС, стручне институције, сектори	јавност и привреда
Локална анализа планова	ЈЛС	Покрајина, локалне службе, стручњаци	локални актери и грађани
Водне и пољопривредне мере	надлежни водни/пољопривредни органи и корисници	ЈЛС, РХМЗ, саветодавне службе	заједнице и заштита природе
Упозорење и спремност	РХМЗ и надлежни органи заштите/спасавања	здравство, ЈЛС, медији, комуналне службе	становништво и привреда
Здравље од врућине	здравствени органи и ЈЛС	социјалне службе, послодавци, школе	рањиве групе и јавност
Праћење и годишњи извештај	Покрајински координациони механизам	сви носиоци мера	јавност, скупштине и финансијери

КРАЈЊИ ИСХОД

До 2030. године покрајински и локални системи треба да имају ажуриране процене ризика, јасно одговорне институције, финансиране и праћене мере, функционално рано упозоравање, припремљене пројекте и доказ да се рањивост приоритетних области и група смањује.

Прилог А. Брза контролна листа за преглед локалног плана

Питање	Да	Делимично	Не / доказ који недостаје
Да ли документ наводи релевантне климатске опасности и њихове изворе?	☐	☐	☐ _____
Да ли користи будуће климатске сценарије и најмање два временска хоризонта?	☐	☐	☐ _____
Да ли мапира изложеност људи, усева, воде, природе, инфраструктуре и услуга?	☐	☐	☐ _____
Да ли препознаје рањиве групе и просторне неједнакости?	☐	☐	☐ _____
Да ли анализира каскадне и међусекторске ризике?	☐	☐	☐ _____
Да ли су утврђени власници ризика и одговорности?	☐	☐	☐ _____
Да ли су циљеви отпорности мерљиви?	☐	☐	☐ _____
Да ли мере имају рок, носиоца, буџет, извор и показатељ?	☐	☐	☐ _____
Да ли су мере проверене на маладаптацију, емисије и утицај на природу?	☐	☐	☐ _____
Да ли постоји протокол упозорења и деловања?	☐	☐	☐ _____
Да ли је обезбеђено учешће јавности и рањивих група?	☐	☐	☐ _____
Да ли постоји почетно стање, циљ и распоред извештавања?	☐	☐	☐ _____
Да ли су дефинисани окидачи за ревизију плана?	☐	☐	☐ _____

Да ли су резултати јавно доступни у разумљивом облику?	☐	☐	☐ _____

Прилог Б. Образац пројектне картице мере

Назив и код мере	
Локација и територијални обухват	
Климатски ризик и доказ	
Циљне групе и корисници	
Циљ и очекивани исход	
Опис активности и алтернатива	
Носилац, партнери и власништво	
Дозволе, услови и техничка документација	
Рок и фазе	
Капитални трошак / оперативни трошак	
Извор финансирања и суфинансирање	
Показатељ, почетно стање и циљ	
Ризици спровођења и маладаптација	
Утицај на рањиве групе, природу и емисије	
Одржавање и план након завршетка	

Прилог Ц. Образац за ИУКР оцену

Домен	Почетна оцена 0–4	Оцена након интервенције	Промена	Доказ / напомена
Управљање и одговорности				
Подаци и процена ризика				
Планирање и стандарди				
Финансирање				
Спровођење и одржавање				
Упозорење и спремност				
Учешће и праведност				
Праћење, евалуација и учење				

Почетни ИУКР: _____ / 32 = _____ % Завршни ИУКР: _____ / 32 = _____ % Побољшање: _____ процентних поена

Прилог Д. Предложени скуп података за локалну процену

Клима	падавине, температура, топлотни таласи, сушни дани, SPI/SPEI, ET_0, екстремне падавине
Вода	протоци/нивои, подземне воде, захватање, губици, квалитет, акумулације и еколошке потребе
Земљиште	тип, органска материја, влага, инфилтрација, ерозија, салинизација, сабијање
Пољопривреда	културе, приноси, наводњавање, стока, величина газдинства, осигурање и економска изложеност
Становништво и здравље	старост, инвалидитет, социјална рањивост, рад на отвореном, здравствени исходи и доступност услуга
Природа	заштићена подручја, станишта, коридори, влажна станишта, пожарни ризик и инвазивне врсте
Инфраструктура и услуге	путеви, мостови, водовод, канализација, енергија, здравство, школе, склоништа и критичне тачке
Штете и догађаји	локација, датум, хазард, директна/индиректна штета, прекиди, погођене групе и време опоравка
Мере и финансије	пројекти, трошкови, извори, статус, одржавање, показатељи и евалуација

Прилог Е. Речник основних појмова

Адаптација	процес прилагођавања стварној или очекиваној клими и њеним последицама ради смањења штете или коришћења користи
Климатска опасност	физички догађај или тренд који може проузроковати губитак или штету
Изложеност	присуство људи, добара, екосистема, инфраструктуре или активности на местима која могу бити погођена
Рањивост	склоност система да буде неповољно погођен, укључујући осетљивост и недостатак капацитета
Капацитет отпорности	способност да се предвиди, припреми, одговори, прилагоди и опорави уз очување кључних функција
Резидуални ризик	ризик који остаје након спровођења мера
Маладаптација / неприлагођеност	мера која ненамерно повећава ризик, неједнакост, емисије или деградацију природе сада или у будућности
Природна решења	заштита, одрживо управљање и обнова екосистема ради решавања друштвених изазова уз користи за људе и биодиверзитет
Рано упозоравање	повезан систем знања о ризику, праћења/прогнозе, комуникације и спремности за одговор
RPI	композитни индекс приоритета ризика коришћен у Фази 2 пројекта CLIMACHANGE
ИУКР	пројектни индекс за мерење зрелости и побољшања управљања климатским ризиком

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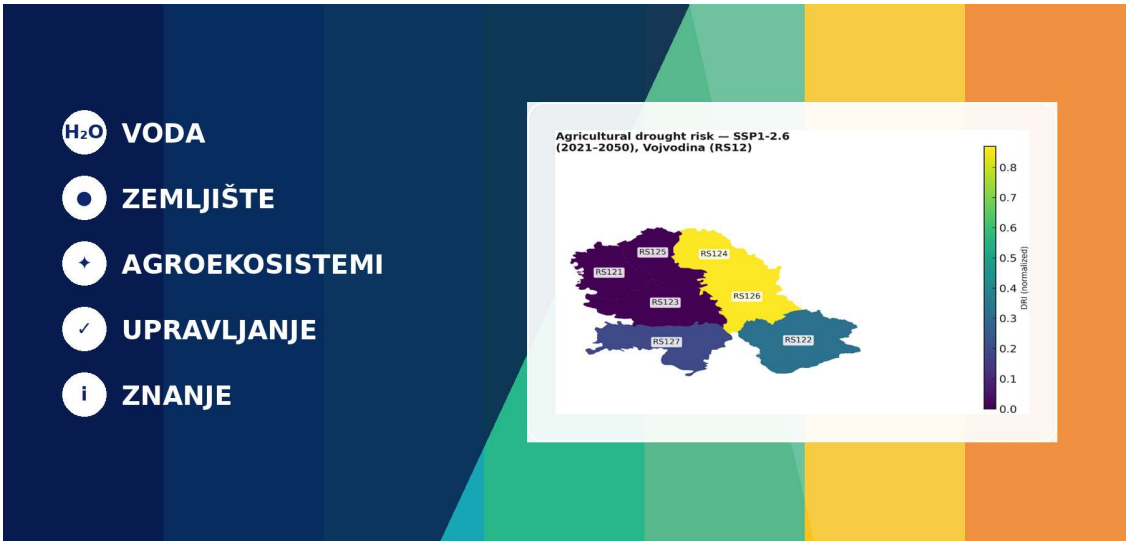
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VODIČ ZA UPRAVLJANJE KLIMATSKIM RIZICIMA I PRILAGOĐAVANJE NA KLIMATSKE PROMENE U AP VOJVODINI

Najbolje prakse i predložene mere adaptacije na lokalnom i regionalnom nivou

CLIMACHANGE – Adapt on clime change in APV | Phase 3



Republika Srbija / Autonomna Pokrajina Vojvodina
Verzija 1.0 | januar 2026.

Funded by
the European Union

Informacije o dokumentu

Naziv dokumenta	Vodič za upravljanje klimatskim rizicima i prilagođavanje na klimatske promene u AP Vojvodini
Projekat	Adapt on clime change in APV (CLIMACHANGE)
Program	CLIMAAX / Horizon Europe, HORIZON-MISS-2021-CLIMA-02-01
Vodeća institucija	Pokrajinski sekretarijat za urbanizam i zaštitu životne sredine
Teritorijalni obuhvat	AP Vojvodina – sedam upravnih oblasti (NUTS 3)
Autorski tim	Sanja Mrazovac Kurilić, PhD in Environmental Protection Tatjana Đurić, M.Sc. in Agriculture Teodora Subotić, economist and project advisor Predrag Ilić, PhD in interdisciplinary environmental engineering
Priroda dokumenta	Javni vodič – praktične smernice, portfelj mera i alati za lokalne i pokrajinske organe
Verzija i datum	1.0 | januar 2026.

VAŽNA NAPOMENA

Vodič pretvara rezultate klimatske procene rizika u operativne korake. Karte i rangiranje oblasti zasnivaju se na CLIMACHANGE proceni iz Phase 2. Predložene mere nisu zamena za tehničku dokumentaciju, postupke procene uticaja, vodne uslove, urbanističke procedure, javne nabavke ili druge zakonske obaveze. Pre ulaganja, svaka mera mora biti proverena na konkretnoj lokaciji, uključujući rizik od neprilagođenosti (maladaptacije).

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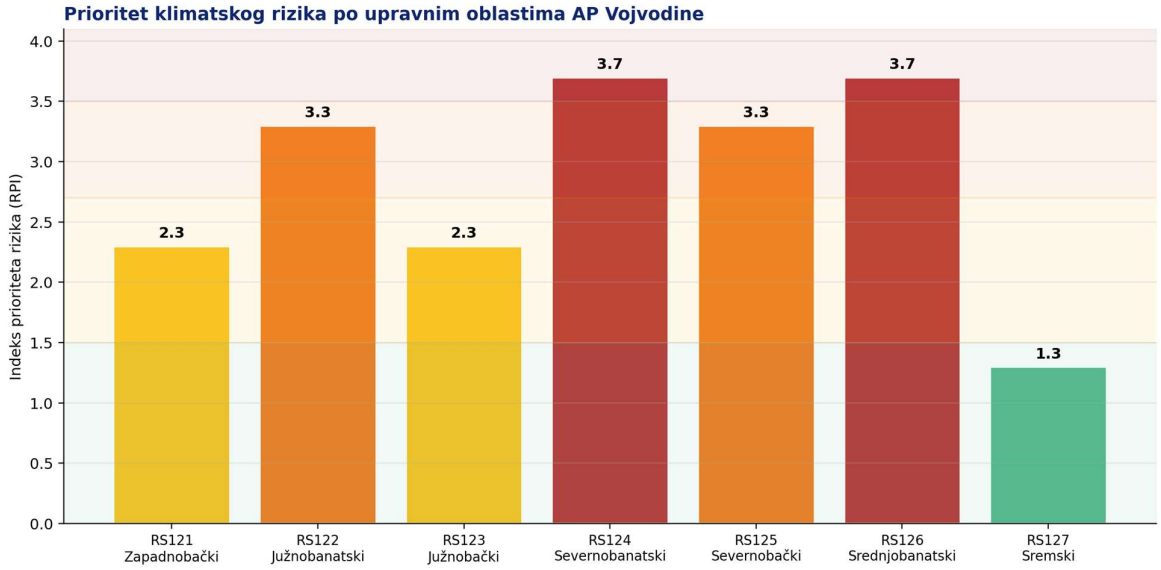
Izvršni sažetak

AP Vojvodina je izrazito izložena klimatskim rizicima koji se međusobno pojačavaju: relativnoj i poljoprivrednoj suši, toplotnim talasima, promenljivoj raspodeli padavina, intenzivnim padavinama i poplavama, degradaciji zemljišta, pritiscima na vodne resurse, zdravlje, biodiverzitet i infrastrukturu. Nacionalni Program prilagođavanja ukazuje da se Srbija zagreva brže od globalnog proseka i da su suše i visoke temperature odgovorne za najveći deo procenjenih šteta od klimatskih i vremenskih ekstrema u periodu 2000–2020. [4]

CLIMACHANGE procena rizika za svih sedam upravnih oblasti AP Vojvodine pokazala je da su Severnobanatska (RS124) i Srednjobanatska oblast (RS126) u kategoriji veoma visokog prioriteta, Južnobanatska (RS122) i Severnobačka (RS125) u visokom prioritetu, Zapadnobačka (RS121) i Južnobačka (RS123) u srednjem, dok Sremska oblast (RS127) ima nizak relativni prioritet i može da posluži kao referentno područje za pojedine prakse otpornosti. [3]

ŠTA OVAJ VODIČ DONOSI

Jedinstven postupak za proveru i unapređenje postojećih planova; portfelj od 30 praktičnih mera; detaljne prioritetne mere za vodu, zemljište, agroekosisteme, institucije i komunikaciju; preporuke za svih sedam oblasti; program obuka i kampanje; pokazatelje za praćenje napretka; obrazac za merenje poboljšanja upravljanja rizikom.



Izvor: CLIMACHANGE, Deliverable Phase 2, Tabela 2-19. RPI je kompozitni indeks ozbiljnosti, hitnosti i kapaciteta otpornosti.

Slika 1. Rangiranje upravnih oblasti prema Indeksu prioriteta rizika (RPI) iz CLIMACHANGE Phase 2.

Deset odluka koje ne treba odlagati

1. Uspostaviti stalni Pokrajinski koordinacioni mehanizam za klimatske rizike sa jasnim vlasnicima rizika, odgovornostima i godišnjim programom rada.
2. Uključiti rezultate CLIMAAX procene, scenarije i mape u pokrajinske i lokalne razvojne, prostorne, urbanističke, vodne, poljoprivredne, zdravstvene i planove zaštite i spasavanja.
3. Definisati operativne klase i pragove za sušu, toplotu i povezane posledice, uz transparentan protokol upozorenja i preporučenih radnji.
4. Prioritetno razvijati retenciju vode, efikasno navodnjavanje i upravljanje potražnjom u RS124, RS126, RS122 i RS125, uz proveru održivosti zahvatanja vode.
5. Uspostaviti program zaštite zemljišta i povećanja organske materije, sa demonstracionim parcelama i savetodavnom podrškom.

6. Povezati agrometeorološke informacije sa preporukama koje poljoprivrednik može odmah da primeni.
7. Izraditi lokalne planove zaštite zdravlja od vrućine i obezbediti podršku starijima, deci, radnicima na otvorenom i drugim ranjivim grupama.
8. Uvesti klimatsku proveru svih većih javnih investicija i budžetsko označavanje rashoda za adaptaciju.
9. Sprovesti sedam teritorijalnih radionica i trajni program obuke lokalnih službenika, savetodavaca, komunalnih sistema, civilne zaštite i drugih nosilaca.
10. Meriti napredak kroz zajednički sistem pokazatelja, javni godišnji pregled i periodično ažuriranje procene rizika.

1. Svrha, obuhvat i način korišćenja vodiča

Vodič je izrađen kao operativni proizvod treće faze projekta CLIMACHANGE. Njegova svrha je da rezultate procene klimatskog rizika pretvori u odluke koje se mogu planirati, finansirati, sprovesti i meriti. U skladu sa projektnom aplikacijom, dokument podržava analizu postojećih procedura i strategija, identifikaciju potrebe za njihovim prilagođavanjem, jačanje kapaciteta, podizanje svesti i širenje relevantnih mera u ranjivim lokalitetima. [1]

1.1. Kome je vodič namenjen

- pokrajinskim sekretarijatima, zavodima i javnim preduzećima;
- gradovima i opštinama, naročito timovima za planiranje, urbanizam, životnu sredinu, poljoprivredu, lokalni ekonomski razvoj i vanredne situacije;
- vodoprivrednim, komunalnim, zdravstvenim i socijalnim službama;
- poljoprivrednim savetodavnim službama, zadrugama, udruženjima i gazdinstvima;
- upravljačima zaštićenih područja, stručnim i naučnim institucijama;
- organizacijama civilnog društva, školama, medijima, privredi i građanima.

1.2. Kako koristiti dokument

1. Početi od profila rizika i odrediti kojoj kategoriji pripada oblast ili lokalna samouprava.
2. Popuniti brzu proveru postojećih planova iz Priloga A i utvrditi najveće praznine.
3. Iz portfelja mera odabrati kombinaciju strukturnih, prirodnih, upravljačkih, finansijskih i obrazovnih rešenja.
4. Proceniti mere kroz kriterijume koristi, troška, hitnosti, izvodljivosti, jednakosti, emisija i rizika od neprilagođenosti.
5. Pretvoriti izabrane mere u projektne kartice sa odgovornostima, budžetom, rokovima i pokazateljima.
6. Sprovoditi, pratiti rezultate i najmanje jednom godišnje proveriti da li se promenio rizik, podatak, propis, finansiranje ili prioritet.



Slika 2. Lanac klimatskog rizika korišćen za povezivanje opasnosti, izloženosti, ranjivosti i posledica.

PRINCIP „NEMA ŽALJENJA"

Prednost treba dati merama koje imaju korist i u sadašnjoj klimi, koje su fleksibilne, reverzibilne ili se mogu fazno proširivati. Primeri su smanjenje gubitaka vode, poboljšanje strukture zemljišta, rano upozoravanje, zasenjivanje javnih prostora, zaštita ranjivih grupa i bolja koordinacija.

1.3. Vodeći principi

Princip	Praktično značenje
Zasnovanost na dokazima	Kombinovati CLIMAAX rezultate, lokalne podatke, stručna znanja i iskustvo stanovništva.
Budući rizik	Ne planirati samo prema prošlim ekstremima; koristiti najmanje jedan niži i jedan viši scenario emisija.
Pravednost	Identifikovati ko je najizloženiji, ko ima najmanje sredstava za prilagođavanje i ko može nenamerno snositi troškove mere.
Višesektorski pristup	Voda, poljoprivreda, zdravlje, priroda, infrastruktura i razvoj moraju se planirati povezano.
Prirodna rešenja	Čuvati i obnavljati ekosisteme kada mogu bezbedno i efikasno smanjiti rizik.
Izbegavanje neprilagođenosti	Ne prebacivati rizik na druge lokacije, grupe, sektore ili buduće generacije i ne povećavati emisije bez opravdanja.
Iterativnost	Plan je živi dokument koji se menja sa novim podacima i rezultatima praćenja.

2. Profil klimatskog rizika AP Vojvodine

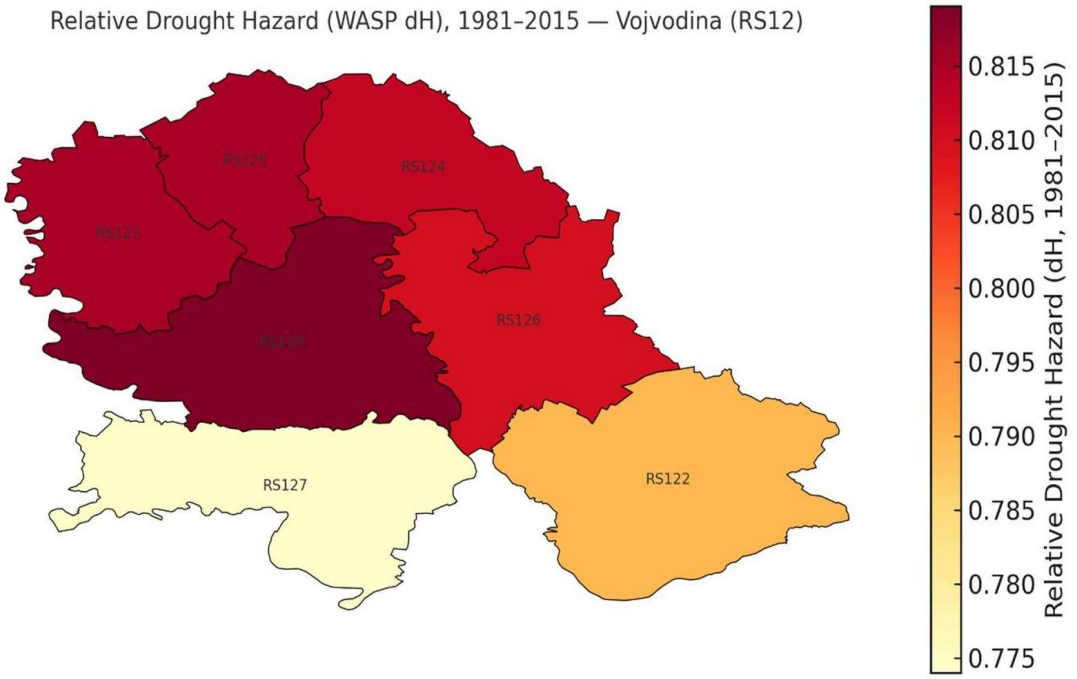
AP Vojvodina (NUTS 2: RS12) obuhvata približno 21.500 km^2 i sedam NUTS 3 upravnih oblasti: Zapadnobačku (RS121), Južnobanatsku (RS122), Južnobačku (RS123), Severnobanatsku (RS124), Severnobačku (RS125), Srednjobanatsku (RS126) i Sremsku (RS127). Poljoprivreda, naročito proizvodnja pšenice i kukuruza, izrazito je zavisna od raspoloživosti vode i temperature tokom vegetacije. [3]

2.1. Ključne opasnosti i povezani rizici

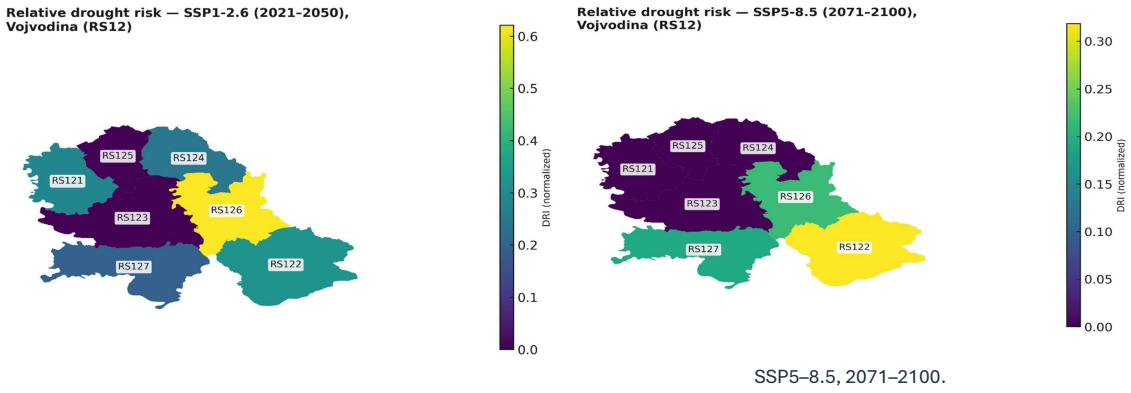
Opasnost	Glavni mehanizam uticaja
Relativna i meteorološka suša	deficit padavina, duži sušni periodi i povećana evapotranspiracija
Poljoprivredna suša	nedovoljna vlažnost zemljišta i vodni bilans za useve tokom kritičnih fenofaza
Toplotni talasi	zdravstveni stres, veće potrebe za vodom i energijom, oštećenja useva i stoke
Intenzivne padavine i bujično/pluvijalno plavljenje	lokalno plavljenje, erozija, oštećenje infrastrukture i useva
Hidrološki i ekološki stres	pritisak na površinske i podzemne vode, močvare, kanalske sisteme i biodiverzitet
Kaskadni rizici	kombinacije toplote, suše, požara, prekida snabdevanja, rasta cena hrane i socijalnih posledica

2.2. Rezultati CLIMACHANGE procene

Phase 2 je prilagodila CLIMAAX metodologiju lokalnom kontekstu, koristeći WASP/dH i P–ET_0 kao primarne pokazatelje relativne i poljoprivredne suše, dok su SPI i SPEI korišćeni za kontekstualnu provjeru rezultata kroz dostupne podatke i biltene RHMZ-a. Procena je povezala pokazatelje opasnosti sa podacima o izloženosti, ranjivosti i kapacitetima, kao i sa budućim scenarijima SSP1–2.6 i SSP5–8.5. [3]



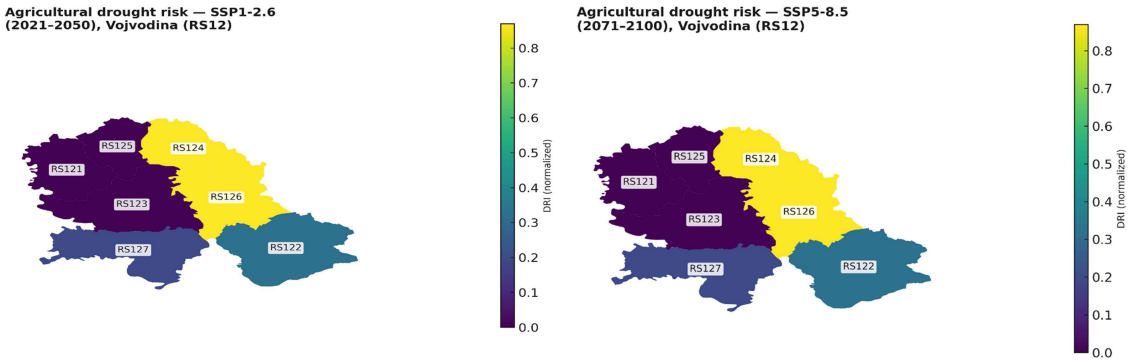
Slika 3. Relativna opasnost od suše u referentnom periodu 1981–2015. (izvor: CLIMACHANGE Phase 2).



SSP1–2.6, 2021–2050.

SSP5–8.5, 2071–2100.

Slika 4. Relativna opasnost od suše u budućim scenarijima. Karte prikazuju prostorne razlike u okviru korišćenih scenarija i ne predstavljaju prognozu štete za pojedinačnu parcelu.



Poljoprivredni rizik, SSP1–2.6

Poljoprivredni rizik, SSP5–8.5

Slika 5. Uporedni prikaz poljoprivrednog rizika od suše po oblastima (izvor: CLIMACHANGE Phase 2).

2.3. Prioriteti po upravnim oblastima

Oblast	Prioritetni profil rizika	Hitnost	Kapacitet	RPI	Prioritet
RS121 – Zapadnobačka	Relativna i poljoprivredna suša	Više akcije potrebno	0,55	2,3	**Srednji**
RS122 – Južnobanatska	Relativna i poljoprivredna suša	Neposredna akcija	0,35	3,3	**Visok**
RS123 – Južnobačka	Relativna i poljoprivredna suša	Više akcije potrebno	0,68	2,3	**Srednji**
RS124 – Severnobanatska	mRelativna i poljoprivredna suša	Neposredna akcija	0,30	3,7	**Veoma visok**
RS125 – Severnobačka	Relativna i poljoprivredna suša	Neposredna akcija	0,40	3,3	**Visok**
RS126 – Srednjobanatska	Relativna i poljoprivredna suša	Neposredna akcija	0,33	3,7	**Veoma visok**
RS127 – Sremska	Relativna i poljoprivredna suša	Praćenje	0,75	1,3	**Nizak**

Napomena: kapacitet je kompozitna ocena finansijskih/institucionalnih, prirodnih i ljudskih/socijalnih sposobnosti; viša vrednost znači veći kapacitet. RPI je relativni indeks prioriteta iz Phase 2.

2.4. Ograničenja i pravilno tumačenje

- Procena je regionalna (NUTS 3) i ne zamenjuje procenu za parcelu, naselje, objekat ili konkretnu investiciju.
- Različiti skupovi podataka imaju različitu prostornu i vremensku rezoluciju; dostupnost detaljnih podataka o zemljištu, navodnjavanju, gazdinstvima i društvenoj ranjivosti ostaje ograničenje.
- Scenario nije prognoza. On prikazuje moguću putanju pod određenim pretpostavkama i služi za proveru robusnosti odluka.
- Klimatski rizik se menja sa izloženošću, korišćenjem zemljišta, demografijom, cenama, infrastrukturom i institucijama; zato procenu treba periodično ažurirati.
- Rangiranje ne znači da oblasti nižeg prioriteta nemaju lokalne „vruće tačke” niti da se u njima mogu odlagati sve mere.

3. Sadašnji sistem upravljanja rizikom: postupci, snage i praznine

Upravljanje klimatskim rizikom u AP Vojvodini ne počinje od nule. Postoje sistemi meteorološkog i hidrološkog osmatranja, procene rizika od katastrofa, planovi zaštite i spasavanja, vodna, poljoprivredna, prostorna i urbanistička dokumenta, lokalni planovi razvoja, instrumenti osiguranja, savetodavne službe, naučne institucije i programi finansijske podrške. Problem nije samo odsustvo instrumenata, već njihova fragmentacija, neravnomerna teritorijalna pokrivenost, reaktivno finansiranje i nedovoljno korišćenje budućih klimatskih scenarija. [3][4][5]

3.1. Tipičan postojeći tok odlučivanja

1 Praćenje i upozorenje	RHMZ, vodoprivredne i druge službe prate opasnosti; informacije se prosleđuju institucijama i javnosti.
2 Procena rizika	Organi i jedinice lokalne samouprave procenjuju rizike i scenarije u okviru propisanih postupaka i sektorskih analiza.
3 Planiranje	Rizici se ugrađuju u razvojne, prostorne, urbanističke, vodne, poljoprivredne, zdravstvene i planove zaštite i spasavanja – različitom dubinom.
4 Budžetiranje i projekti	Mere se finansiraju iz redovnih budžeta, transfera, podsticaja, fondova, donacija, kredita i privatnih ulaganja.
5 Odgovor i oporavak	Službe reaguju tokom događaja; naknadno se procenjuju štete i potrebe.
6 Praćenje učinka	Praćenje je često usmereno na utrošak i završene aktivnosti, a ređe na promenu ranjivosti i izbegnute gubitke.

3.2. Glavne snage

- stručni kapacitet RHMZ, univerziteta, instituta i pokrajinskih institucija;
- postojeće mreže za praćenje vremena, voda, poljoprivrede i životne sredine koje se mogu bolje povezati;
- iskustvo u upravljanju vodama, melioracijama, poljoprivrednom savetovanju i zaštiti od katastrofa;
- raspoloživi evropski i otvoreni skupovi podataka, kao i ponovljivi CLIMAAX tokovi obrade;
- rastuća zainteresovanost lokalnih vlasti, udruženja, nevladinih organizacija i poljoprivrednika;
- nacionalni Program prilagođavanja sa merama za znanje, sušu, vode, poljoprivredu, šume, zdravlje, urbanizam, infrastrukturu i lokalne kapacitete. [4]

KLJUČNA PROMENA PRISTUPA

Sa upravljanja događajem preći na upravljanje rizikom: planirati pre štete, koristiti buduće scenarije, povezati sektore, unapred dogovoriti pragove i radnje, obezbediti preventivno finansiranje i meriti da li je ranjivost stvarno smanjena.

3.3. Kritične praznine

Domen	Praznina koju treba zatvoriti
Upravljanje	rasute nadležnosti; nedovoljno jasni vlasnici rizika i mehanizmi zajedničkog odlučivanja
Planovi	klimatski scenariji i kvantitativni pokazatelji nisu sistematski ugrađeni u sva relevantna dokumenta
Pragovi rizika	ne postoje usaglašeni pokrajinski kvantitativni pragovi prihvatljivog/tolerabilnog rizika od suše
Podaci	nedovoljna rezolucija i interoperabilnost podataka o zemljištu, vodama, navodnjavanju, gazdinstvima i ranjivim grupama
Prevencija	finansiranje i dalje pretežno reaguje na štetu, a manje na preventivno smanjenje rizika
Infrastruktura	pokrivenost navodnjavanjem je ograničena i prostorno neujednačena; Phase 2 navodi navodnjavanu površinu ispod 3% obradivog zemljišta na regionalnom nivou.
Osiguranje	Phase 2 procenjuje da je pokrivenost poljoprivrednim osiguranjem ispod 30%
Lokalni kapacitet	ograničena klimatska pismenost i nedostatak stalnog tehničkog osoblja u delu lokalnih uprava
Učešće	mala gazdinstva, ruralne žene, stariji poljoprivrednici i druge ranjive grupe nisu dovoljno zastupljeni
Praćenje efekta	nedovoljno se meri smanjenje ranjivosti, otpornost sistema i izbegnuta šteta

4. Kako proveriti i prilagoditi postojeće planove

Najbrži put nije izrada potpuno novih paralelnih dokumenata, već sistematsko uključivanje klimatskog rizika u postojeće razvojne i sektorske planove, uz poseban akcioni plan adaptacije kada je potreban. Nacionalni Program takođe daje prednost uključivanju adaptacije u sektorske politike i planove, uz sistematsko praćenje i izveštavanje. [4]

4.1. Minimalni standard klimatski otpornog plana

Element	Pitanje za proveru	Ocena 0–3
1. Mandat i odgovornost	Imenovan koordinator, vlasnici rizika, međusektorski tim i način izveštavanja.	0 1 2 3
2. Sadašnja klima	Korišćeni relevantni podaci o hazardima, štetama, prekidima i ranjivosti.	0 1 2 3
3. Budući scenariji	Razmotren najmanje jedan niži i jedan viši scenario, sa vremenskim horizontima.	0 1 2 3
4. Izloženost	Mapirani ljudi, usevi, priroda, voda, infrastruktura, usluge i imovina.	0 1 2 3
5. Ranjivost i nejednakost	Identifikovane osetljive grupe, kapaciteti i prostorne razlike.	0 1 2 3
6. Kaskadni rizici	Razmotrene veze suša–toplota–voda–hrana–energija–zdravlje–ekonomija.	0 1 2 3
7. Ciljevi	Definisani merljivi ishodi otpornosti, ne samo aktivnosti.	0 1 2 3
8. Mere	Portfelj sadrži preventivne, strukturne, prirodne, finansijske i obrazovne mere.	0 1 2 3
9. Provera mera	Procena koristi, troška, emisija, jednakosti, izvodljivosti i maladaptacije.	0 1 2 3
10. Finansiranje	Utvrđeni izvor, nosilac, priprema projekta i troškovi životnog ciklusa.	0 1 2 3
11. Sprovođenje	Rokovi, odgovornosti, nabavke, dozvole, partneri i kapaciteti.	0 1 2 3
12. Praćenje i revizija	Pokazatelji, početno stanje, ciljne vrednosti, učestalost i okidači za reviziju.	0 1 2 3

Skala: 0 – nije obuhvaćeno; 1 – pomenuto bez analize ili odgovornosti; 2 – delimično operacionalizovano; 3 – potpuno ugrađeno, finansirano i praćeno.

4.2. Indeks poboljšanja upravljanja klimatskim rizikom

Za merenje poboljšanja predlaže se projektni Indeks upravljanja klimatskim rizikom (IUKR). To nije zakonski propisan indeks, već jednostavan alat za Phase 3. Osam domena ocenjuje se od 0 do 4: upravljanje; podaci i procena; planiranje; finansiranje; sprovođenje; rano upozoravanje i spremnost; učešće i pravednost; praćenje, evaluacija i učenje.

FORMULA

IUKR (%) = zbir ostvarenih bodova / maksimalnih 32 boda × 100. Poboljšanje = IUKR nakon intervencije – početni IUKR. Predloženi operativni cilj za buduću primenu vodiča jeste porast najmanje jednog nivoa zrelosti u najmanje šest od osam domena, nakon utvrđivanja početnog stanja.

0 – početno	nema formalnog pristupa; reagovanje je ad hoc
1 – osnovno	rizik je prepoznat, ali bez jasnih procedura
2 – razvija se	postoje delimični procesi, projekti i odgovornosti
3 – integrisano	rizik je ugrađen u planove, budžete i rad službi
4 – adaptivno	sistem uči, meri rezultate, koristi scenarije i redovno se ažurira

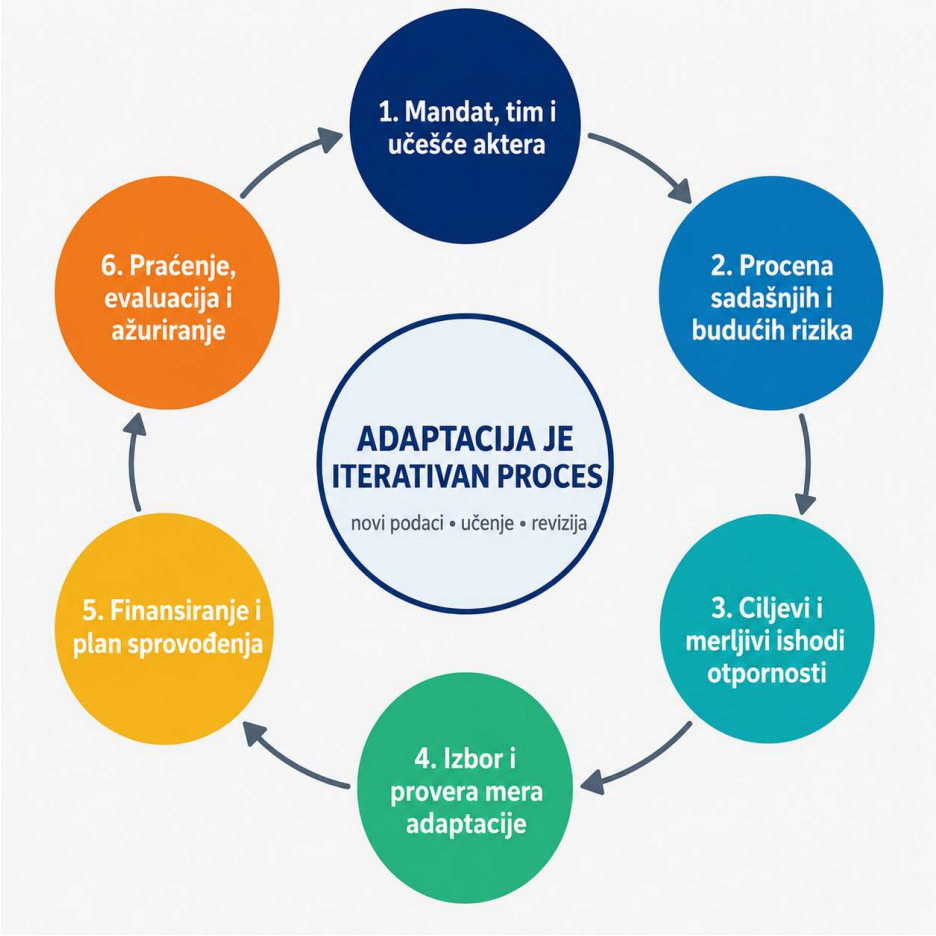
IUKR, predložene težine kriterijuma, indikativne kategorije troška, vremenski rokovi i mapa puta predstavljaju projektne alate i stručne preporuke za potrebe Phase 3. Oni nisu zakonski propisani standardi niti obavezne vrednosti preuzete iz nacionalnih dokumenata.

4.3. Postupak analize dokumenta

1. Odrediti vlasnika analize i okupiti tim koji poznaje dokument, podatke i sprovođenje.
2. Popisati sve povezane planove, odluke, budžete, projekte i procedure upozoravanja/odgovora.
3. Povezati ciljeve i mere plana sa mapama rizika, ranjivim grupama i kritičnim uslugama.
4. Oceniti 12 elemenata minimalnog standarda i osam domena IUKR-a.
5. Utvrditi praznine koje mogu prouzrokovati najveći gubitak ili blokirati sprovođenje.
6. Predložiti precizne izmene: novi cilj, pokazatelj, mapa, postupak, budžetska linija, odgovorna institucija ili mera.
7. Javno proveriti nalaze sa zainteresovanim stranama, posebno grupama koje snose rizik ili trošak.
8. Usvojiti plan izmene, pratiti sprovođenje i ponoviti ocenu nakon 12–18 meseci.

5. Ciklus planiranja adaptacije

Evropski Adaptation Support Tool i Regional Adaptation Support Tool tretiraju adaptaciju kao fleksibilan i iterativan ciklus: priprema, procena rizika, izbor opcija, sprovođenje, praćenje, evaluacija i ažuriranje. [10] Standard ISO 14091 daje okvir za procenu sadašnjih i budućih rizika kao osnovu za planiranje, sprovođenje i praćenje adaptacije. [12]



Slika 6. Predloženi šestostepeni ciklus adaptacije za pokrajinske i lokalne organe.

Korak 1 – Mandat, tim i učešće

Usvojiti odluku ili zadatak; imenovati koordinatora; definisati vlasnike rizika; mapirati aktere; obezbediti učešće ranjivih grupa; dogovoriti način razmene podataka i rešavanja konflikata.

Korak 2 – Procena rizika

Kombinovati istorijske događaje, CLIMAAX karte, buduće scenarije, izloženost, ranjivost, kapacitet i lokalno znanje. Evidentirati neizvesnost i nedostatke podataka.

Korak 3 – Ciljevi otpornosti

Definisati šta mora ostati funkcionalno i pod kojim uslovima: snabdevanje vodom, usevi, zdravstvo, putevi, škole, prirodna staništa, socijalne usluge. Postaviti merljive ciljeve.

Korak 4 – Izbor mera

Razviti više opcija, uključujući „bez akcije”, prirodna i tehnička rešenja, promenu ponašanja, propise, finansijske instrumente i kombinovane pakete.

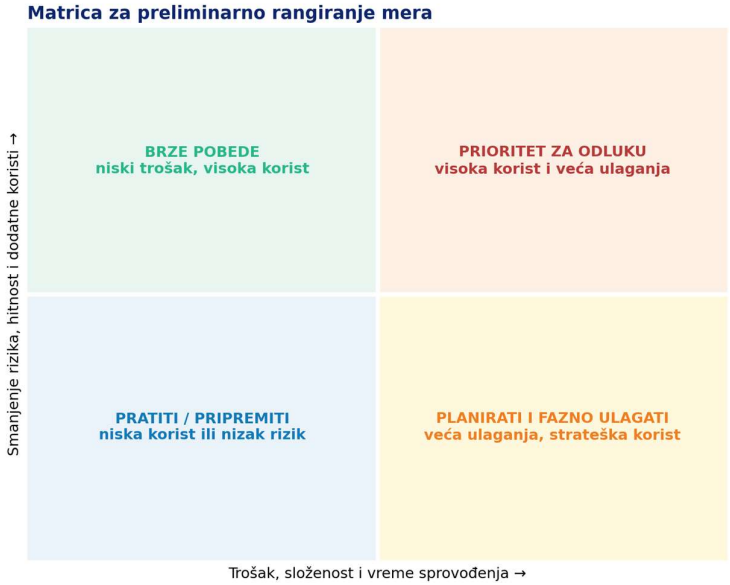
Korak 5 – Finansiranje i sprovođenje

Pripremiti tehničke kartice, studije, dozvole, budžet, nabavke, partnerstva, plan održavanja i komunikaciju. Prioritet dati merama koje su zrele i smanjuju najveći rizik.

Korak 6 – Praćenje i revizija

Meriti ostvarenje, ishod i promenu rizika; proveravati nejednakosti i neželjene posledice; javno izveštavati i ažurirati plan kada se promene scenario, prag, trošak ili učinak.

5.1. Višekriterijumsko rangiranje mera



Slika 7. Brza matrica za odlučivanje pre detaljne višekriterijumske analize.

Kriterijum	Predložena težina	Ocena 1–5
Smanjenje rizika	25%	1 2 3 4 5
Hitnost i vremenski horizont	15%	1 2 3 4 5
Troškovna efikasnost	15%	1 2 3 4 5
Tehnička i institucionalna izvodljivost	10%	1 2 3 4 5
Dodatne koristi za zdravlje, prirodu i razvoj	10%	1 2 3 4 5
Pravednost i zaštita ranjivih grupa	10%	1 2 3 4 5
Robusnost kroz scenarije	10%	1 2 3 4 5
Nizak rizik od maladaptacije i povećanja emisija	5%	1 2 3 4 5

Težine su početni predlog. Tim ih prilagođava lokalnom kontekstu, ali mora dokumentovati razlog i uključiti zainteresovane strane.

5.2. Provera rizika od neprilagođenosti

- Da li mera povećava potrošnju vode ili energije na neodrživ način?
- Da li štiti jednu grupu ili lokaciju tako što povećava rizik drugoj?
- Da li zaključava sistem u skupu, nefleksibilnu infrastrukturu koja neće biti odgovarajuća u budućem scenariju?
- Da li pogoršava kvalitet vode, zemljišta, biodiverzitet ili emisije gasova sa efektom staklene bašte?
- Da li je održavanje realno finansirano i organizovano tokom celog životnog veka?
- Da li mera zanemaruje siromašnija domaćinstva, mala gazdinstva, starije, osobe sa invaliditetom ili druge ranjive grupe?
- Da li su pretpostavke o dostupnosti vode, zemljišta, tehnologije i ponašanju korisnika proverene?

6. Portfelj mera adaptacije

Portfelj je organizovan prema pet tema definisanih u radnom planu Phase 3: upravljanje vodama, zaštita zemljišta, otpornost agroekosistema, institucionalna koordinacija i podaci, te svest i obrazovanje. Dodate su poprečne mere za zdravlje, urbana područja, prirodu i infrastrukturu. Mere treba kombinovati; jedna investicija retko može samostalno rešiti rizik. [3]



Slika 8. Pet povezanih stubova portfelja adaptacije.

A. Upravljanje vodama

Kod	Mera	Vreme / trošak	Primarni obuhvat
A1	Lokalni vodni bilansi i planovi suše	Brzo / €	sve oblasti
A2	Obnova, automatizacija i efikasnost sistema za navodnjavanje	Srednje–dugo / €€€	RS124, RS126, RS122, RS125
A3	Mikroretencije, akumulacije i prikupljanje atmosferske vode	Srednje / €€	prioritetne oblasti
A4	Smanjenje gubitaka u javnom vodosnabdevanju i upravljanje potražnjom	Srednje / €€	gradovi i opštine
A5	Zaštita podzemnih i površinskih voda i ekoloških protoka	Kontinuirano / €€	cela APV
A6	Plavo-zelena infrastruktura za zadržavanje padavina	Srednje / €€	urbana područja

B. Zaštita zemljišta

Kod	Mera	Vreme / trošak	Primarni obuhvat
B1	Pokrovni usevi i stalna pokrivenost zemljišta	Brzo / €	poljoprivredne površine
B2	Povećanje organske materije i precizna primena đubriva	Srednje / €–€€	cela APV
B3	Konzervacijska obrada i kontrolisani prolazi mehanizacije	Srednje / €€	rizična zemljišta
B4	Protiverozione mere i zaštitni pojasevi	Srednje / €€	izložene parcele i kanali
B5	Praćenje salinizacije, sabijanja i vlage zemljišta	Brzo / €	Banat i druge kritične zone
B6	Demonstracione parcele i plaćanja za ekosistemske usluge	Srednje / €€	pilot opštine

C. Otpornost agroekosistema

Kod	Mera	Vreme / trošak	Primarni obuhvat
C1	Sortiment i plodored prilagođen toploti i suši	Brzo / €	cela APV
C2	Prilagođavanje rokova setve i operacija agrometeorološkim prognozama	Brzo / €	cela APV
C3	Precizno navodnjavanje povezano sa vlagom zemljišta i ET_0	Srednje / €€	prioritetne oblasti
C4	Diversifikacija proizvodnje i prihoda gazdinstava	Srednje / €€	ruralna područja
C5	Toplotna zaštita stoke, voda i ventilacija	Brzo–srednje / €€	stočarska područja
C6	Integrisano upravljanje štetočinama i novim biološkim rizicima	Kontinuirano / €	cela APV

D. Institucije, podaci i finansije

Kod	Mera	Vreme / trošak	Primarni obuhvat
D1	Pokrajinski koordinacioni mehanizam i vlasnici rizika	Brzo / €	pokrajinski nivo
D2	Zajednička platforma pokazatelja i georeferenciranih podataka	Srednje / €€	cela APV
D3	Višehazardni sistem ranog upozoravanja i protokoli delovanja	Srednje / €€	sve oblasti
D4	Klimatska provera planova, budžeta i investicija	Brzo / €	pokrajina i JLS
D5	Finansijski instrumenti, osiguranje i fond za preventivne mere	Srednje / €€	cela APV
D6	Godišnji izveštaj o riziku i revizija planova	Kontinuirano / €	pokrajina i JLS

E. Znanje, zdravlje i komunikacija

Kod	Mera	Vreme / trošak	Primarni obuhvat
E1	Sedam teritorijalnih radionica i program obuke	Brzo / €	sedam oblasti
E2	Agrometeorološke savetodavne poruke po kulturama	Brzo / €	poljoprivrednici
E3	Planovi zaštite zdravlja od vrućine	Brzo / €	gradovi i opštine
E4	Online kampanja i lokalni komunikacioni paketi	Brzo / €	javnost
E5	Školski i omladinski programi klimatske pismenosti	Srednje / €	obrazovne ustanove
E6	Participativno praćenje i građanska nauka	Srednje / €	lokalne zajednice

Legenda troška: € – nizak; €€ – srednji; €€€ – visok kapitalni zahtev. Kategorije su indikativne i moraju se potvrditi studijom izvodljivosti i troškovima životnog ciklusa.

6.1. Deset prioritetnih kartica mera

D1 Pokrajinski koordinacioni mehanizam za klimatske rizike

Rizik/problem	Fragmentirane nadležnosti i nejasno vlasništvo nad rizikom.
Ključne aktivnosti	Odlukom imenovati međusektorski tim; definisati vlasnike rizika i RACI matricu; usvojiti godišnji plan rada; kvartalno razmatrati pokazatelje; uključiti sedam oblasti, stručne institucije, privredu i civilno društvo.
Nosilac i partneri	Pokrajinski sekretarijat za urbanizam i zaštitu životne sredine; partneri: relevantni sekretarijati, RHMZ, MUP/Sektor za vanredne situacije, JLS, javna preduzeća, naučne institucije.
Vreme i trošak	0–6 meseci; nizak direktni trošak.
Pokazatelji	Odluka usvojena; broj redovnih sastanaka; procenat odluka sa imenovanim nosiocem i rokom; IUKR domen upravljanja.
Zaštitne mere / napomena	Ne stvarati paralelno telo bez mandata; integrisati postojeće mehanizme.

D2 Zajednička platforma podataka i pokazatelja

Rizik/problem	Rasuti podaci, neusklađene rezolucije i otežano ažuriranje procene.
Ključne aktivnosti	Uspostaviti katalog podataka; sporazume o razmeni; jedinstvene metapodatke; periodično računati SPI, SPEI, P–ET_0, vlagu zemljišta, izloženost i ranjivost; javni pregled bez osetljivih podataka; verzionisanje metodologije.
Nosilac i partneri	Pokrajina i RHMZ uz geodetske, vodne, poljoprivredne, zdravstvene i statističke institucije.
Vreme i trošak	6–18 meseci; srednji trošak.
Pokazatelji	Broj interoperabilnih skupova; vreme ažuriranja; pokrivenost oblasti; broj korisnika; broj odluka koje koriste platformu.
Zaštitne mere / napomena	Jasna pravila kvaliteta, privatnosti i odgovornosti; ne mešati podatke različite skale bez upozorenja.

D3 Višehazardni sistem ranog upozoravanja i protokoli delovanja

Rizik/problem	Upozorenje bez unapred dogovorenih radnji ne smanjuje dovoljno posledice.
Ključne aktivnosti	Definisati pragove i nivoe; povezati monitoring, prognozu, procenu posledica, komunikaciju i odgovor; izraditi matrice „ko radi šta" za sušu, toplotu, intenzivne padavine i požarni rizik; testirati vežbama; koristiti više kanala.
Nosilac i partneri	RHMZ, pokrajinski i lokalni organi, civilna zaštita, zdravstvo, poljoprivredne i komunalne službe, mediji.
Vreme i trošak	6–18 meseci; srednji trošak.
Pokazatelji	Pokrivenost stanovništva; vreme od prognoze do poruke; procenat poruka sa jasnom radnjom; broj testova; odziv ciljnih grupa.
Zaštitne mere / napomena	Poruke moraju biti razumljive, pristupačne i dostupne bez digitalnih prepreka. Četiri stuba EW4All su znanje o riziku, praćenje/prognoza, komunikacija i spremnost za odgovor. [14]

A1 Lokalni vodni bilansi i planovi upravljanja sušom

Rizik/problem	Odluke o vodi bez zajedničke slike ponude, potražnje, ekoloških potreba i budućih scenarija.
Ključne aktivnosti	Za sliv/komunalni sistem izračunati sezonsku ponudu i potražnju; uključiti javno snabdevanje, poljoprivredu, industriju i ekosisteme; definisati fazne mere za različite nivoe suše; utvrditi pragove restrikcije i prioritetne korisnike; godišnje ažurirati.
Nosilac i partneri	Vodoprivredne institucije i JLS, uz RHMZ, komunalna preduzeća, poljoprivredu, zaštitu prirode i korisnike.
Vreme i trošak	0–12 meseci; nizak–srednji trošak.
Pokazatelji	Usvojen bilans; procenat potrošnje obuhvaćen merenjem; broj aktiviranih faznih mera; gubici vode; održan ekološki protok.
Zaštitne mere / napomena	Ne računati svu teorijski raspoloživu vodu kao bezbednu za zahvatanje; uključiti kvalitet i ekološke potrebe.

A3 Mikroretencije i prikupljanje atmosferske vode

Rizik/problem	Brz oticaj padavina i nedostatak lokalno dostupne vode u sušnom periodu.
Ključne aktivnosti	Mapirati depresije i bezbedne lokacije; proceniti kvalitet vode i rizik od poplave; kombinovati poljske bare, kanalske retencije, krovne rezervoare i obnovu vlažnih staništa; pripremiti režim održavanja i upravljanja sedimentom.
Nosilac i partneri	JLS, vodoprivreda, poljoprivreda, upravljači zemljišta i zaštićenih područja.
Vreme i trošak	1–3 godine; srednji trošak.
Pokazatelji	m^3 retencijskog kapaciteta; površina usporenog oticaja; broj korisnika; smanjenje vršnog oticaja; ekološki pokazatelji.
Zaštitne mere / napomena	Obavezna hidrološka i ekološka provera; izbeći pogoršanje kvaliteta vode, širenje invazivnih vrsta i rizik po bezbednost.

C1 Klimatski prilagođeni plodored, sortiment i rokovi setve	
Rizik/problem	Toplota i deficit vode u kritičnim fenofazama, veća varijabilnost prinosa.
Ključne aktivnosti	Testirati sorte i hibride različite dužine vegetacije; diversifikovati plodored; povezati setvu i operacije sa sezonskim i kratkoročnim prognozama; očuvati genetičku raznovrsnost; objavljivati lokalne rezultate ogleda.
Nosilac i partneri	Savetodavne i naučne institucije, semenske kuće, zadruge i gazdinstva.
Vreme i trošak	od naredne sezone; nizak trošak.
Pokazatelji	broj testiranih kombinacija; ha diversifikovanog plodoreda; varijabilnost prinosa; broj korisnika saveta.
Zaštitne mere / napomena	Ne zasnivati odluku na jednom scenariju ili jednoj sorti; pratiti tržište, bolesti i potrebe za vodom.

E1 Sedam teritorijalnih radionica i trajni program obuke	
Rizik/problem	Neravnomerno znanje i kapacitet za primenu rezultata procene u lokalnim planovima.
Ključne aktivnosti	Sprovesti po jednu radionicu u svakoj oblasti; koristiti lokalne mape i slučajeve; vežbati proveru plana, izbor mera i izradu projektne kartice; uspostaviti mrežu kontakt osoba; obezbediti materijale, snimke i mentorsku podršku.
Nosilac i partneri	Pokrajinski sekretarijat i projektni tim uz JLS, RHMZ, stručne institucije i lokalne partnere.
Vreme i trošak	0–12 meseci; nizak trošak.
Pokazatelji	7 radionica; broj i struktura učesnika; rezultat testa pre/posle; broj završenih lokalnih kartica; IUKR promena.
Zaštitne mere / napomena	Obezbediti praktičan rad, dostupnost, rodnu i generacijsku zastupljenost i podršku manjim opštinama.

6.2. Poprečni paketi za gradove, zdravlje, prirodu i infrastrukturu

URBANA TOPLOTA I INTENZIVNE PADAVINE

mapiranje toplotnih ostrva; drvoredi i hlad; propusne površine; zeleni krovovi gde su izvodljivi; retencija kišnice; rashladni prostori; klimatski standardi za javne objekte; održavanje zelenila prilagođeno suši. Nacionalni program posebno ističe zelene površine, lokalno urbano planiranje adaptacije i praćenje toplotnih ostrva. [4]

BIODIVERZITET I ZAŠTIĆENA PODRUČJA

obnova vlažnih staništa i ekoloških koridora; kontrola invazivnih vrsta; klimatska provera planova upravljanja; praćenje ključnih vrsta i usluga ekosistema; prilagođavanje posetilaca i ekoturizma; zaštita vode i požarna prevencija. Očuvani ekosistemi povećavaju kapacitet prilagođavanja i pružaju prirodna rešenja. [5][7][8]

KRITIČNA INFRASTRUKTURA I JAVNE USLUGE

klimatska provera puteva, mostova, vodovoda, kanalizacije, energetike, zdravstvenih i obrazovnih objekata; plan kontinuiteta; rezervno napajanje i voda; preventivno održavanje; standardi za buduće temperature i padavine; „Build Back Better" posle događaja. [13]

SOCIJALNA OTPORNOST I PRAVEDNOST

registri podrške uz zaštitu podataka; pomoć pri ulaganju malim gazdinstvima i siromašnijim domaćinstvima; dostupno osiguranje; savetovanje na terenu; uključivanje žena, mladih, starijih i osoba sa invaliditetom; praćenje raspodele koristi i troškova.

7. Teritorijalni prioriteti za sedam upravnih okruga, koji odgovaraju NUTS 3 oblastima AP Vojvodine

Profili u nastavku služe kao početna orijentacija za planiranje i radionice. Oni se zasnivaju na rangiranju Phase 2 i moraju biti dopunjeni lokalnim podacima, mapama kritične infrastrukture, vodnim bilansima, strukturama gazdinstava, zdravstvenim pokazateljima i konsultacijama. [3]

RS124 – Severnobanatska oblast

VEOMA VISOK PRIORITET

Profil rizika: Relativna i poljoprivredna suša; neposredna akcija; RPI 3,7; nizak kapacitet 0,30.

Preporučeni paket: Lokalni vodni bilansi i plan suše; modernizacija i merenje navodnjavanja; mikroretencije; praćenje vlage/salinizacije; pokrovni usevi i organska materija; agrometeorološke poruke; pomoć malim gazdinstvima; operativni pragovi upozorenja.

Rezultat u prvih 12 meseci: Prvih 12 meseci: koordinaciona grupa, detaljna mapa izloženosti, najmanje dve pilot lokacije i pripremljene investicione kartice.

RS126 – Srednjobanatska oblast

VEOMA VISOK PRIORITET

Profil rizika: Najviša učestalost/intenzitet u proceni; relativna i poljoprivredna suša; RPI 3,7; nizak kapacitet 0,33.

Preporučeni paket: Upravljanje potražnjom i retencijom vode; prioritetna infrastruktura; zaštita zemljišta; diversifikacija useva; zaštita stoke od toplote; rani sistem upozorenja; klimatska provera razvojnih i prostornih planova.

Rezultat u prvih 12 meseci: Prvih 12 meseci: usvojeni pragovi, pilot paket voda–zemljište–usev i sporazum o razmeni podataka.

RS122 – Južnobanatska oblast

VISOK PRIORITET

Profil rizika: Kombinovana suša; neposredna akcija; RPI 3,3; srednji kapacitet 0,35; zavisnost od kišnog režima.

Preporučeni paket: Efikasno navodnjavanje i bezbedni izvori; plodored i sortiment; zaštitni pojasevi; urbana toplota; kontinuitet vodosnabdevanja; zaštita prirodnih područja i vodnih ekosistema; osiguranje i savetovanje.

Rezultat u prvih 12 meseci: Prvih 12 meseci: vodni bilans, kritične zone za useve i zdravlje, paket brzih mera i projektna dokumentacija za prioritetne investicije.

RS125 – Severnobačka oblast

VISOK PRIORITET

Profil rizika: Kombinovana suša; neposredna akcija; RPI 3,3; srednji kapacitet 0,40; dugoročna izloženost.

Preporučeni paket: Monitoring zemljišta i vode; retencija i efikasnost; zaštita od vetroerozije; prilagođeni rokovi i sorte; klimatski planovi za naselja; prekogranična razmena znanja i podataka gde je korisna.

Rezultat u prvih 12 meseci: Prvih 12 meseci: analiza praznina u lokalnim planovima, pilot agrometeorološko savetovanje i paket protiverozionih mera.

RS121 – Zapadnobačka oblast

SREDNJI PRIORITET

Profil rizika: Poljoprivredna suša; više akcije potrebno; RPI 2,3; značajan kapacitet 0,55.

Preporučeni paket: Prevencija pogoršanja; merenje potrošnje vode; konzervacijska poljoprivreda; praćenje vlažnosti; kontinuitet javnih usluga; demonstracione parcele; održavanje postojećih prednosti.

Rezultat u prvih 12 meseci: Prvih 12 meseci: ažurirana procena, najmanje jedna demonstraciona lokacija i plan skaliranja u slučaju pogoršanja scenarija.

RS123 – Južnobačka oblast

SREDNJI PRIORITET

Profil rizika: Poljoprivredna suša; više akcije potrebno; RPI 2,3; značajan kapacitet 0,68.

Preporučeni paket: Urbana toplota i plavo-zelena infrastruktura; efikasno upravljanje vodom; klimatska provera velike infrastrukture; zaštita zdravlja; digitalne usluge i demonstracije; podrška okolnim ruralnim područjima.

Rezultat u prvih 12 meseci: Prvih 12 meseci: plan toplote, standard klimatske provere javnih investicija i razvoj demonstracionog centra znanja.

127 – Sremska oblast / Sremski upravni okrug

NIZAK RELATIVNI PRIORITET / REFERENTNO PODRUČJE

Profil rizika: Poljoprivredna suša; praćenje; RPI 1,3; visok kapacitet 0,75.

Preporučeni paket: Očuvati kapacitet; dokumentovati dobre prakse; pratiti toplotu i sušu; štititi šume, Frušku goru, vode i ekološke koridore; sprečiti prenos rizika razvojem i urbanizacijom; razmena iskustava sa prioritetnim oblastima.

Rezultat u prvih 12 meseci: katalog praksi koje se mogu preneti i plan praćenja ranih znakova pogoršanja.

8. Jačanje kapaciteta i program sedam radionica

Projektna aplikacija predviđa sedam edukativnih radionica, po jednu u svakoj upravnoj oblasti, radi razmene informacija između nivoa vlasti i lokalnih aktera, prenosa znanja o klimatskim rizicima i povećanja spremnosti. [1] Radionice moraju proizvesti konkretan lokalni rezultat, a ne samo preneti informacije.

8.1. Kompetencije koje treba razviti

Razumevanje rizika	tumačenje opasnosti, izloženosti, ranjivosti, kapaciteta, scenarija i neizvesnosti
Rad sa podacima	korišćenje karata, pokazatelja, lokalnih evidencija i dokumentovanje kvaliteta podataka
Integracija u planove	pretvaranje nalaza u cilj, meru, budžet, odgovornost i pokazatelj
Priprema projekata	opis problema, logika intervencije, studija izvodljivosti, trošak životnog ciklusa i finansiranje
Komunikacija rizika	jasna poruka, segmentacija publike, upozorenje sa radnjom, rad sa medijima
Praćenje i učenje	početno stanje, pokazatelji ishoda, evaluacija, revizija i razmena dobrih praksi

8.2. Predloženi jednodnevni program radionice

Vreme	Sadržaj
11:00–11:30	Registracija učesnika
11:30–11:40	Pozdravna reč predstavnika Pokrajinskog sekretarijata za urbanizam i zaštitu životne sredine
11:40–12:00	Predstavljanje programa CLIMAAX i projekta CLIMACHANGE
12:00–12:30	Predstavljanje rezultata prve i druge faze projekta, sa posebnim osvrtom na procenu klimatskih rizika u AP Vojvodini
12:30–13:00	Klimatski rizici, vanredne situacije i postojeći mehanizmi odgovora
13:00–13:30	Predstavljanje Geportala i mogućnosti korišćenja prostornih podataka u proceni i upravljanju rizicima
13:30–14:00	Otvorena diskusija sa učesnicima i sprovođenje ankete
14:00–15:00	Posluženje i neformalna razmena iskustava

U zavisnosti od lokacije i dostupnosti stručnih predavača, program može biti dopunjen posebnim izlaganjima o osmotrenim klimatskim promenama, projekcijama buduće klime, proceni rizika, relevantnim projektima i mogućnostima unapređenja regionalnih i lokalnih planova. Okvir programa zasniva se na planiranim temama seminara: predstavljanje projekta i njegovih rezultata, klimatski rizici i vanredne situacije, Geportal, diskusija i anketa.

8.3. Očekivani rezultati edukativnih seminara

Očekuje se da će organizovani seminari doprineti:

- boljem razumevanju klimatskih rizika i ranjivosti na teritoriji AP Vojvodine;
- upoznavanju učesnika sa rezultatima prve i druge faze projekta CLIMACHANGE;
- unapređenju znanja o mogućnostima korišćenja klimatskih i prostornih podataka u planiranju;
- boljem povezivanju procene klimatskih rizika sa sistemom smanjenja rizika od katastrofa i upravljanja vanrednim situacijama;
- razmeni iskustava između pokrajinskih institucija, lokalnih samouprava, stručnih službi i drugih zainteresovanih strana;
- prikupljanju mišljenja učesnika o postojećim rizicima, kapacitetima, potrebama i mogućnostima za unapređenje lokalnih i regionalnih planova;
- identifikovanju tema za dalje jačanje kapaciteta i stručnu podršku lokalnim samoupravama;
- povećanju vidljivosti projekta i podizanju svesti o potrebi pravovremenog prilagođavanja na klimatske promene.

Anketa planirana na kraju svakog seminara koristiće se kao dopunski instrument za sagledavanje stavova, iskustava i potreba učesnika. Njeni rezultati poslužiće za usmeravanje daljih projektnih aktivnosti i buduće unapređenje preporuka za upravljanje klimatskim rizicima.

8.4. Očekivani izlazi svake radionice

U skladu sa planiranim programom, očekuje se da će svaki edukativni seminar omogućiti:

- evidentiranje broja i strukture učesnika na osnovu popisnih lista;
- predstavljanje programa CLIMAAX, projekta CLIMACHANGE i rezultata prve i druge faze projekta;
- upoznavanje učesnika sa identifikovanim klimatskim rizicima i mogućnostima korišćenja prostornih podataka i Geoportala;
- razmenu iskustava predstavnika pokrajinskih institucija, lokalnih samouprava, stručnih službi i drugih zainteresovanih strana;
- prikupljanje mišljenja učesnika o klimatskim rizicima, postojećim kapacitetima, preprekama i potrebama za podrškom putem ankete;
- evidentiranje predloga i zapažanja iz otvorene diskusije, ukoliko budu dokumentovani;
- identifikovanje tema koje zahtevaju dodatno informisanje, obuku ili institucionalnu podršku;
- doprinos podizanju svesti i boljem razumevanju značaja prilagođavanja na klimatske promene na regionalnom i lokalnom nivou.

Ostvareni izlazi seminara biće dokumentovani popisnim listama učesnika, popunjenim anketnim upitnicima, programima događaja i drugim raspoloživim pratećim materijalima.

MODEL „OBUKA + MENTORSTVO"

Jednodnevna radionica nije dovoljna za promenu prakse. Svakoj oblasti treba obezbediti najmanje dve naknadne onlajn konsultacije i jednu zajedničku sesiju razmene iskustava nakon šest meseci.

9. Komunikacija, edukativni materijali i online kampanja

Komunikacija je mera upravljanja rizikom samo kada primaocu omogućava pravovremenu i konkretnu radnju. Opšte poruke o klimatskim promenama treba povezati sa lokalnim rizikom, sezonom, sektorom i odlukom. Sistem mora kombinovati veb, društvene mreže, lokalne medije, SMS/aplikacije, savetodavne službe, škole i komunikaciju licem u lice.

9.1. Matrica ciljnih grupa i poruka

Ciljna grupa	Osnovna poruka	Najbolji format
Donosioci odluka	Rizik utiče na budžet, razvoj i kontinuitet usluga.	Kratki policy brief, mapa, dashboard, budžetska preporuka.
Lokalni službenici i javna preduzeća	Kako ugraditi rizik u plan, projekat i operativni protokol.	Priručnik, obuka, kontrolna lista, tehnička radionica.
Poljoprivrednici i zadruge	Šta uraditi ove sedmice/sezone da se smanji rizik.	Agrometeorološka poruka, demonstracija, video, savetodavac.
Zdravstvo, socijalne službe i poslodavci	Koga zaštititi i kada aktivirati plan toplote.	Protokol, lista kontakata, upozorenje, plakat.
Građani	Koji rizik dolazi, šta znači i koje radnje štite domaćinstvo.	Kratka poruka, infografik, lokalni medij, događaj.
Deca i mladi	Kako se lokalna klima menja i kako učestvovati.	Školski paket, eksperiment, kviz, građanska nauka.
Mediji	Tačni podaci, kontekst, izvor i preporučena radnja.	Medijski paket, kontakt stručnjaka, grafika, FAQ.

9.2. Predlog online kampanje

Tema	Sadržaj
Razumevanje rizika	Šta su relativna i poljoprivredna suša; kako čitati mapu; šta znači scenario.
Voda	Vodna efikasnost, retencija, odgovorno zahvatanje i plan suše.
Zemljište i usevi	Pokrovni usevi, organska materija, plodored, rokovi i agrometeorološki saveti.
Toplota i zdravlje	Ranjive grupe, rad na otvorenom, rashladni prostori i urbana senka.
Lokalna rešenja	Primeri iz sedam oblasti, kratki intervjui i vizuelne kartice mera.
Planovi i finansiranje	Kako predlog postaje projekat; poziv lokalnim akterima da dostave ideje.
Rezultati i naredni koraci	Šta je urađeno, ko je odgovoran, gde pratiti podatke i kako se uključiti.

9.3. Standard jedne objave

1. Naslov koji opisuje lokalni problem bez senzacionalizma.
2. Jedan proverljiv podatak ili mapa sa jasnim izvorom i datumom.
3. Objašnjenje šta podatak znači za konkretnu ciljnu grupu.
4. Jedna do tri radnje koje se mogu preduzeti odmah ili u narednom periodu.
5. Kontakt ili mesto za dodatne informacije.
6. Pristupačan vizuelni format, tekstualni opis slike i verzija prilagođena mobilnom telefonu.

PRIMER PORUKE ZA SUŠU

„Vlažnost zemljišta i vodni bilans ukazuju na rastući stres za useve u narednom periodu. Proverite stvarnu vlagu na parceli pre navodnjavanja, prioritizujte kritične fenofaze i pratite preporuke savetodavne službe. Ne povećavajte zahvatanje bez provere dozvoljenog i održivog izvora."

PRIMER PORUKE ZA TOPLOTU

„Očekuje se period visokog toplotnog opterećenja. Starije osobe, deca, hronični bolesnici i radnici na otvorenom imaju veći rizik. Obezbedite vodu, hlad i češće pauze, proverite osobe koje žive same i pratite uputstva zdravstvenih službi."

10. Praćenje, evaluacija i učenje

Praćenje mora razlikovati da li je aktivnost završena, da li je proizvela očekivani ishod i da li se rizik smanjio. Sam broj obuka, posađenih stabala ili kilometara cevi nije dovoljan ako se ne prati funkcionalnost, održavanje, dostupnost i uticaj na ranjive grupe. Climate-ADAPT naglašava da su monitoring, evaluacija i revizija integralni deo iterativnog ciklusa adaptacije. [10]



Slika 9. Lanac rezultata za praćenje adaptacije.

10.1. Predloženi ključni pokazatelji

Domen	Primer pokazatelja	Učestalost
Upravljanje	IUKR; broj planova sa imenovanim vlasnicima rizika; učestalost koordinacionih sastanaka	godišnje
Procena i podaci	broj oblasti sa ažuriranim pokazateljima; vreme ažuriranja; pokrivenost podacima	sezonski/godišnje
Planovi	udeo pregledanih i izmenjenih relevantnih planova; broj mera sa budžetom i nosiocem	godišnje
Voda	gubici u mreži; m^3/t proizvoda; retencijski kapacitet; udeo merenih zahvatanja	mesečno/sezonski
Zemljište	organska materija; infiltracija; ha pod zaštitnim praksama; erozija/salinizacija	godišnje/višegodišnje
Poljoprivreda	varijabilnost prinosa; ha sa prilagođenim praksama; korišćenje saveta; osiguranje	sezonski/godišnje
Zdravlje	aktivacije plana toplote; obuhvat ranjivih osoba; ishodi povezani s toplotom	tokom sezone
Upozorenje	vreme izdavanja; domet poruke; procenat poruka sa radnjom; broj vežbi	po događaju
Komunikacija	doseg, angažovanje, preuzimanje materijala, promena znanja i ponašanja	mesečno/kampanja
Pravednost	učešće i korist po polu, dobi, lokaciji, veličini gazdinstva i ranjivosti	godišnje
Finansije	budžet adaptacije; preventivni/deo za oporavak; leverage eksternih sredstava	godišnje
Ishod rizika	prekidi usluga, štete, izbegnuti gubici, vreme oporavka, rezidualni rizik	po događaju/godišnje

10.2. Evaluaciona pitanja

- Da li su prioritetne oblasti i ranjive grupe dobile proporcionalno veću podršku?
- Da li se pokazatelji rizika, prekida usluga ili štete menjaju u željenom pravcu?
- Da li su mere funkcionalne tokom ekstremnog događaja, a ne samo formalno završene?
- Koje pretpostavke nisu bile tačne i koje neželjene posledice su se pojavile?
- Da li su troškovi održavanja, osoblje i podaci obezbeđeni?
- Koju meru treba nastaviti, proširiti, izmeniti ili obustaviti?
- Kako nalaze pretvoriti u izmenu plana, budžeta, standarda i narednog ciklusa procene?

GODIŠNJI JAVNI PREGLED

Preporučuje se kratak godišnji „Pregled klimatskog rizika i adaptacije AP Vojvodine”: stanje opasnosti i posledica, napredak pokazatelja, sprovedene mere, raspoloživo finansiranje, praznine i odluke za narednu godinu.

11. Finansiranje i priprema investicionog portfelja

Adaptacija se najuspešnije finansira kombinovanjem redovnih budžeta, sektorskih podsticaja, javnih investicija, evropskih i međunarodnih fondova, kredita, osiguranja i privatnog učešća. Izvor se bira prema vrsti mere, zrelosti projekta, korisniku, geografskom obuhvatu i očekivanim prihodima. Dostupnost pojedinačnih poziva i uslovi prihvatljivosti menjaju se i moraju se proveriti pre prijave.

Pokrajinski i lokalni budžeti	koordinacija, planovi, podaci, obuke, održavanje, male brze mere i sufinansiranje
Nacionalni programi i podsticaji	poljoprivreda, vode, zaštita životne sredine, zdravlje, infrastruktura, civilna zaštita
EU pretpristupna i teritorijalna saradnja	IPA, IPARD, Interreg i drugi instrumenti za infrastrukturu, ruralni razvoj, saradnju i kapacitete
Horizon Europe / EU Mission / LIFE	demonstracije, inovacije, klimatske usluge, prirodna rešenja, upravljanje i replikacija
Međunarodne finansijske institucije	EIB, EBRD, Svetska banka i razvojne banke za veće investicije i tehničku pomoć
Klimatski i ekološki fondovi	GCF, GEF i donatorski programi, obično kroz akreditovane/nacionalne partnere
Privatni sektor i osiguranje	ulaganja korisnika, ugovori o učinku, osiguranje, lanci vrednosti i javno-privatni aranžmani uz zaštitu javnog interesa

11.1. Minimalna projektna kartica za finansiranje

- Problem i dokaz rizika; lokacija i ciljna grupa;
- Početno stanje i scenario bez intervencije;
- Cilj i merljivi ishodi otpornosti;
- Opis rešenja i alternativnih opcija;
- Nosilac, vlasništvo, partneri i dozvole;
- Kapitalni i operativni trošak, održavanje i životni vek;
- Koristi, izbegnuti gubici i dodatne koristi;
- Uticaj na emisije, prirodu, polove i ranjive grupe;
- Rizici projekta, adaptacija i mere ublažavanja;
- Plan nabavke, sprovođenja i pokazatelji;
- Izvor finansiranja, sufinansiranje i finansijska održivost.

11.2. Budžetsko označavanje adaptacije

Za svaku budžetsku aktivnost preporučuje se oznaka: (A) primarni cilj adaptacija; (B) značajan doprinos adaptaciji; (C) omogućavajuća aktivnost; (N) bez relevantnog doprinosa. Uz oznaku se navodi klimatski rizik, ciljna grupa, oblast, pokazatelj i očekivani rezultat. Ovim se ne zamenjuje finansijska kontrola, već omogućava pregled koliko se ulaže preventivno i gde postoje praznine.

PRAVILO ZA VELIKE INVESTICIJE

Pre odobrenja značajne javne investicije sprovesti klimatsku proveru: relevantni hazard i scenario, kritična granica projektovanja, osetljivost tokom životnog veka, alternative, rezidualni rizik, plan kontinuiteta i trošak održavanja.

12. Mapa puta 2026–2030.



Slika 10. Predložena mapa puta za prelazak sa procene rizika na sprovođenje i učenje.

Do kraja 2026.	koordinacioni mehanizam; sedam radionica; IUKR početno merenje; pregled prioritetnih planova; katalog podataka; komunikaciona kampanja; najmanje jedna projektna kartica po oblasti
Tokom 2027.	usaglašeni pragovi i protokoli za sušu/toplotu; pilot paketi u RS124, RS126, RS122 i RS125; planovi zaštite zdravlja od vrućine; javni godišnji pregled
2028.	evaluacija pilota; skaliranje uspešnih mera; klimatska provera većih investicija; integracija u budžete i sektorske planove; proširenje osiguranja i savetodavnih usluga
2029.	ažurirana regionalna procena rizika; procena kaskadnih rizika; konsolidovan investicioni portfelj; razmena i replikacija praksi između oblasti
2030.	nezavisna evaluacija učinka; revizija prioriteta i ciljeva; dokumentovanje izbegnutih gubitaka i rezidualnog rizika; plan narednog ciklusa

12.1. Raspodela odgovornosti – sažeta RACI matrica

Zadatak	Odgovoran / polaže račun	Konsultuje se	Informiše se
Regionalna procena i pokazatelji	Pokrajinski sekretarijat / RHMZ	JLS, stručne institucije, sektori	javnost i privreda
Lokalna analiza planova	JLS	Pokrajina, lokalne službe, stručnjaci	lokalni akteri i građani
Vodne i poljoprivredne mere	nadležni vodni/poljoprivredni organi i korisnici	JLS, RHMZ, savetodavne službe	zajednice i zaštita prirode
Upozorenje i spremnost	RHMZ i nadležni organi zaštite/spasavanja	zdravstvo, JLS, mediji, komunalne službe	stanovništvo i privreda
Zdravlje od vrućine	zdravstveni organi i JLS	socijalne službe, poslodavci, škole	ranjive grupe i javnost
Praćenje i godišnji izveštaj	Pokrajinski koordinacioni mehanizam	svi nosioci mera	javnost, skupštine i finansijeri

KRAJNJI ISHOD

Do 2030. godine pokrajinski i lokalni sistemi treba da imaju ažurirane procene rizika, jasno odgovorne institucije, finansirane i praćene mere, funkcionalno rano upozoravanje, pripremljene projekte i dokaz da se ranjivost prioritetnih oblasti i grupa smanjuje.

Prilog A. Brza kontrolna lista za pregled lokalnog plana

Pitanje	Da	Delimično	Ne / dokaz koji nedostaje
Da li dokument navodi relevantne klimatske opasnosti i njihove izvore?	☐	☐	☐ _____
Da li koristi buduće klimatske scenarije i najmanje dva vremenska horizonta?	☐	☐	☐ _____
Da li mapira izloženost ljudi, useva, vode, prirode, infrastrukture i usluga?	☐	☐	☐ _____
Da li prepoznaje ranjive grupe i prostorne nejednakosti?	☐	☐	☐ _____
Da li analizira kaskadne i međusektorske rizike?	☐	☐	☐ _____
Da li su utvrđeni vlasnici rizika i odgovornosti?	☐	☐	☐ _____
Da li su ciljevi otpornosti merljivi?	☐	☐	☐ _____
Da li mere imaju rok, nosioca, budžet, izvor i pokazatelj?	☐	☐	☐ _____
Da li su mere proverene na maladaptaciju, emisije i uticaj na prirodu?	☐	☐	☐ _____
Da li postoji protokol upozorenja i delovanja?	☐	☐	☐ _____
Da li je obezbeđeno učešće javnosti i ranjivih grupa?	☐	☐	☐ _____
Da li postoji početno stanje, cilj i raspored izveštavanja?	☐	☐	☐ _____
Da li su definisani okidači za reviziju plana?	☐	☐	☐ _____
Da li su rezultati javno dostupni u razumljivom obliku?	☐	☐	☐ _____

Prilog B. Obrazac projektne kartice mere

Naziv i kod mere	
Lokacija i teritorijalni obuhvat	
Klimatski rizik i dokaz	
Ciljne grupe i korisnici	
Cilj i očekivani ishod	
Opis aktivnosti i alternativa	
Nosilac, partneri i vlasništvo	
Dozvole, uslovi i tehnička dokumentacija	
Rok i faze	
Kapitalni trošak / operativni trošak	
Izvor finansiranja i sufinansiranje	
Pokazatelj, početno stanje i cilj	
Rizici sprovođenja i maladaptacija	
Uticaj na ranjive grupe, prirodu i emisije	
Održavanje i plan nakon završetka	

Prilog C. Obrazac za IUKR ocenu

Domen	Početna ocena 0–4	Ocena nakon intervencije	Promena	Dokaz / napomena
Upravljanje i odgovornosti				
Podaci i procena rizika				
Planiranje i standardi				
Finansiranje				
Sprovođenje i održavanje				
Upozorenje i spremnost				
Učešće i pravednost				
Praćenje, evaluacija i učenje				

Početni IUKR: _____ / 32 = _____ % Završni IUKR: _____ / 32 = _____ % Poboljšanje: _____ procentnih poena

Prilog D. Predloženi skup podataka za lokalnu procenu

Klima	padavine, temperatura, toplotni talasi, sušni dani, SPI/SPEI, ET_0, ekstremne padavine
Voda	protoci/nivoi, podzemne vode, zahvatanje, gubici, kvalitet, akumulacije i ekološke potrebe
Zemljište	tip, organska materija, vlaga, infiltracija, erozija, salinizacija, sabijanje
Poljoprivreda	kulture, prinosi, navodnjavanje, stoka, veličina gazdinstva, osiguranje i ekonomska izloženost
Stanovništvo i zdravlje	starost, invaliditet, socijalna ranjivost, rad na otvorenom, zdravstveni ishodi i dostupnost usluga
Priroda	zaštićena područja, staništa, koridori, vlažna staništa, požarni rizik i invazivne vrste
Infrastruktura i usluge	putevi, mostovi, vodovod, kanalizacija, energija, zdravstvo, škole, skloništa i kritične tačke
Štete i događaji	lokacija, datum, hazard, direktna/indirektna šteta, prekidi, pogođene grupe i vreme oporavka
Mere i finansije	projekti, troškovi, izvori, status, održavanje, pokazatelji i evaluacija

Prilog E. Rečnik osnovnih pojmova

Adaptacija	proces prilagođavanja stvarnoj ili očekivanoj klimi i njenim posledicama radi smanjenja štete ili korišćenja koristi
Klimatska opasnost	fizički događaj ili trend koji može prouzrokovati gubitak ili štetu
Izloženost	prisustvo ljudi, dobara, ekosistema, infrastrukture ili aktivnosti na mestima koja mogu biti pogođena
Ranjivost	sklonost sistema da bude nepovoljno pogođen, uključujući osetljivost i nedostatak kapaciteta
Kapacitet otpornosti	sposobnost da se predvidi, pripremi, odgovori, prilagodi i oporavi uz očuvanje ključnih funkcija
Rezidualni rizik	rizik koji ostaje nakon sprovođenja mera
Maladaptacija / neprilagođenost	mera koja nenamerno povećava rizik, nejednakost, emisije ili degradaciju prirode sada ili u budućnosti
Prirodna rešenja	zaštita, održivo upravljanje i obnova ekosistema radi rešavanja društvenih izazova uz koristi za ljude i biodiverzitet
Rano upozoravanje	povezan sistem znanja o riziku, praćenja/prognoze, komunikacije i spremnosti za odgovor
RPI	kompozitni indeks prioriteta rizika korišćen u CLIMACHANGE Phase 2
IUKR	projektni indeks za merenje zrelosti i poboljšanja upravljanja klimatskim rizikom

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Napomena o pouzdanosti i ažuriranju

Dokument koristi projektne podatke dostupne do decembra 2025. i javne internet izvore proverene 10. januara 2026. Planovi, propisi, programi finansiranja i operativne procedure mogu se menjati. Pre usvajanja konkretne odluke potrebno je proveriti važeći propis, aktuelne podatke, nadležnost i uslove finansiranja kod zvanične institucije.

CLIMAAX
climate ready regions

OD PROCENE RIZIKA DO ODLUKE, OD ODLUKE DO OTPORNOSTI

Praktični vodič za pokrajinske i lokalne institucije, stručne službe, poljoprivredu i zajednice AP Vojvodine



Funded by the European Union

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CLIMACHANGE | PHASE 3

DISTRICT POLICY NOTE – SREM ADMINISTRATIVE DISTRICT

Climate Risk and Adaptation Survey Analysis

Decision-maker brief based on stakeholder responses

7	4
local government areas	survey sections

Sremska Mitrovica • Ruma • Inđija • Stara Pazova • Šid • Pećinci • Irig

PURPOSE OF THE BRIEF

This document presents a concise, evidence-based interpretation of survey findings on climate risks, adaptation planning, institutional capacity and public awareness in the Srem Administrative District. It is intended to support planning discussions among competent provincial bodies, local governments, public utilities, professional institutions and other relevant stakeholders.

June 2026

Autonomous Province of Vojvodina, Republic of Serbia

Executive summary

The survey indicates that the Srem area faces a genuinely multi-hazard climate profile. Drought and storms were selected most frequently, followed by floods and heatwaves. Agriculture is the sector most often identified as vulnerable, while infrastructure and water management also require attention.

The most consistent finding is a major information and coordination gap. Most respondents were unable to confirm whether adaptation measures are integrated into plans, whether training programmes exist, or which measures are currently being implemented. At the same time, **a strong majority of respondents** support improving existing local risk-management plans.

These findings should be interpreted as a call for better institutional visibility, shared data and coordinated planning—not as proof that no adaptation activity exists. The first practical step is therefore a structured inventory of ongoing measures, responsibilities, plans, datasets and funding sources across the local governments and institutions operating in the Srem area.

Key findings at a glance

66.7%	66.7%	88.9%	88.9%
selected drought	selected storms	identified agriculture as vulnerable	support plan improvement

Methodological and data-quality note

HOW TO READ THE RESULTS

For multiple-choice questions, percentages in this brief are expressed as the share of respondents selecting each option; totals may therefore exceed 100%. The source summary contains one unclassified selection in Question 1.3, one unclassified selection in Question 3.2, and one missing response in Question 4.1. These gaps are reported transparently and have not been imputed.

The findings should be treated as indicative rather than statistically representative of all institutions or residents in the district. The results are most useful for identifying issues that warrant verification, discussion and follow-up action.

Governance note

The Srem Administrative District is used here as a territorial frame for analysis. Implementation authority rests with the competent provincial authorities, local self-government units, public enterprises, utilities, sectoral institutions and other legally responsible bodies. Recommendations should therefore be assigned through an agreed inter-institutional mechanism rather than attributed to the district as a separate level of self-government.

1. Climate risk profile and vulnerable sectors

1.1 Main climate risks

Hazard	Share of respondents
Drought	66.7%
Storms	66.7%
Floods	55.6%
Heatwaves	44.4%
Landslides	0.0%

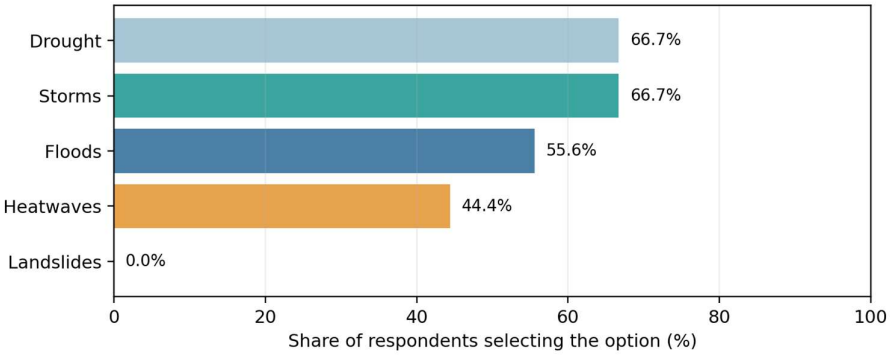


Figure 1. Climate hazards selected by respondents (multiple choice).

Interpretation: The profile is not dominated by a single hazard. Drought and storms require equal attention, while flood risk remains substantial. Planning should therefore combine drought preparedness, storm-resilient infrastructure and flood-risk management rather than rely on a single-hazard approach.

1.2 Status of climate risk assessment

Response	Count	Share
An updated assessment exists	3	33.3%
No updated assessment exists	1	11.1%
Do not know	5	55.6%

More than half of respondents could not confirm whether an updated climate risk assessment exists. This points to limited institutional awareness or insufficient dissemination of available assessments and planning documents.

1.3 Most vulnerable sectors

Reported sector	Selections	Share of respondents
Agriculture	8	88.9%
Infrastructure	2	22.2%
Water management	1	11.1%

Agriculture is the clear priority. Infrastructure and water management should be treated as enabling systems because failures in drainage, transport, energy, irrigation or water supply can amplify agricultural losses. The source summary indicates one additional selection that was not classified by sector.

2. Adaptation planning and institutional capacity

2.1 Integration and visibility of adaptation measures

Indicator	Result	Interpretation
Adaptation measures fully integrated	0.0%	No respondent confirmed full integration.
Adaptation measures partially integrated	11.1%	Limited evidence of partial integration.
Do not know whether measures are integrated	88.9%	A major information and coordination gap.
Able to identify measures currently in place	0.0%	All respondents reported no information on active measures.

IMPORTANT INTERPRETATION

The survey demonstrates low visibility of adaptation action. It does not establish that no measures exist. A verified institutional inventory is required before drawing conclusions about actual implementation coverage.

2.2 Barriers to implementation

Reported barrier	Share
Do not know	77.8%
Financial deficit	22.2%
Data gap	0.0%
Institutional gap	0.0%
Insufficient public support	0.0%

The high “do not know” rate limits the ability to rank barriers reliably. Financial constraints are the only explicit barrier identified, but institutional, technical and data-related constraints should be assessed through interviews and document review rather than assumed absent.

2.3 Training and support needs

Indicator	Result
Respondents who know that a training programme exists	11.1%
Respondents who do not know whether training exists	88.9%

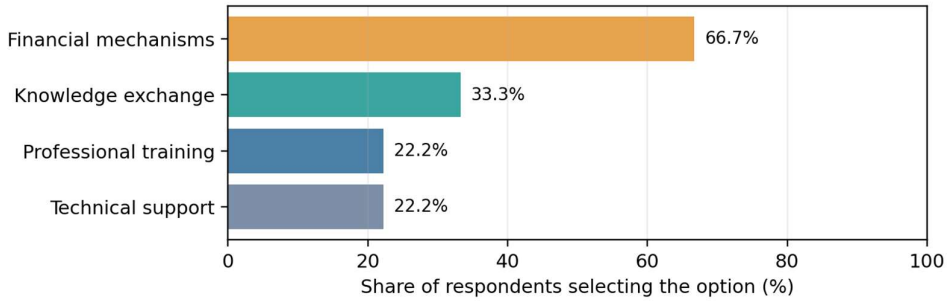


Figure 2. Most frequently selected types of support (multiple choice, N = 9).

Financial mechanisms are the leading support need, followed by knowledge exchange and practical professional or technical assistance. The source summary indicates one additional support selection that was not classified.

3. Public awareness and planning priorities

3.1 Public awareness

Assessment	Share of full sample
Public is sufficiently informed	0.0%
Public is partially informed	66.7%
Public is not informed	22.2%
Missing response	11.1%

Respondents generally perceive public awareness as partial rather than adequate. Communication should move beyond one-way information and include practical guidance tailored to farmers, households, schools, public services and vulnerable groups.

3.2 Preferred communication and engagement channels

Channel	Share of respondents
Media campaigns	66.7%
School and educational programmes	33.3%
Local workshops	22.2%
Public hearings	0.0%

Media campaigns have the widest reach, but they should be complemented by local workshops and educational programmes that allow questions, feedback and practical learning. Public hearings received no selections and should not be the sole engagement mechanism.

3.3 Improvement of local plans

Finding	Result
Respondents supporting improvement of existing plans	88.9%
Respondents able to provide a concrete improvement proposal	0.0%

There is strong support for improving local plans, but limited technical specificity about how this should be done. This combination justifies a facilitated planning process that supplies evidence, templates and technical options while retaining local ownership of decisions.

3.4 Strategic priorities

1. Create a verified inventory of existing climate-risk measures, plans, projects, datasets, responsible institutions and funding sources.
2. Integrate drought, storm and flood risks into relevant development, spatial, emergency-management, agricultural, water and infrastructure plans.
3. Prepare a short, ranked project pipeline with clear owners, readiness requirements and potential funding sources.
4. Establish a recurring training and knowledge-exchange programme for local officials, utilities, agricultural advisers and other practitioners.
5. Introduce a common set of indicators and an annual review process to track implementation, capacity and changes in risk.

4. Strategic assessment and 12-month action plan

4.1 SWOT assessment

STRENGTHS	WEAKNESSES
• Strong support for updating local plans. • Clear recognition of a multi-hazard profile. • Agriculture is consistently identified as a priority sector.	• Limited visibility of existing measures and training. • Few respondents can identify concrete planning solutions. • Small evidence base and incomplete source classifications.
OPPORTUNITIES	**THREATS**
• Access to multi-sector climate and resilience funding. • Potential to link agricultural, water and infrastructure projects. • Opportunity to establish a shared data and project platform.	• Compound drought, storm and flood events may disrupt agriculture and infrastructure. • Fragmented responsibilities can delay implementation. • Uncoordinated investment may create gaps or maladaptation risks.

4.2 Recommended 12-month action plan

Period	Priority action	Lead arrangement	Expected output
Months 1–3	Institutional inventory and information audit	Inter-institutional working group convened under an appropriate provincial or local-government mandate	Verified register of measures, plans, datasets, responsibilities and funding sources
Months 4–6	Multi-hazard risk integration and plan review	Competent local governments with provincial, utility and technical support	Agreed risk profile, priority plan amendments and shortlist of measures
Months 7–12	Project pipeline, capacity building and initial implementation	Named project owners and sectoral partners	Fundable project concepts, training programme, pilot actions and monitoring framework

4.3 Minimum outputs for the first year

- One shared inventory of ongoing and planned adaptation-related activities across the Srem area.
- One agreed responsibility matrix identifying lead and supporting institutions for priority risks.
- A short list of three to five mature project concepts with indicative budgets and funding routes.
- At least two practical training modules: climate-risk integration in plans and preparation of fundable projects.
- A small set of annual indicators covering plan integration, institutional capacity, project readiness and public outreach.

RECOMMENDED IMMEDIATE DECISION

Convene a time-limited inter-institutional working group to validate the survey findings, complete the institutional inventory and agree on responsibilities for the first six months. This should precede major funding applications so that project proposals are based on verified needs, existing activities and clear ownership.

CLIMACHANGE | PHASE 3

DISTRICT POLICY NOTE – CENTRAL BANAT ADMINISTRATIVE DISTRICT

Climate Risk and Adaptation Survey Analysis

Decision-maker brief based on stakeholder responses

5	4
local government areas	survey sections

Zrenjanin • Žitište • Nova Crnja • Novi Bečej • Sečanj

PURPOSE OF THE BRIEF

This document presents a concise, evidence-based interpretation of survey findings on climate risks, adaptation planning, institutional capacity and public awareness in the Central Banat Administrative District. It is intended to support planning discussions among competent provincial bodies, the City of Zrenjanin, the municipalities of Žitište, Nova Crnja, Novi Bečej and Sečanj, public utilities, professional institutions and other relevant stakeholders.

June 2026

Autonomous Province of Vojvodina, Republic of Serbia

Executive summary

The survey identifies drought and heatwaves as the dominant climate concerns in Central Banat. All respondents selected drought, while 77.8% selected heatwaves. Agriculture is the sector most consistently identified as vulnerable, while infrastructure, water management and health also require attention.

The strongest institutional finding is uncertainty about the status and visibility of climate-risk work. A large majority of respondents (88.9%) could not confirm whether an updated climate risk assessment exists, and no respondent confirmed an active training programme. All respondents reported that they had no information on adaptation measures currently in place.

These results should be interpreted as evidence of limited institutional visibility, coordination and access to information—not as proof that no relevant measures or training activities exist. The immediate priority is therefore to verify existing plans, measures, datasets, responsibilities and funding sources before new interventions are designed.

Key findings at a glance

100.0%	77.8%	100.0%	100.0%
selected drought	selected heatwaves	identified agriculture as vulnerable	support plan improvement

Methodological and data-quality note

HOW TO READ THE RESULTS

For multiple-choice questions, percentages in this brief are expressed as the share of respondents selecting each option; totals may therefore exceed 100%. The supplied source summary contains one unclassified selection in Question 1.3 and one unclassified selection in Question 2.3. These items are reported transparently and have not been assigned to a category.

The findings should be treated as indicative rather than statistically representative of all institutions or residents in Central Banat. The findings are most useful for identifying issues that require verification, discussion and follow-up action.

Governance note

The Central Banat Administrative District is used here as a territorial frame for analysis. Implementation authority rests with competent provincial authorities, the City of Zrenjanin, the municipalities of Žitište, Nova Crnja, Novi Bečej and Sečanj, public enterprises, utilities, sectoral institutions and other legally responsible bodies. Recommendations should therefore be assigned through an agreed inter-institutional mechanism rather than attributed to the administrative district as a separate level of self-government.

1. Climate risk profile and vulnerable sectors

1.1 Main climate risks

Hazard	Share of respondents
Drought	100.0%
Heatwaves	77.8%
Floods	22.2%
Storms	22.2%
Landslides	0.0%

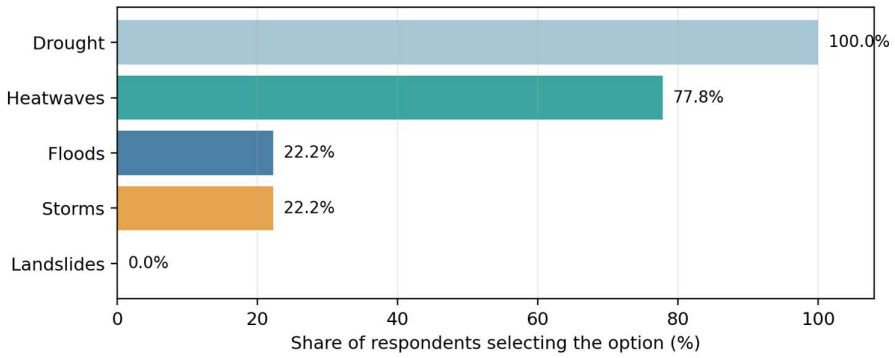


Figure 1. Climate hazards selected by respondents (multiple choice).

Interpretation: Central Banat has a clearly defined heat-and-drought risk profile. Planning should give priority to water availability, soil moisture, heat stress, agricultural production and the resilience of infrastructure and public services during prolonged hot and dry periods. Flood and storm risks remain relevant and should not be excluded from local risk assessments.

1.2 Status of climate risk assessment

Response	Share
An updated assessment exists	0.0%
No updated assessment exists	11.1%
Do not know	88.9%

The absence of any confirmed updated assessment indicates a serious visibility and communication gap. A document review is needed to establish whether assessments exist, whether they are current and how they are used in local planning and investment decisions.

1.3 Most vulnerable sectors

Reported sector	Share of respondents
Agriculture	100.0%
Infrastructure	44.4%
Water management	22.2%
Health	22.2%
Unclassified source selection	11.1%

Agriculture is the undisputed priority sector. Infrastructure, water management and health should be addressed as connected systems because heat and drought can simultaneously affect crop production, water supply, roads, energy demand, working conditions and public health.

2. Adaptation planning and institutional capacity

2.1 Integration and visibility of adaptation measures

Indicator	Result	Interpretation
Adaptation measures fully integrated	0.0%	No respondent confirmed full integration.
Adaptation measures partially integrated	22.2%	Some evidence of partial integration.
Adaptation measures not integrated	11.1%	One respondent reported no integration.
Do not know whether measures are integrated	66.7%	A major information and coordination gap.
Able to identify measures currently in place	0.0%	All respondents reported no information on active measures.

IMPORTANT INTERPRETATION

The survey demonstrates low visibility of adaptation action. It does not establish that no measures exist. A verified institutional inventory is required before conclusions are drawn about actual implementation coverage.

2.2 Barriers to implementation

Reported barrier	Share of respondents
Do not know	55.6%
Data deficit	44.4%
Financial deficit	33.3%
Insufficient institutional capacity	22.2%
Unclassified source selection	11.1%

The high “do not know” rate means that the ranking of barriers should be treated cautiously. However, data availability is the most frequently identified explicit barrier, followed by financial and institutional constraints. A practical response should therefore combine a data audit, clearer responsibilities and project-preparation support rather than focus on funding alone.

2.3 Training and support needs

Training status	Result
Respondents confirming that a training programme exists	0.0%
Respondents reporting that no programme exists	55.6%
Respondents who do not know whether training exists	44.4%

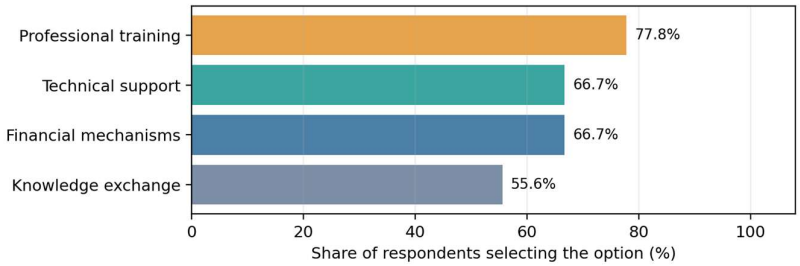


Figure 2. Most frequently selected types of support (multiple choice).

Professional training is the leading need, closely followed by technical assistance and financial mechanisms. The balanced pattern supports a combined capacity-building programme with practical training, technical mentoring, project preparation and peer exchange.

3. Public awareness and planning priorities

3.1 Public awareness

Assessment	Share
Public is sufficiently informed	0.0%
Public is partially informed	77.8%
Public is not informed	22.2%

Respondents generally perceive public awareness as partial rather than adequate. Communication should therefore provide practical, locally relevant guidance for farmers, households, schools, employers, health services and other groups exposed to heat and drought.

3.2 Preferred communication and engagement channels

Channel	Share of respondents
Media campaigns	66.7%
School and educational programmes	44.4%
Local workshops	33.3%

Media campaigns offer broad reach, but they should be complemented by educational programmes and local workshops that allow questions, feedback and practical learning. Communication should be linked to seasonal decisions, warning thresholds and specific recommended actions.

3.3 Improvement of local plans

Finding	Result
Respondents supporting improvement of existing plans	100.0%
Respondents providing a concrete improvement proposal	0.0%

There is unanimous support for improving existing plans, but no respondent provided a concrete proposal. This combination indicates a need for a facilitated planning process that supplies evidence, technical options and templates while retaining local ownership of decisions.

3.4 Strategic priorities

1. Create a verified inventory of existing climate-risk assessments, adaptation measures, projects, datasets, responsible institutions and funding sources.
2. Integrate drought and heatwave risks into development, spatial, agricultural, water, health, emergency-management and infrastructure plans.
3. Establish a shared minimum dataset for climate, water, soil, agriculture, infrastructure and vulnerable groups, with clear update responsibilities.
4. Develop a recurring training and technical-support programme for local officials, utilities, agricultural advisers, health services and other practitioners.
5. Prepare a ranked project pipeline with named owners, readiness requirements, indicative costs and potential funding sources.

4. Strategic assessment and 12-month action plan

4.1 SWOT assessment

STRENGTHS	WEAKNESSES
• Unanimous support for improving local plans. • Clear recognition of drought, heatwaves and agricultural vulnerability.	• Limited visibility of assessments and existing measures. • No confirmed training programme or concrete proposals.
OPPORTUNITIES	**THREATS**
• Potential for a shared climate-data and project platform. • Opportunity to combine sectoral action with available funding.	• Compound heat and drought stress may affect several systems at once. • Fragmented responsibilities may delay or weaken action.

4.2 Recommended 12-month action plan

Period	Priority action	Lead arrangement	Expected output
Months 1–3	Inventory and baseline audit	Working group under an appropriate provincial or local mandate	Verified register of assessments, measures, data, responsibilities and funding
Months 4–6	Training and technical review	Local governments with scientific, utility and advisory partners	Training modules, gap report and agreed review method
Months 7–12	Plan updates and project pipeline	Named project owners and sectoral partners	Plan amendments, three to five project concepts and indicators

4.3 Minimum outputs for the first year

- A shared inventory and responsibility matrix for priority climate risks and measures.
- A minimum shared dataset with clear update and quality-control responsibilities.
- Two practical training modules on plan integration and project preparation.
- Three to five mature project concepts with indicative budgets, owners and funding routes.

RECOMMENDED IMMEDIATE DECISION

Convene a six-month inter-institutional working group to validate the findings, complete the inventory and assign responsibilities before major funding applications are prepared.

CLIMACHANGE | PHASE 3

DISTRICT POLICY NOTE – NORTH BANAT ADMINISTRATIVE DISTRICT

Climate Risk and Adaptation Priorities

Evidence-based note for policy and decision makers

6	4
local government areas	survey sections

Kikinda • Kanjiža • Novi Kneževac • Senta • Ada • Čoka

PURPOSE OF THE BRIEF

This policy note translates stakeholder survey findings into a concise district risk profile, identifies institutional and planning gaps, and sets out priority adaptation actions for competent provincial and local authorities, public enterprises, professional institutions and other relevant actors in the North Banat Administrative District.

June 2026

Autonomous Province of Vojvodina, Republic of Serbia

Executive summary

The survey identifies drought and heatwaves as the dominant climate concerns in North Banat. Drought was selected by 93.1% of respondents and heatwaves by 55.2%, while storms and floods were each selected by 27.6%. Agriculture is perceived as the most vulnerable sector, followed by water management; forestry was also raised as a locally relevant concern.

The findings reveal substantial uncertainty about the status and visibility of climate-risk and adaptation work. Only one respondent confirmed that an updated risk assessment exists, 17 did not know its status, and 15 could not confirm whether adaptation measures are integrated into planning documents. Twenty-four respondents reported that they had no information on measures currently in place. Reported examples include integration of adaptation considerations into spatial and urban planning documents and repurposing of the canal network.

These results should be interpreted as evidence of fragmented information flows, limited access to technical expertise and uneven institutional awareness—not as proof that assessments, measures or training activities are absent. The immediate priority is to verify existing documents and actions, clarify responsibilities, establish an inter-municipal expert mechanism, and connect water and agricultural priorities with capacity building, project preparation and financing.

Key findings at a glance

93.1%	89.7%	82.8%	79.3%
selected drought	identified agriculture as vulnerable	reported no information on active measures	support improvement of plans

Methodological and data-quality note

HOW TO READ THE RESULTS

For multiple-choice questions, percentages in this note are expressed as the share of respondents selecting each option; totals may therefore exceed 100%. Where the supplied summary does not provide a complete category breakdown, the remaining selections are reported as not disaggregated rather than assigned by inference. Qualitative responses are presented separately when no count is available.

The findings should be treated as indicative rather than statistically representative of every institution or resident in North Banat. Their principal value is to identify issues requiring verification, inter-institutional discussion and follow-up action.

Governance note

The North Banat Administrative District is used as a territorial frame for analysis. Implementation authority rests with competent provincial authorities, the City of Kikinda, the municipalities of Kanjiža, Novi Kneževac, Senta, Ada and Čoka, public enterprises, utilities, sectoral institutions and other legally responsible bodies. Recommendations should therefore be assigned through an agreed inter-institutional mechanism rather than attributed to the administrative district as a separate level of self-government.

1. Climate risk profile and vulnerable sectors

1.1 Main climate risks

Hazard	Share of respondents
Drought	93.1%
Heatwaves	55.2%
Storms	27.6%
Floods	27.6%
Landslides	0.0%

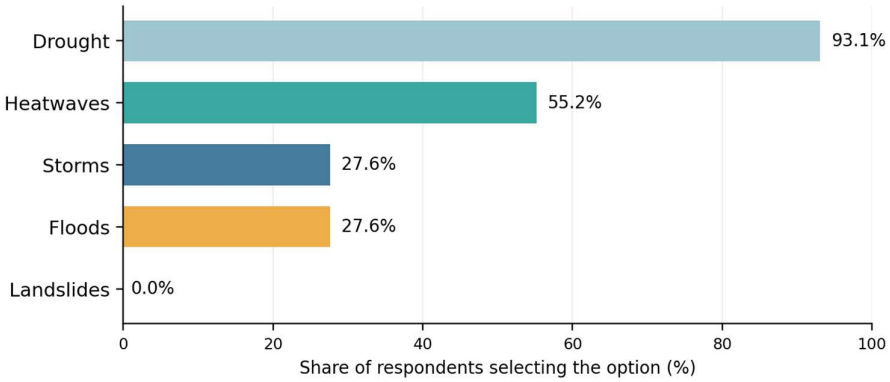


Figure 1. Climate hazards selected by respondents (multiple choice).

Interpretation: North Banat has a pronounced drought-and-heat risk profile. Planning should prioritise water availability, soil moisture, agricultural production, heat stress and the resilience of water systems, infrastructure and essential services during prolonged hot and dry periods. Storm and flood risks remain relevant and should be retained in multi-hazard assessments and local drainage and emergency planning.

1.2 Status of climate risk assessment

Response	Share
Updated assessment exists	3.4%
No updated assessment exists	24.1%
Do not know	58.6%
Other / not described in source summary	13.8%

More than half of respondents could not confirm whether an updated climate-risk assessment exists, and only one confirmed its presence. Four responses were not described by category in the supplied summary. A coordinated document review is needed to verify assessments, coverage, methods and practical use.

1.3 Most vulnerable sectors

Reported sector	Share of respondents
Agriculture	89.7%
Water management	44.8%
Forestry	3.4%
Other sectors not disaggregated in the source summary	Not assigned to a category

Agriculture is the clear priority sector, while water management is a central enabling system for agricultural resilience. Forestry should be retained as a locally relevant concern. The policy response should connect

farm resilience, canal and drainage management, water availability, soil protection, ecosystem functions and continuity of essential services.

2. Adaptation planning and institutional capacity

2.1 Integration and visibility of adaptation measures

Indicator	Result	Interpretation
Adaptation measures fully integrated	3.4%	Full integration is rarely confirmed.
Measures partially integrated	34.5%	A substantial group reports partial integration.
Do not know whether measures are integrated	51.7%	The largest response category; major visibility gap.
Other integration responses	10.3%	The source summary does not provide a separate category breakdown.
No information on measures currently in place	82.8%	Most respondents could not identify active measures. Reported examples include spatial and urban planning integration and canal-network repurposing.

IMPORTANT INTERPRETATION

The survey demonstrates low visibility and uneven knowledge of adaptation action. It does not establish that no measures exist. A verified inventory of plans, projects, investments, responsible institutions and implementation status is required before conclusions are drawn about actual coverage.

2.2 Barriers to implementation

Reported barrier	Source result	Note
Financial deficit	32.6% of all barrier selections	Most frequent explicit barrier.
Do not know	27.9% of all barrier selections	High uncertainty limits ranking.
Insufficient institutional capacity	20.9% of all barrier selections	Organisational and human-resource constraint.
Other categories and qualitative input	18.6% combined; one unquantified comment	Other categories were not disaggregated; “lack of experts” was explicitly noted.

Financial constraints are the most frequently reported explicit barrier, but uncertainty, institutional capacity and the stated lack of experts are also material. The response should combine clear ownership, specialist support, reliable data and project-preparation assistance. Source percentages refer to all barrier selections, not to the share of respondents.

2.3 Training and support needs

Training status	Result
Respondents confirming that a training programme exists	24.1%
Respondents reporting that no programme exists	24.1%
Respondents who do not know whether training exists	51.7%

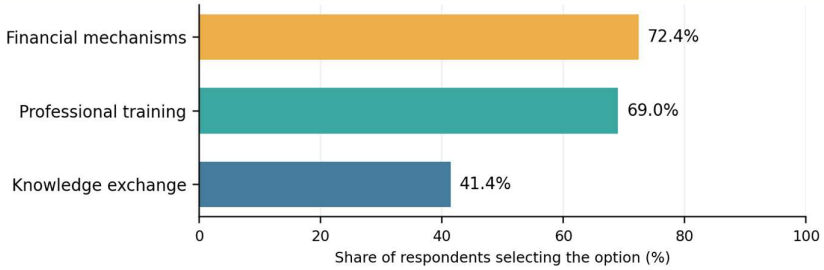


Figure 2. Most frequently selected support needs with reported counts (multiple choice).

Financial mechanisms and professional training are the strongest reported needs, followed by knowledge exchange and good-practice transfer. The source summary contains eight additional support selections that are not disaggregated by category. Capacity building should therefore combine practical risk training, expert mentoring, peer exchange, project design and access to finance.

3. Public awareness and planning priorities

3.1 Public awareness

Assessment	Share
Public is sufficiently informed	3.4%
Public is partially informed	41.4%
Public is not informed	48.3%
Other / not described in source summary	6.9%

Respondents generally perceive public awareness as insufficient. Two responses were not described by category in the supplied summary. Communication should provide practical, locally relevant guidance for groups exposed to drought, heat and water stress.

3.2 Preferred communication and engagement channels

Channel	Share of respondents
Media campaigns	62.1%
School and educational programmes	41.4%
Public hearings	24.1%
Local workshops	20.7%

Media campaigns offer broad reach, while educational programmes, public hearings and workshops can provide explanation, feedback and practical learning. Communication should be linked to seasonal decisions, warning thresholds and clearly assigned response actions. One qualitative response stated that public engagement was absent, indicating uneven access and participation.

3.3 Improvement of local plans

Finding	Result
Respondents supporting improvement of existing plans	79.3%
Remaining plan responses and suggestion coverage	20.7% in other plan-response categories; 82.8% left the suggestion field blank
Main themes in submitted suggestions	Specialised expert and climate teams; stronger institutional communication and systematic education; targeted financial support

There is strong support for improving existing plans, but few respondents submitted concrete proposals. The suggestions consistently point to expert capacity, coordination, education and targeted finance, supporting a facilitated process with evidence, technical options and project templates.

3.4 Strategic priorities

1. **Verify assessments, measures, datasets, training, responsibilities and funding sources across all six local government areas.**
2. **Establish an inter-municipal expert group and integrate drought, heat and water risks into relevant plans.**
3. **Review canal and drainage networks, irrigation needs, water demand, soil moisture and priority agricultural and forestry areas.**
4. **Create a recurring capacity-building and project-preparation programme combining training, mentoring and access to finance.**

4. Strategic assessment and 12-month action plan

4.1 SWOT assessment

STRENGTHS	WEAKNESSES
• Clear agreement on drought, heat and agricultural vulnerability. • Water management is recognised as a priority.	• Limited visibility of assessments, measures and training. • Lack of experts is explicitly identified.
OPPORTUNITIES	**THREATS**
• Establish a cross-municipal expert mechanism. • Consolidate canal initiatives into a project pipeline.	• Drought and heat may affect agriculture, water and services. • Limited expertise may delay action and funding.

4.2 Recommended 12-month action plan

Period	Priority action	Lead arrangement	Expected output
Months 1–3	Verify documents, measures, data and expert gaps	Provincial/local working group	Validated register and baseline
Months 4–6	Review canal, water and agricultural priorities; deliver training	Local and sector partners	Technical review, training and draft projects
Months 7–12	Integrate priorities into plans and a finance-ready pipeline	Named plan and project owners	Plan updates, 3–5 mature projects and funding routes

4.3 Minimum outputs for the first year

- A verified inventory, responsibility matrix and minimum shared dataset.
- An operational inter-municipal expert group and at least two practical training modules.
- Three to five mature adaptation project concepts with owners, budgets and funding routes.

RECOMMENDED IMMEDIATE DECISION

Establish a time-limited North Banat climate and water-resilience working group to verify evidence, map expert gaps and prepare a finance-ready adaptation pipeline within 12 months.

DISTRICT POLICY NOTE – NORTH BAČKA ADMINISTRATIVE DISTRICT

Climate Risk and Adaptation Priorities

Evidence-based note for policy and decision makers

3	4
local government areas	survey sections

Subotica • Bačka Topola • Mali Iđoš

PURPOSE OF THE POLICY NOTE

This policy note translates stakeholder survey findings into a concise district risk profile, identifies institutional and planning gaps, and sets out priority adaptation actions for competent provincial and local authorities, public enterprises, professional institutions and other relevant actors in the North Bačka Administrative District.

June 2026

Autonomous Province of Vojvodina, Republic of Serbia

Executive summary

The survey identifies drought and heatwaves as the dominant climate concerns in North Bačka. Drought was selected by 95.5% of respondents and heatwaves by 50.0%. Agriculture is perceived as the most vulnerable sector, followed by water management. Respondents also highlighted environmental protection and nature conservation as locally relevant concerns.

The findings reveal substantial uncertainty about the status of climate-risk assessment and adaptation planning. Only three respondents confirmed that an updated assessment exists, while nine did not know its status. Ten respondents could not confirm whether adaptation measures are integrated into planning documents, and 18 reported that they had no information on measures currently in place.

These results should be interpreted as evidence of fragmented information flows and uneven institutional awareness, not as proof that assessments, measures or training activities are absent. The immediate priority is to verify existing documents and projects, clarify responsibilities, strengthen professional capacity and prepare a coherent adaptation project pipeline focused on drought, heat, water and agriculture.

Key findings at a glance

95.5%	90.9%	81.8%	86.4%
selected drought	identified agriculture as vulnerable	reported no information on active measures	support improvement of plans

Methodological and data-quality note

HOW TO READ THE RESULTS

For multiple-choice questions, percentages in this note are expressed as the share of respondents selecting each option; totals may therefore exceed 100%. Where the supplied summary does not provide a complete breakdown, categories are reported as not disaggregated rather than inferred.

The findings should be treated as indicative rather than statistically representative of every institution or resident in North Bačka. Their principal value is to identify issues requiring verification, inter-institutional discussion and follow-up action.

Governance note

The North Bačka Administrative District is used as a territorial frame for analysis. Implementation authority rests with competent provincial authorities, the City of Subotica, the municipalities of Bačka Topola and Mali Iđoš, public enterprises, utilities, sectoral institutions and other legally responsible bodies. Recommendations should therefore be assigned through an agreed inter-institutional mechanism rather than attributed to the administrative district as a separate level of self-government.

1. Climate risk profile and vulnerable sectors

1.1 Main climate risks

Hazard	Share of respondents
Drought	95.5%
Heatwaves	50.0%
Storms	27.3%
Heavy local rainfall	4.5%
Floods	4.5%
Landslides	0.0%

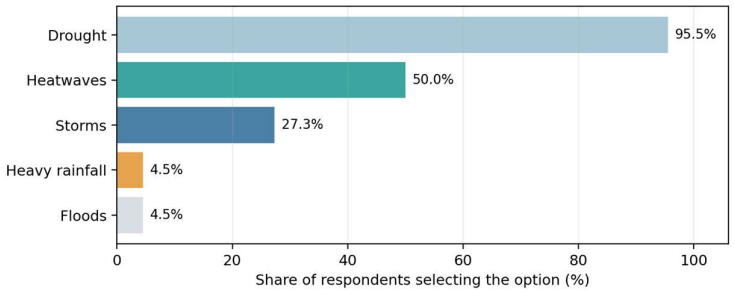


Figure 1. Climate hazards selected by respondents (multiple choice).

Interpretation: North Bačka has a pronounced drought-and-heat risk profile. Planning should prioritise water availability, soil moisture, agricultural production, heat stress and the resilience of infrastructure and essential services during prolonged hot and dry periods. Storms and intense local rainfall remain relevant for multi-hazard planning and drainage management.

1.2 Status of climate risk assessment

Response	Share
Updated assessment exists	13.6%
Do not know	40.9%
Assessment missing or partially prepared	45.5% combined; source summary does not disaggregate

Only three respondents confirmed that an updated assessment exists. A coordinated review is needed to identify valid assessments, their dates, geographic coverage, methods and practical use in planning and investment decisions.

1.3 Most vulnerable sectors

Reported sector	Share of respondents
Agriculture	90.9%
Water management	36.4%
Environmental protection and nature conservation	9.1%
Other sectors not disaggregated in the source summary	Not assigned to a category

Agriculture is the clear priority sector. Water management should be treated as a central enabling system, while environmental protection and nature conservation should be integrated into water, land-use and urban resilience measures. The policy response should connect farm resilience, water demand, soil protection, urban cooling and ecosystem functions.

2. Adaptation planning and institutional capacity

2.1 Integration and visibility of adaptation measures

Indicator	Result	Interpretation
Adaptation measures fully integrated	4.5%	Full integration is rarely confirmed.
Measures partially integrated	36.4%	A substantial group reports partial integration.
Do not know whether measures are integrated	45.5%	The largest response category; major visibility gap.
Other integration responses	13.6%	The supplied summary does not provide a separate category breakdown.
No information on measures currently in place	81.8%	Most respondents could not identify active measures.
Examples reported by informed respondents	Canal management; local resilience frameworks; urban greening; wastewater and sewerage upgrades; heatwave readiness	Reported examples require verification of scope, status, funding and responsible institutions.

IMPORTANT INTERPRETATION

The survey demonstrates low visibility and uneven knowledge of adaptation action. It does not establish that no measures exist. A verified inventory of plans, projects, investments, responsible institutions and implementation status is required.

2.2 Barriers to implementation

Reported barrier	Share of respondents
Financial deficit	59.1%
Insufficient institutional capacity	36.4%
Data deficit	27.3%
Do not know	22.7%
Lack of public support	9.1%
Qualitative response	Lack of defined measures

Financial constraints are the most frequently reported explicit barrier, followed by institutional capacity and data availability. The appropriate response is not funding alone: institutions also need clear ownership, reliable data, defined measures, technical support and a pipeline of projects mature enough to compete for available funds.

2.3 Training and support needs

Training status	Result
Respondents who do not know whether training exists	59.1%
Other responses	40.9%; the supplied summary does not disaggregate confirmation and non-existence

Financial mechanisms and professional training are the strongest reported needs, followed by technical support and exchange of good practices. Capacity building should combine risk training, project design, data use, financing and peer learning.

3. Public awareness and planning priorities

3.1 Public awareness

Assessment	Share
Public is sufficiently informed	13.6%
Public is partially informed	36.4%
Public is not informed	50.0%

Respondents generally perceive public awareness as insufficient. Communication should therefore move beyond general information and provide practical, locally relevant guidance for farmers, households, schools, employers, health services and other groups exposed to drought and heat.

3.2 Preferred communication and engagement channels

Channel	Share of respondents
Media campaigns	36.4%
School and educational programmes	31.8%
Local workshops	27.3%
Public hearings	22.7%

The relatively balanced selection of channels supports a mixed communication approach. Media can provide broad reach, while schools, workshops and public hearings enable explanation, feedback and local participation. Communication should be linked to seasonal decisions, warning thresholds and clearly assigned response actions.

3.3 Improvement of local plans

Finding	Result
Respondents supporting improvement of existing plans	86.4%
Other responses	13.6%; categories not disaggregated in the source summary
Respondents leaving the suggestion field blank	72.7%
Main themes in submitted suggestions	Unified methodological framework; real-time ecological monitoring; systematic field measures; alignment with changing climate patterns

There is strong support for improving existing plans, but most respondents did not submit a concrete proposal. A facilitated process should provide evidence, technical options and project templates while retaining local ownership.

3.4 Strategic priorities

1. Verify assessments, measures, datasets, responsibilities and funding sources across the three local government areas.
2. Integrate drought, heat and water risks into development, spatial, agricultural, health, emergency and infrastructure plans.
3. Review canal networks, drainage, water demand, urban heat exposure and priority agricultural areas, and use the results to prepare a ranked investment pipeline supported by training and financing.

4. Strategic assessment and 12-month action plan

4.1 SWOT assessment

STRENGTHS	WEAKNESSES
• Strong agreement on drought, heat and agricultural vulnerability. • Broad support for improving existing plans. • Several concrete infrastructure and urban-resilience measures are already recognised by some respondents.	• Limited visibility of assessments, measures and training. • Most respondents cannot identify active measures. • Many suggestions remain general rather than implementation-ready.
OPPORTUNITIES	**THREATS**
• Strong demand for training and financial mechanisms. • Potential to connect canal management, urban greening, wastewater infrastructure and heat preparedness. • Cross-border and national funding opportunities can support an integrated project pipeline.	• Prolonged drought and heat may affect agriculture, water, health and services simultaneously. • Fragmented information and insufficient project readiness may delay preventive action. • Heavy local rainfall may create additional drainage and infrastructure pressures.

4.2 Recommended 12-month action plan

Period	Priority action	Lead arrangement	Expected output
Months 1–3	Assessment, measure and hydro-infrastructure audit	Inter-institutional working group under an appropriate provincial or local mandate	Verified register of assessments, measures, datasets, canal and drainage priorities, owners and implementation status
Months 4–6	Capacity building and project preparation	Local governments with scientific, utility, agricultural and financial partners	Training modules, technical gap report and initial project concepts for drought, heat, water and urban resilience
Months 7–12	Plan updates and adaptation project pipeline	Named plan and project owners with sectoral partners	Plan amendments, three to five mature project concepts, indicators, communication actions and financing routes

4.3 Minimum outputs for the first year

- A shared inventory and responsibility matrix for priority climate risks and adaptation measures.
- A minimum shared dataset with clear update, access and quality-control responsibilities.
- At least two practical training modules on climate-risk integration, data use and project preparation.
- Three to five mature adaptation project concepts with indicative budgets, owners and funding routes.
- A coordinated public communication package linking drought, heat and water-risk information with practical actions.

RECOMMENDED IMMEDIATE DECISION

Establish a time-limited inter-institutional working group to validate the survey findings, complete the assessment and measure inventory, review water and heat priorities, and assign responsibilities before major funding applications or plan revisions are prepared.

CLIMACHANGE | PHASE 3

DISTRICT POLICY NOTE – SOUTH BANAT ADMINISTRATIVE DISTRICT

Climate Risk and Adaptation Priorities

Evidence-based note for policy and decision makers

8	4
local government areas	survey sections

Pančevo • Vršac • Bela Crkva • Alibunar • Kovačica • Kovin • Opovo • Plandište

PURPOSE OF THE POLICY NOTE

This policy note translates stakeholder survey findings into a concise district risk profile, identifies institutional and planning gaps, and sets out priority adaptation actions for competent provincial and local authorities, public enterprises, professional institutions and other relevant actors in the South Banat Administrative District.

June 2026

Autonomous Province of Vojvodina, Republic of Serbia

Executive summary

The survey identifies drought and storms as the leading climate concerns in South Banat. Drought was selected by 60.0% of respondents, storms by 46.7% and floods by 26.7%. Agriculture is perceived as the most vulnerable sector, with water management, healthcare and infrastructure also identified as relevant areas of concern.

The findings reveal considerable uncertainty about the status of climate-risk assessment and adaptation planning. Seven respondents did not know whether an updated assessment exists and six reported that it is only partially updated. Nine could not confirm whether adaptation measures are integrated into planning documents, while 11 reported that they had no information on measures currently in place.

These results should be interpreted as evidence of fragmented information flows and uneven institutional awareness, not as proof that assessments, measures or training activities are absent. The immediate priority is to verify existing documents and actions, clarify responsibilities, strengthen technical capacity and prepare a coordinated adaptation project pipeline addressing drought, storms, flooding, agriculture, water, health and infrastructure.

Key findings at a glance

60.0%	93.3%	73.3%	100.0%
selected drought	identified agriculture as vulnerable	reported no information on active measures	support improvement of plans

Methodological and data-quality note

HOW TO READ THE RESULTS

For multiple-choice questions, percentages in this note are expressed as the share of respondents selecting each option; totals may therefore exceed 100%. Where the supplied summary does not provide a complete breakdown, categories are reported as not disaggregated rather than inferred.

The findings should be treated as indicative rather than statistically representative of every institution or resident in South Banat. Their principal value is to identify issues requiring verification, inter-institutional discussion and follow-up action.

Governance note

The South Banat Administrative District is used as a territorial frame for analysis. Implementation authority rests with competent provincial authorities, the City of Pančevo, the municipalities of Vršac, Bela Crkva, Alibunar, Kovačica, Kovin, Opovo and Plandište, public enterprises, utilities, sectoral institutions and other legally responsible bodies. Recommendations should therefore be assigned through an agreed inter-institutional mechanism rather than attributed to the administrative district as a separate level of self-government.

1. Climate risk profile and vulnerable sectors

1.1 Main climate risks

Hazard	Share of respondents
Drought	60.0%
Storms	46.7%
Floods	26.7%
Heatwaves	6.7%
Other or unspecified in the source summary	6.7%
Landslides	0.0%

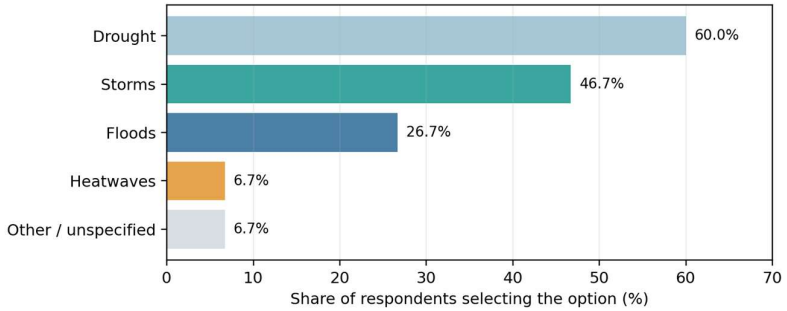


Figure 1. Climate hazards selected by respondents (multiple choice).

Interpretation: South Banat has a compound drought–storm profile, with flooding also relevant. Planning should link agricultural and water resilience with storm preparedness, drainage, infrastructure protection and continuity of essential services. Heat risk should still be checked against meteorological and health evidence.

1.2 Status of climate risk assessment

Response	Share
Updated assessment exists	6.7%
Assessment partially updated	40.0%
Assessment does not exist	6.7%
Do not know	46.7%

Only one respondent confirmed an updated assessment. A coordinated review should verify existing assessments, their coverage, methods and use in planning.

1.3 Most vulnerable sectors

Reported sector	Share of respondents
Agriculture	93.3%
Water management	20.0%
Healthcare	20.0%
Infrastructure	20.0%

Agriculture is the clear priority sector. The response should connect farm resilience with water, drainage, infrastructure, health preparedness and continuity of services.

2. Adaptation planning and institutional capacity

2.1 Integration and visibility of adaptation measures

Indicator	Result	Interpretation
Adaptation measures fully integrated	6.7%	Full integration is rarely confirmed.
Measures partially integrated	26.7%	Some respondents report partial integration.
Measures not integrated	6.7%	One respondent reports no integration.
Do not know whether measures are integrated	60.0%	The largest response category; major visibility gap.
No information on measures currently in place	73.3%	Most respondents could not identify active measures.
Remaining responses on measures in place	26.7%	The supplied summary does not describe these responses or verify measure status.

IMPORTANT INTERPRETATION

The survey demonstrates low visibility and uneven knowledge of adaptation action. It does not establish that no measures exist. A verified inventory of plans, projects, investments, responsible institutions and implementation status is required.

2.2 Barriers to implementation

Reported barrier	Share of respondents
Financial deficit	66.7%
Data deficit	26.7%
Insufficient institutional capacity	26.7%
Lack of public support	26.7%
Other or not disaggregated in the source summary	20.0%

Financial constraints are the most frequently reported explicit barrier, but data, institutional capacity and public support are also material. The appropriate response is therefore a combined package: clear ownership, verified data, technical assistance, stakeholder engagement and a pipeline of projects mature enough to compete for available funds.

2.3 Training and support needs

Training status	Share
Training programmes confirmed	20.0%
Training programmes reported as absent	26.7%
Do not know whether training exists	53.3%
Requested support	**Share of respondents**
Professional training	60.0%
Technical support	53.3%
Financial mechanisms	40.0%
Other support categories not disaggregated	26.7%

3. Public awareness and planning priorities

3.1 Public awareness

Assessment	Share
Public is sufficiently informed	13.3%
Public is partially informed	40.0%
Public is not informed	46.7%

Respondents generally perceive public awareness as insufficient. Communication should move beyond general information and provide practical, locally relevant guidance for farmers, households, schools, employers, health services, utilities and other groups exposed to drought, storms and flooding.

3.2 Preferred communication and engagement channels

Channel	Share of respondents
Local workshops	46.7%
Media campaigns	46.7%
School and educational programmes	46.7%
Public hearings	20.0%

The balanced use of workshops, media and educational programmes supports a mixed communication approach. Media can provide reach, while workshops, schools and public hearings enable explanation, feedback and participation. Communication should be linked to seasonal decisions, warning thresholds and clearly assigned response actions.

3.3 Improvement of local plans

Finding	Result
Respondents supporting improvement of existing plans	100%
Respondents leaving the suggestion field blank	80.0%
Main themes in submitted suggestions	Targeted workshops linked with financial support; more specialised educational lectures; stronger public and institutional awareness

There is unanimous support for improving existing plans, but most respondents did not submit a concrete proposal. A facilitated process should provide evidence, technical options and project templates while retaining local ownership.

3.4 Strategic priorities

1. Verify assessments, measures, datasets, training activities, responsibilities and funding sources across the eight local government areas.
2. Integrate drought, storm and flood risks into development, spatial, agricultural, water, health, emergency and infrastructure plans.
3. Build professional and technical capacity, then convert verified priorities into a ranked adaptation project pipeline supported by financing and coordinated public communication.

4. Strategic assessment and 12-month action plan

4.1 SWOT assessment

STRENGTHS	WEAKNESSES
• Unanimous support for improving existing plans. • Clear agreement on agricultural vulnerability and the importance of drought and storms. • Workshops, media and education are all recognised communication channels.	• Limited visibility of assessments, measures and training. • Most respondents cannot identify active measures. • Public awareness is generally assessed as insufficient. • Financial, data and institutional barriers overlap.
OPPORTUNITIES	**THREATS**
• Strong demand for professional training and technical support. • Potential to connect agricultural, water, health, emergency and infrastructure measures. • Provincial, local and external funding can support a coordinated multi-hazard project pipeline.	• Drought, storms and flooding may affect agriculture, settlements, infrastructure and services simultaneously. • Fragmented information may delay preventive decisions. • Insufficient project readiness may prevent access to available funding.

4.2 Recommended 12-month action plan

Period	Priority action	Lead arrangement	Expected output
Months 1–3	Assessment, measure and responsibility audit	Inter-institutional working group under an appropriate provincial or local mandate	Verified register of assessments, measures, datasets, training, owners, funding sources and implementation status
Months 4–6	Technical capacity building and project preparation	Local governments with scientific, utility, agricultural, health, emergency and financial partners	Training modules, technical gap report, data protocol and initial project concepts for drought, storms, flooding and sector resilience
Months 7–12	Plan updates, project pipeline and public communication	Named plan and project owners with sectoral partners	Plan amendments, three to five mature project concepts, indicators, communication actions and financing routes

4.3 Minimum outputs for the first year

- A shared inventory and responsibility matrix for priority climate risks and adaptation measures.
- A minimum shared dataset with clear update, access and quality-control responsibilities.
- At least two practical training modules on climate-risk integration, technical data use and project preparation.
- Three to five mature adaptation project concepts with indicative budgets, owners and funding routes.
- A coordinated public communication package linking drought, storm and flood-risk information with practical actions.

RECOMMENDED IMMEDIATE DECISION

Establish a time-limited inter-institutional working group to validate the survey findings, complete the assessment and measure inventory, define multi-hazard priorities and assign responsibilities before major funding applications or plan revisions are prepared.

CLIMACHANGE | PHASE 3

DISTRICT POLICY NOTE – SOUTH BAČKA ADMINISTRATIVE DISTRICT

Climate Risk and Adaptation Priorities

Evidence-based note for policy and decision makers

12	4
local government areas	survey sections

City of Novi Sad and the municipalities of South Bačka

PURPOSE OF THE POLICY NOTE

This policy note translates stakeholder survey findings into a concise district risk profile, identifies institutional and planning gaps, and presents priority adaptation actions for competent provincial and local authorities, public enterprises, professional institutions and other relevant actors in the South Bačka Administrative District.

June 2026

Autonomous Province of Vojvodina, Republic of Serbia

Executive summary

The survey indicates a diversified climate-risk profile in South Bačka. Drought was selected by 64.3% of respondents, while heatwaves and storms were each selected by 50.0% and floods by 42.9%. Agriculture is perceived as the most vulnerable sector, but the distribution of hazards requires a multi-hazard approach that also considers water systems, settlements, infrastructure, public health and protected ecological areas.

Institutional awareness is uneven. Eleven respondents did not know whether an updated climate-risk assessment exists, nine did not know whether adaptation measures are integrated into current planning documents, eight reported no information on measures in place and nine did not know whether relevant training programmes exist. At the same time, respondents identified examples such as afforestation, river-level monitoring, irrigation, adjusted sowing dates, drought-resistant crops and cleaner municipal vehicles. These examples should be verified and connected to formal plans, budgets and monitoring systems.

The principal policy need is therefore not a single isolated investment, but a coordinated programme that combines evidence consolidation, institutional capacity, inter-municipal learning and the integration of proven field practices into official planning. The strong support for improving existing plans provides a clear mandate for such a process.

Key findings at a glance

64.3%	85.7%	78.6%	78.6%
selected drought	identified agriculture as vulnerable	do not know whether an updated assessment exists	support improvement of plans

Methodological and data-quality note

HOW TO READ THE RESULTS

For multiple-choice questions, percentages in this note are expressed as the share of respondents selecting each option; totals may therefore exceed 100%. Where the supplied summary does not provide a complete breakdown, categories are explicitly reported as not disaggregated rather than inferred. One support-needs table retains the reported share of all selections because the source did not provide the underlying category counts.

The findings should be treated as indicative rather than statistically representative of every institution or resident in South Bačka. Their principal value is to identify issues requiring verification, inter-institutional discussion and follow-up action.

Governance note

The South Bačka Administrative District is used as a territorial frame for analysis. Implementation authority rests with competent provincial authorities, the City of Novi Sad, the municipalities in the district, public enterprises, utilities, sectoral institutions and other legally responsible bodies. Recommendations should therefore be assigned through an agreed inter-institutional mechanism rather than attributed to the administrative district as a separate level of self-government.

1. Climate risk profile and vulnerable sectors

1.1 Main climate risks

Hazard	Share of respondents
Drought	64.3%
Heatwaves	50.0%
Storms	50.0%
Floods	42.9%
Other	7.1%
Landslides	0.0%

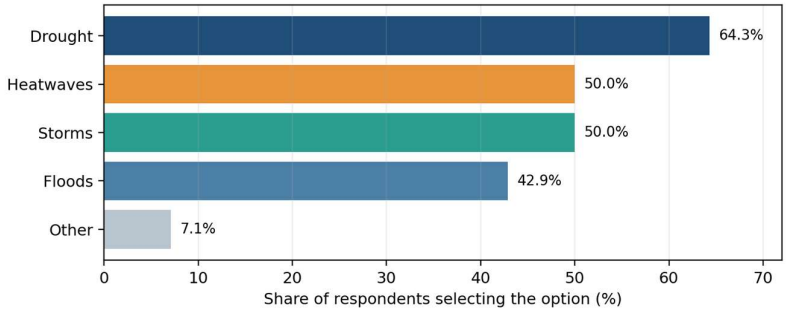


Figure 1. Climate hazards selected by respondents (multiple choice).

Interpretation: South Bačka has a genuine multi-hazard profile. Drought is the most frequently selected concern, but heatwaves, storms and floods are also prominent. Adaptation planning should therefore combine agricultural and water resilience with urban heat management, drainage, flood preparedness, ecosystem protection and continuity of essential services.

1.2 Status of climate risk assessment

Response	Share
Updated assessment confirmed	0.0%
Do not know	78.6%
Other responses: assessment missing or partially updated	21.4%

No respondent confidently confirmed an updated assessment. A coordinated review should verify which assessments exist, whether they are current, how they address multiple hazards and how their results are used in planning and budgeting.

1.3 Most vulnerable sectors

Reported sector	Share of respondents
Agriculture	85.7%
Protected ecological areas	7.1%

Agriculture is the clear priority sector. The supplied summary does not disaggregate the remaining sector selections, so additional verification is required. Protected ecological areas should be included in the assessment because drought, heat and hydrological changes can affect habitats, ecosystem services and the resilience of surrounding communities.

2. Adaptation planning and institutional capacity

2.1 Integration and visibility of adaptation measures

Indicator	Result	Interpretation
Adaptation measures fully integrated	7.1%	Full integration is rarely confirmed.
Do not know whether measures are integrated	64.3%	The dominant response; major visibility gap.
Remaining integration responses	28.6%	The source summary does not disaggregate partial and negative responses.
No information on measures currently in place	57.1%	More than half of respondents could not identify active measures.
Respondents providing examples of measures	42.9%	Examples include afforestation, river monitoring, irrigation, adjusted sowing dates, drought-resistant crops and cleaner vehicles; status requires verification.

IMPORTANT INTERPRETATION

The survey demonstrates low visibility and uneven knowledge of adaptation action. It does not establish that measures are absent. The reported examples should be verified, assigned to responsible institutions and connected to plans, budgets, indicators and public information.

2.2 Barriers to implementation

Reported barrier	Share of respondents
Insufficient institutional capacity	50.0%
Financial deficit	35.7%
Do not know	35.7%
Data deficit	21.4%
Lack of public support	14.3%

Institutional capacity is the most frequently selected explicit barrier, exceeding financial constraints. This points to the need for clearer procedures, trained personnel, shared data, stronger coordination and project-development support alongside access to finance.

2.3 Training and support needs

Training status	Share
Do not know whether training exists	64.3%
Other responses, not disaggregated in the source	35.7%

Reported share of all support selections
28.6%
22.9%
20.0%
28.5%

The pattern supports a combined capacity programme of practical training, peer exchange, technical assistance and project preparation.

3. Public awareness and planning priorities

3.1 Public awareness

Assessment	Share
Public is sufficiently informed	14.3%
Public is partially informed	50.0%
Public is not informed	28.6%
Do not know	7.1%

Most respondents consider public awareness incomplete. Communication should provide practical and locally relevant guidance for farmers, households, schools, employers, health services, utilities and managers of protected areas, with messages linked to seasonal decisions and warning thresholds.

3.2 Preferred communication and engagement channels

Channel	Share of respondents
Media campaigns	57.1%
Local workshops	50.0%
School and educational programmes	42.9%
Public hearings	21.4%

The results favour a mixed communication model. Media can provide reach, while workshops, educational programmes and public hearings support explanation, feedback and participation. Communication should also make verified adaptation measures and responsibilities visible to institutional staff and the public.

3.3 Improvement of local plans

Finding	Result
Respondents supporting improvement of existing plans	78.6%
Remaining responses	21.4%; not disaggregated in the source summary
Policy implication	A strong majority supports revision, but the process should be based on verified evidence, clearly assigned responsibilities and structured participation.

The survey provides a clear mandate to improve current risk-management plans. The revision process should connect existing local measures with a common multi-hazard framework and translate priorities into budgets, projects, indicators and implementation responsibilities.

3.4 Strategic priorities

1. Verify and consolidate existing assessments, measures, datasets, training activities, responsibilities and funding sources across the district.
2. Integrate drought, heatwave, storm and flood risks into development, spatial, agricultural, water, health, emergency, environmental and infrastructure plans.
3. Strengthen institutional capacity and inter-municipal learning, then convert verified local practices into a ranked and finance-ready adaptation project pipeline.

4. Strategic assessment and 12-month action plan

4.1 SWOT assessment

STRENGTHS	WEAKNESSES
• Clear recognition of a diversified multi-hazard profile. • Strong identification of agriculture as the priority vulnerable sector. • Respondents reported several practical local adaptation examples. • A strong majority supports improving existing plans.	• Very limited visibility of updated assessments and plan integration. • More than half cannot identify measures currently in place. • Institutional capacity is the leading explicit barrier. • Training activities and sector information are insufficiently visible.
OPPORTUNITIES	**THREATS**
• Existing local practices can be verified and scaled through common standards. • Strong demand for training and knowledge exchange supports an inter-municipal learning programme. • A multi-hazard project portfolio can combine agricultural, water, urban, ecosystem and infrastructure measures. • Established media, workshop and education channels can support participation.	• Drought, heatwaves, storms and floods may create compound impacts across agriculture, settlements and services. • Fragmented information may delay preventive decisions and duplicate investments. • Insufficient institutional readiness may limit effective use of available funding. • Uncoordinated measures may shift risk or create maladaptation.

4.2 Recommended 12-month action plan

Period	Priority action	Lead arrangement	Expected output
Months 1–3	Assessment, measure and data audit	Time-limited inter-institutional working group under an appropriate provincial or local mandate	Verified inventory of assessments, measures, datasets, owners, funding sources and implementation status; agreed responsibility matrix
Months 4–7	Capacity building and inter-municipal exchange	Local governments with scientific, utility, agricultural, environmental, health, emergency and financial partners	Practical training modules, peer-learning sessions, data protocol and technical gap report
Months 8–12	Plan integration, project pipeline and communication	Named plan and project owners with relevant sectoral partners	Plan amendments, three to five mature project concepts, indicators, communication actions and financing routes

4.3 Minimum outputs for the first year

- A shared multi-hazard evidence base and responsibility matrix covering drought, heatwaves, storms and floods.
- A verified register of existing adaptation measures, including implementation status, responsible bodies and indicators.
- At least two practical training modules and one structured inter-municipal exchange programme.
- Three to five finance-ready adaptation project concepts with indicative budgets, owners and funding routes.
- A coordinated communication package that makes verified risks, measures and responsibilities visible to institutions and the public.

RECOMMENDED IMMEDIATE DECISION

Establish a time-limited South Bačka climate adaptation working group to validate the survey findings, complete the assessment and measure inventory, define common multi-hazard priorities and assign responsibilities before major plan revisions or funding applications are prepared.

CLIMACHANGE | PHASE 3

DISTRICT POLICY NOTE – WEST BAČKA ADMINISTRATIVE DISTRICT

Climate Risk and Adaptation Priorities

Evidence-based note for policy and decision makers

4	4
local government areas	survey sections

Sombor • Apatin • Kula • Odžaci

PURPOSE OF THE POLICY NOTE

This policy note translates stakeholder survey findings into a concise district risk profile, identifies institutional and planning gaps, and sets out priority adaptation actions for competent provincial and local authorities, public enterprises, professional institutions and other relevant actors in the West Bačka Administrative District.

June 2026

Autonomous Province of Vojvodina, Republic of Serbia

Executive summary

The survey identifies drought and heatwaves as the dominant climate concerns in West Bačka. Drought was selected by 76.5% of respondents and heatwaves by 44.1%. Agriculture is overwhelmingly perceived as the most vulnerable sector, followed by water management, infrastructure and health.

The findings also reveal limited visibility of climate-risk assessment and adaptation work. Only four respondents confirmed the existence of an updated risk assessment, while half of the sample could not confirm whether adaptation measures are integrated into current planning documents. Twenty-five respondents reported that they had no information on measures currently being implemented.

These results should be interpreted as evidence of fragmented information flows and uneven institutional awareness, not as proof that no assessments, measures or training activities exist. The immediate priority is to verify existing documents and actions, assign responsibilities, and connect technical capacity building with project preparation and financing.

Key findings at a glance

76.5%	94.1%	73.5%	79.4%
selected drought	identified agriculture as vulnerable	reported no information on active measures	support improvement of plans

Methodological and data-quality note

HOW TO READ THE RESULTS

For multiple-choice questions, percentages in this note are expressed as the share of respondents selecting each option; totals may therefore exceed 100%. Where the supplied summary does not provide a complete breakdown, the missing categories are reported as not disaggregated rather than inferred.

The findings should be treated as indicative rather than statistically representative of every institution or resident in West Bačka. Their principal value is to identify issues requiring verification, inter-institutional discussion and follow-up action.

Governance note

The West Bačka Administrative District is used as a territorial frame for analysis. Implementation authority rests with competent provincial authorities, the City of Sombor and the municipalities of Apatin, Kula and Odžaci, public enterprises, utilities, sectoral institutions and other legally responsible bodies. Recommendations should therefore be assigned through an agreed inter-institutional mechanism rather than attributed to the administrative district as a separate level of self-government.

1. Climate risk profile and vulnerable sectors

1.1 Main climate risks

Hazard	Share of respondents
Drought	76.5%
Heatwaves	44.1%
Storms	20.6%
Floods	14.7%
Landslides	8.8%

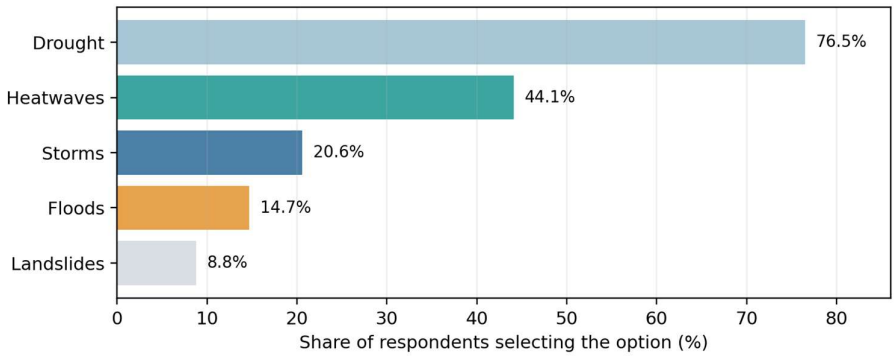


Figure 1. Climate hazards selected by respondents (multiple choice).

Interpretation: West Bačka has a clear drought-and-heat risk profile. Planning should prioritise agricultural water security, soil moisture, crop resilience, public health and continuity of essential services during prolonged hot and dry periods. Storm, flood and landslide risks remain relevant for localised planning, particularly where drainage, embankments, canals, settlements or transport infrastructure may be affected.

1.2 Status of climate risk assessment

Response	Share
Updated assessment exists	11.8%
Assessment is partially updated	29.4%
No updated assessment exists	14.7%
Do not know	44.1%

Almost half of respondents could not confirm the status of climate-risk assessment, while only four confirmed that an updated assessment exists. A coordinated document review is needed to identify valid assessments, their dates, geographic coverage, methods and use in planning and investment decisions.

1.3 Most vulnerable sectors

Reported sector	Share of respondents
Agriculture	94.1%
Water management	23.5%
Infrastructure	11.8%
Health	8.8%
Other or unclassified source selection	2.9%

2. Adaptation planning and institutional capacity

2.1 Integration and visibility of adaptation measures

Indicator	Result	Interpretation
Adaptation measures fully integrated	8.8%	A small group confirmed full integration.
Do not know whether measures are integrated	50.0%	The largest response category; major visibility gap.
Other integration responses	41.2%	Partially integrated and not integrated categories were not disaggregated in the supplied summary.
No information on measures currently in place	73.5%	Most respondents could not identify active measures.
Specific measure mentioned	Landslide rehabilitation	The only concrete measure explicitly noted in the source summary; its scope and status require verification.

IMPORTANT INTERPRETATION

The survey demonstrates low visibility and uneven knowledge of adaptation action. It does not establish that no measures exist. A verified inventory of plans, projects, investments, responsible institutions and implementation status is required.

2.2 Barriers to implementation

Reported barrier	Share of respondents
Financial deficit	58.8%
Insufficient institutional capacity	35.3%
Data deficit	23.5%
Other or not disaggregated in source summary	Not assigned to a category

Financial constraints are the most frequently reported explicit barrier, followed by institutional capacity and data availability. The appropriate response is not funding alone: institutions also need clear ownership, reliable data, technical support and a pipeline of projects mature enough to compete for available funds.

2.3 Training and support needs

Training status	Result
Respondents confirming that a training programme exists	44.1%
Respondents reporting that no programme exists	26.5%
Respondents who do not know whether training exists	29.4%

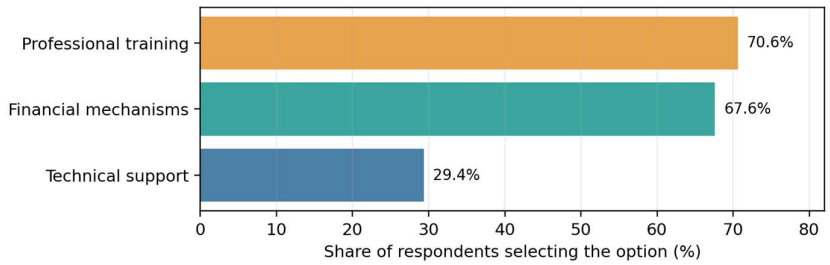


Figure 2. Most frequently selected support needs with reported counts (multiple choice).

Professional training and financial mechanisms are the strongest reported needs, followed by technical support. The source also mentions guidelines without a count; this should be checked against the underlying response file.

3. Public awareness and planning priorities

3.1 Public awareness

Assessment	Share
Public is sufficiently informed	11.8%
Public is partially informed	41.2%
Public is not informed	47.1%

Respondents generally perceive public awareness as insufficient. Communication should therefore move beyond general information and provide practical, locally relevant guidance for farmers, households, schools, employers, health services and other groups exposed to drought and heat.

3.2 Preferred communication and engagement channels

Channel	Share of respondents
Media campaigns	55.9%
School and educational programmes	20.6%
Local workshops	20.6%
Qualitative comment	Public inclusion described as absent

Media campaigns provide broad reach, but they should be combined with educational programmes and local workshops that allow questions, feedback and practical learning. Communication should be linked to seasonal decisions, warning thresholds and clearly assigned response actions.

3.3 Improvement of local plans

Finding	Result
Respondents supporting improvement of existing plans	79.4%
Other responses	20.6%; categories not disaggregated in the source summary
Respondents providing a concrete improvement proposal	8.8%

There is strong support for improving existing plans, but only three respondents provided suggestions. The explicit themes were specialised training and stronger human resources, preventive measures, and protective infrastructure. This pattern supports a facilitated planning process that provides evidence, technical options and project templates while retaining local ownership.

3.4 Strategic priorities

1. Compile a verified inventory of assessments, adaptation measures, projects, datasets, responsibilities and funding sources across all four local government areas.
2. Integrate drought, heat and connected water risks into development, spatial, agricultural, water-management, health, emergency-management and infrastructure plans.
3. Establish a shared minimum dataset for climate, water, soil, agriculture, infrastructure and vulnerable groups, with named data owners.
4. Create a recurring capacity-building programme that combines professional training, technical mentoring, project preparation and a ranked, finance-ready adaptation project pipeline.

4. Strategic assessment and 12-month action plan

4.1 SWOT assessment

STRENGTHS	WEAKNESSES
• Strong agreement on the principal drought, heat and agricultural risks. • Broad support for improving existing plans.	• Limited visibility of assessments and adaptation measures. • Few concrete proposals and uneven awareness of training activities.
OPPORTUNITIES	**THREATS**
• Clear demand for professional training and financial mechanisms. • Potential to build a shared district project and data pipeline.	• Compound drought and heat may affect agriculture, water systems, settlements and services simultaneously. • Fragmented information and insufficient project readiness may delay preventive action.

4.2 Recommended 12-month action plan

Period	Priority action	Lead arrangement	Expected output
Months 1–3	Assessment, measure and responsibility audit	Inter-institutional working group under an appropriate provincial or local mandate	Verified register of assessments, measures, datasets, owners and implementation status
Months 4–6	Capacity building and project preparation	The City of Sombor and the municipalities of Apatin, Kula and Odžaci, with scientific, utility, agricultural and financial partners	Training modules, technical gap report and initial project concepts
Months 7–12	Plan updates and adaptation project pipeline	Named plan and project owners with sectoral partners	Plan amendments, three to five mature project concepts, indicators and financing routes

4.3 Minimum outputs for the first year

- A shared inventory and responsibility matrix for priority climate risks and adaptation measures.
- A minimum shared dataset with clear update, access and quality-control responsibilities.
- At least two practical training modules on climate-risk integration and project preparation.
- Three to five mature adaptation project concepts with indicative budgets, owners and funding routes.

RECOMMENDED IMMEDIATE DECISION

Establish a time-limited inter-institutional working group to validate the survey findings, complete the assessment and measure inventory, and assign responsibilities before major funding applications or plan revisions are prepared.

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datum	07.04.2026
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link	EDUKATIVNI SEMINAR O KLIMATSKIM PROMENAMA – Војвођанске вести

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link	EDUKATIVNI SEMINAR O KLIMATSKIM PROMENAMA - VOJVOĐANSKE VESTI

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link	JAČANJE KAPACITETA LOKALNIH ZAJEDNICA KROZ CLIMACHANGE SEMINAR - VOJVOĐANSKE VESTI

medium	vojvodjanske.rs
date	24.04.2026.
title	KLIMATSKE PROMENE U FOKUSU EDUKATIVNOG SKUPA U OKVIRU CLIMAAX PROGRAMA
link	KLIMATSKE PROMENE U FOKUSU EDUKATIVNOG SKUPA U OKVIRU CLIMAAX PROGRAMA – Војвођанске вести

medium	gradjanskilist.rs
date	24.04.2026.
title	KLIMATSKE PROMENE U FOKUSU EDUKATIVNOG SKUPA U OKVIRU CLIMAAX PROGRAMA
link	KLIMATSKE PROMENE U FOKUSU EDUKATIVNOG SKUPA U OKVIRU CLIMAAX PROGRAMA – ГРАЂАНСКИ ЛИСТ

medium	vojvodjanskeves ti.rs
date	24.04.2026.
title	KLIMATSKE PROMENE U FOKUSU EDUKATIVNOG SKUPA U OKVIRU CLIMAAX PROGRAMA
link	KLIMATSKE PROMENE U FOKUSU EDUKATIVNOG SKUPA U OKVIRU CLIMAAX PROGRAMA - VOJVOĐANSKE VESTI

medium	vojvodjanske.rs
date	15.05.2026.
title	STRUČNJACI O SUŠAMA I KLIMATSKIM RIZICIMA: EDUKACIJA KLJUČ PREVENCIJE
link	STRUČNJACI O SUŠAMA I KLIMATSKIM RIZICIMA: EDUKACIJA KLJUČ PREVENCIJE – Војвођанске вести

medium	gradjanskilist.rs
date	15.05.2026.
title	STRUČNJACI O SUŠAMA I KLIMATSKIM RIZICIMA: EDUKACIJA KLJUČ PREVENCIJE
link	STRUČNJACI O SUŠAMA I KLIMATSKIM RIZICIMA: EDUKACIJA KLJUČ PREVENCIJE – ГРАЂАНСКИ ЛИСТ

medium	vojvodjanskeves ti.rs
date	15.05.2026.
title	STRUČNJACI O SUŠAMA I KLIMATSKIM RIZICIMA: EDUKACIJA KLJUČ PREVENCIJE

link	STRUČNJACI O SUŠAMA I KLIMATSKIM RIZICIMA: EDUKACIJA KLJUČ PREVENCIJE - VOJVOĐANSKE VESTI
medium	vojvodjanske.rs
date	22.05.2026.
title	ODRŽAN SEMINAR O UPRAVLJANJU KLIMATSKIM RIZICIMA U AP VOJVODINI
link	ODRŽAN SEMINAR O UPRAVLJANJU KLIMATSKIM RIZICIMA U AP VOJVODINI – Војвођанске вести
medium	gradjanskilist.rs
date	22.05.2026.
title	ODRŽAN SEMINAR O UPRAVLJANJU KLIMATSKIM RIZICIMA U AP VOJVODINI
link	ODRŽAN SEMINAR O UPRAVLJANJU KLIMATSKIM RIZICIMA U AP VOJVODINI – ГРАЂАНСКИ ЛИСТ
medium	vojvodjanskeves ti.rs
date	22.05.2026.
title	ODRŽAN SEMINAR O UPRAVLJANJU KLIMATSKIM RIZICIMA U AP VOJVODINI
link	ODRŽAN SEMINAR O UPRAVLJANJU KLIMATSKIM RIZICIMA U AP VOJVODINI - VOJVOĐANSKE VESTI
medium	vojvodjanske.rs
date	29.05.2026.
title	CLIMACHANGE PROJEKAT: EDUKACIJA O KLIMATSKIM IZAZOVIMA I REŠENJIMA
link	CLIMACHANGE PROJEKAT: EDUKACIJA O KLIMATSKIM IZAZOVIMA I REŠENJIMA – Војвођанске вести
medium	gradjanskilist.rs
date	29.05.2026.
title	CLIMACHANGE PROJEKAT: EDUKACIJA O KLIMATSKIM IZAZOVIMA I REŠENJIMA
link	CLIMACHANGE PROJEKAT: EDUKACIJA O KLIMATSKIM IZAZOVIMA I REŠENJIMA – ГРАЂАНСКИ ЛИСТ
medium	vojvodjanskeves ti.rs
date	29.05.2026.

title	CLIMACHANGE PROJEKAT: EDUKACIJA O KLIMATSKIM IZAZOVIMA I REŠENJIMA
link	CLIMACHANGE PROJEKAT: EDUKACIJA O KLIMATSKIM IZAZOVIMA I REŠENJIMA - VOJVOĐANSKE VESTI

medium	vojvodjanske.rs
date	05.06.2026.
title	U GRADSKOJ KUĆI ODRŽAN EDUKATIVNI SEMINAR O PRILAGOĐAVANJU KLIMATSKIM PROMENAMA
link	U GRADSKOJ KUĆI ODRŽAN EDUKATIVNI SEMINAR O PRILAGOĐAVANJU KLIMATSKIM PROMENAMA – Војвођанске вести

medium	gradjanskilist.rs
date	05.06.2026.
title	U GRADSKOJ KUĆI ODRŽAN EDUKATIVNI SEMINAR O PRILAGOĐAVANJU KLIMATSKIM PROMENAMA
link	U GRADSKOJ KUĆI ODRŽAN EDUKATIVNI SEMINAR O PRILAGOĐAVANJU KLIMATSKIM PROMENAMA – ГРАЂАНСКИ ЛИСТ

medium	vojvodjanskevesti.rs
date	05.06.2026.
title	U GRADSKOJ KUĆI ODRŽAN EDUKATIVNI SEMINAR O PRILAGOĐAVANJU KLIMATSKIM PROMENAMA
link	U GRADSKOJ KUĆI ODRŽAN EDUKATIVNI SEMINAR O PRILAGOĐAVANJU KLIMATSKIM PROMENAMA - VOJVOĐANSKE VESTI

УПИТНИК: Подршка климатској адаптацији на регионалном и локалном нивоу

Увод и упутство за попуњавање

Овај упитник има за циљ анализу постојећег стања и потреба у области климатске адаптације на регионалном и локалном нивоу. Прикупљени одговори помоћи ће у идентификацији приоритетних акција, јачању капацитета за адаптацију и унапређењу постојећих планова и система управљања ризицима.

Молимо Вас да на питања одговорите што прецизније, на основу расположивих података и искуства. Уколико нисте сигурни или немате релевантне информације, можете одабрати опцију:
☐ Не знам / Немам информацију
Анкета је анонимна.
Хвала Вам на сарадњи.

1. Идентификација ризика и приоритета

1.1. Који су главни климатски ризици у вашем региону/локалној заједници?

☐ Поплаве
☐ Суше
☐ Топлотни таласи
☐ Клизишта
☐ Олује
☐ Друго: _____
☐ Не знам / Немам информацију

1.2. Да ли постоји ажурирана процена климатских ризика?

☐ Да
☐ Не
☐ Делимично
☐ Не знам / Немам информацију

1.3. Које секторе сматрате најугроженијим?

☐ Пољопривреда
☐ Водопривреда
☐ Здравство
☐ Инфраструктура
☐ Енергетика
☐ Друго: _____
☐ Не знам / Немам информацију

2. Идентификација и планирање акција адаптације

2.1. Да ли су мере адаптације интегрисане у постојеће планове развоја?

☐ Да
☐ Не
☐ Делимично
☐ Не знам / Немам информацију

2.2. Које мере адаптације су већ у примени? (кратак опис)

_____
☐ Немам информацију

2.3. Које су главне препреке за спровођење мера адаптације?

☐ Недостатак финансија
☐ Недостатак података
☐ Недовољни институционални капацитети
☐ Недостатак јавне подршке
☐ Друго: _____
☐ Не знам / Немам информацију

3. Изградња капацитета

3.1. Да ли постоје обуке или програми јачања капацитета у области климатске адаптације?

☐ Да
☐ Не
☐ Не знам / Немам информацију

3.2. Које врсте подршке су најпотребније?

☐ Стручне обуке
☐ Техничка подршка
☐ Финансијски механизми
☐ Размена добрих пракси
☐ Развој алата и смерница
☐ Не знам / Немам информацију

4. Подизање свести и унапређење планова

4.1. Да ли је јавност довољно информисана о климатским ризицима?

☐ Да
☐ Не
☐ Делимично
☐ Не знам / Немам информацију

4.2. На који начин се врши информисање и укључивање јавности?

☐ Јавне расправе
☐ Радионице
☐ Медијске кампање
☐ Образовни програми
☐ Друго: _____
☐ Не знам / Немам информацију

4.3. Да ли је потребно унапредити постојеће регионалне и локалне планове управљања ризицима?

☐ Да
☐ Не

☐ Нисам сигуран/на

☐ Не знам / Немам информацију

4.4. Наведите предлоге за унапређење:

_____

☐ Немам информацију

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Акроним: CLIMACHANGE
Локација: Нови Сад, Покрајински завод за заштиту природе, Радничка 20 а
Датум: 19.06.2026

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
1.	TAMARA STOJANOVIĆ	PS ZA URBANIZAM I ZZS	SAVETNIK	tamara.stojanovic@vojvodina.gov.rs 487-4212	
2.	OLIVIA TEŠIĆ	— II —	- II -	olivia.tesic@vojvodina.gov.rs	
3.	KORIN SERČIĆ	PU MIH. FIN. NOVI SAD	SAVETNIK	korin.serci@gmail.com	
4.	LORAND VIG	PS ZA URB I ZZS	SAVETNIK	Lorand.Vig@vojvodina.gov.rs	
5.	SANJA SREMAC	MINISTARSTVO FINANSIJA	VIŠI SAVETNIK	sremacsanja@gmail.com	
6.	СНЕЖАНА СЕКУЈСКИ	Министарство фин.	САВЕТНИК	snezana.secujskia@pars.gov.	
7.	IVANA ŽUKIĆ	PU MIN. FIN. NOVI SAD	IZVRŠILAC	ivana.zukic2011@gmail.com	
8.	MIRJANA STOJANOVIĆ	MINISTARSTVO FINANSIJA	SAVETNIK	mirjana.mira.2704@pars.gov.rs	
9	TANJA ŠIKOPARIJA	PSta mb. IZŽS	saveтник	tsikoparija@gmail.com	
10.	DRAGAN ĐURICA	PS ZA URB IZŽS	POMOĆNIK	dragan.djurica@vojvodina.gov.rs	

Potpisivanjem ovog formulara, dajem saglasnost da se fotografija ili video zapis na kojem se pojavljujem a koji je snimljen na ovom događaju može javno objaviti.
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Датум: 19.06.2026

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11	САЊА ШКИЉЕВИЋ	ПС ЗА ЗПС. И ЗЖС	ВИШИ САВЕТНИК	Sanja.skiljevic@vojvodina.gov.rs	
12	Milena Neodykov	PS za urbanizam i ZŽS	lice angažovano po ugovoru o privremenim i povremenim poslovima	milena.neodykov@vojvodina.gov.rs	
13	СИНИША САВКОВИЋ	ПС ЗА УРБ. И ЗЖС	МЛАЂИ САВЕТНИК	SINISASAVKOVIC@VOJVODINA.GOV.RS	
14	МАРИЈА КУЛУНЏИЋ	ПС ЗА УРБАНИЗАМ И ЗЖС	САВЕТНИК	MARIJA.KULUNDZIC@VOJVODINA.GOV.RS	
15	Nataša Knežević	PS za urb i ZŽS	sav. savetnik	NATASA.KNEZEVIC@VOJVODINA.GOV.RS	
16	Александар Угљешић	ПС за урбанизам и ЗЖС	САВЕТНИК	aleksandar.ugljesic@vojvodina.gov.rs	
17	Biljana Jolović Vojnović	Ps za energetiku	Viši REFERENT	biljana.jolesic@vojvodina.gov.rs	
18	Dijana Vlašnjić	PS za energetiku	KNJIGOVODSTVENI ODELJENJA	DIJANA.VLASNJIC@VOJVODINA.GOV.RS	
19	ZORICA STOJANOVIĆ	UPRAVA ZA ZAJEDNIČKE POSLOVE	KONOBAR	ZORICASTOJANOVIC96@GMAIL.COM	
20	MILICA ANTIĆ	UPRAVA ZA ZAJEDNIČKE POSLOVE	KONOBAR	milica.antic74@gmail.com	

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21	МИОДРАГ НАЧАЧКИ	САВЕТНИК ЗА ВАНРЕДНЕ СИТУАЦИЈЕ ← СЕКРЕТАРИЈАТ → ПОКРАЈИНСКЕ ВЛАДЕ		MIODRAG.NACACKI@VOJVODINA.GOV.RS	
22	Ana Crvenkov	PS za urban. i zašt. živ.	Savetnik	ana.crvenkov@vojvodina.gov.rs	
23	Anja Đoković	— 11 —	САВЕТНИК	anja.djokovic@vojvodina.gov.rs	
24	Olivera Vujičić			olivera.vucinic@vojvodina.gov.rs	
25	MIŠANOVIĆ MLADEN	SEKRETARIJAT POKRAJINSKE VLADE	SAVETNIK	MLADEN.MIŠANOVIĆ@VOJVODINA.GOV.RS	
26	БАЊАНИН МАРКО	СЕК. ПОК. ВЛАДЕ	САВЕТНИК	MARKO.BANJANIN@VOJVODINA.GOV.RS	
27	SAŠA SAVIĆ	SEKRETARIJAT PV	SAVETNIK	SAŠA.SAVIC@VOJVODINA.GOV.RS	
28	AGOTA SUPAN	PS za urb. i zašt. živ.	ml. savetnik	agota.lola@vojvodina.gov.rs	
29	DANICA POPIN	P.S. ZA URB. I ZAŠ. ŽIV. SR	S. SAVETNIK	DANICA.POPIN@VOJVODINA.GOV.RS	
30	ALEKSANDRA MARINČIĆ	P.S. ZA ENERGETIKU, GRAĐEVINARSTVO I SAOBRAĆAJ	SAVETNIK	ALEKSANDRA.MARINCIC@VOJVODINA.GOV.RS	

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31	TATJANA ĐURIĆ	POKRAJINSKI SEKRETARIJAT ZA URBANIZAM I ZAŠTITU	SAVETNIK	tatjana.djuric70@gmail.com	
32	АЛЕКСАНДАР МАТИЋ	ПОКРАЈИНСКИ СЕКРЕТАРИЈАТ ЗА ЗАШТИТУ	САМОСТАЛНИ САВЕТНИК СЕКРЕТАРА	aleksander.matic@vojvodina.gov.rs	
33	ĆALIĆ GORDANA	POK. SEKRETARIJAT ZA ZAŠTITU	SAVETNIK SEKRETARA	gordana.calic@vojvodina.gov.rs	ĆalićGordana
34	JOVANA NEDELJKOV	POK. ZAVOD ZA ZAŠTITU PRIRODE	DIPL. EKONOMISTA ZA FINANSIJE	jovana.nedeljkov@pzzp.rs	
35	MURJANA VRANJEŠ	POK. ZAVOD ZA ZAŠTITU PRIRODE	POMOĆNIK DIREKTORA	murjana.vranjes@pzzp.rs	
36	BOJKAN TAJOŠIĆ	GDi SOLUTION	MENADŽER	vojkan.gojone@gmail.com	
37	ЗОРАН ПЛЕМИЋ	ПЗЗП	СТРУЧЊАК ЗА ЗАШТИТУ ПРИРОДЕ	zoran.plemic@pzzp.rs	
38	SARA NOVAKOVIĆ	PZZP	SPP OPSTINA	SARA.NOVAKOVIC@PZZP.RS	
39	Теодора Суботић	НС ЗА УРБ И ЗИС	САВЕТНИЦА	teodora.subotic@vojvodina.gov.rs	
40	DOSA STIKOVIĆ	OPŠTINA BOGOJEVO	SAVETNIK	064/3323182	

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Sadržaj ovog dokumenta je odgovoran isključivo Pokrajinski sekretarijat za urbanizam i zaštitu životne sredine i sadržaj ovog dokumenta ne odražava zvanično mišljenje Evropske unije i/ili Upravljačkog tela Programa

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41	KRŽIĆ ALEKSANDRA	RHMZ	SAMOSTALNI SAVETNIK	063/70-98-614	KRŽIĆA
42	Владимир Жеравица	општина Сремски Карловци	извршилац за пољопривреду	VLADIMIR.ZERAVICA@GMAIL.COM.	Жеравица
43	Sanja Mrazovački	EXPERT	SAVETNIK	mrazovac@gmail.com	

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Догађај: ЕДУКАТИВНИ СЕМИНАР У ЗРЕЊАНИНУ ЗА ЛОКАЛНЕ САМОУПРАВЕ СРЕДЊОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Барокна сала, Градска кућа, Трг слободе 10. Град Зрењанин

Датум: У петак 17. априла 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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	SONJA ĆURČIĆ	GRADSKA UPRAVA GRADA ZR INSPEKCIJA ZA ZAŠ. ŽIV. SREDINE	INSPEKTOR	SONJA.CURCIC@GRAD.ZREN.ATV.RS	
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	Јована Бајевић	пе за урбанизам	инспектор	Gordana.Bajevic@vojvodina.gov.rs	
	Marina Stojanović	Pok. sekr. za urb. i Ž.Ž.S.	savetnik	marina.stojanovic@vojvodina.gov.rs	
	TAMARA ORLOVIĆ	POK. SEK. ZA URB. I ZŽS	Sam. savetnik	TAMARA.ORLOVIC@VOJVODINA.GOV.RS	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У ЗРЕЊАНИНУ ЗА ЛОКАЛНЕ САМОУПРАВЕ СРЕДЊОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Барокна сала, Градска кућа, Трг слободе 10. Град Зрењанин

Датум: У петак 17. априла 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
	Небојша Јовановић	Градска управа Зрењанин	Советник у одсеку за пројект.	063/646093	
	ТАТЈАНА ЂУРИЋ	ПОКРАЈИНСКИ СЕКРЕТАРИЈАТ ЗА УРБАНИЗАМ И ЗАШТИТУ ЖИВ.СР.	САВЕТНИК	tatjana.djuric@vojvodina.gov.rs	
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	САША ШКИЉЕВИЋ	ПС ЗА ОРБ И ЗЖС	ВИШИ САВЕТНИК	sasa.skiljevic@vojvodina.gov.rs	
	СИНИША САВКОВИЋ	ПС ЗА УРБАНИЗАМ И ЗЖС	МЛАЂИ САВЕТНИК	sinis.savkovic@vojvodina.gov.r	
	Оливера Вујтић	PS za urbanizam i ZŽS	Savetnik	021/487490	
	Наташа Миленић	PS za urb i ZŽS	Sam.savetnik	487490	
	Бранкица Табаш	ПС за урбанизам и заштиту животне средине	Пољопривредник	062 88 23 196	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У ЗРЕЊАНИНУ ЗА ЛОКАЛНЕ САМОУПРАВЕ СРЕДЊОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Барокна сала, Градска кућа, Трг слободе 10. Град Зрењанин

Датум: У петак 17. априла 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
	ДРАГАН ЂУРИЦА	П. СЕКРЕТАРИЈАТ ЗА УРБ. И ЗАШТИТУ ЖИВ. СРЕДИНЕ	ПОМОЋНИК СЕКРЕТАРА	dragan.djurica@vojvodina.gov.rs	
	Теодора Суботић	— " —	САВЕТНИЦА	teodora.subotica@vojvodina.gov.rs	Теодора Суботић
	Данка Дујин Жигић	ГУ Зрењанин Одсек за заштиту жив. средине	саветник	danka.zigic@grad.zrenjanin.rs	
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	JELENA ŠARENAC	PS ZA URBANIZAM I ZAŠTITU ŽIVOTNE SREDINE	pomoćnik sekretara	jelena.sarenac@vojvodina.gov.rs	
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	SOFIJA ŠUMARUNA	POKR. SEKR. ZA URBANIZAM I ZAŠTITU ŽIVOTNE SREDINE	VIŠI SAVETNIK	Sofija.Sumarun@vojvodina.gov.rs	Šumarun

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У ЗРЕЊАНИНУ ЗА ЛОКАЛНЕ САМОУПРАВЕ СРЕДЊОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Барокна сала, Градска кућа, Трг слободе 10. Град Зрењанин

Датум: У петак 17. априла 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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ЛИСТА ПРИСУТНОСТИ - Attendance list

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Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Градска кућа, Трг Слободе 1. Град Суботица

Датум: У петак 15. маја 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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4.	GRGUR STIPIĆ	GRADSKA UPRAVA SUBOTICA	ŠEF SLUŽBE ZA POLJ. I RURALNI RAZVOJ	grgur.stipic@subotica.ls.gov.rs	
5.	DULIĆ VLADIMIR	— 11 —	IZVRŠILAC ZA ŽIV. SREDINE	VLADIMIR.DULIC@ — 11 —	
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9.	Uroš Basta				
	Милош Тешић	ГРАДСКА УПРАВА СУБОТИЦА	ИЗВРШИЛАЦ ЗА ПРАТЕЋЕ ОБЈ. СТАНД. ЗИС	milos.tesic.24@GMAIL.com	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У СУБОТИЦИ ЗА ЛОКАЛНЕ САМОУПРАВЕ СЕВЕРНОБАЧКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Градска кућа, Трг Слободе 1. Град Суботица

Датум: У петак 15. маја 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
	ЈАСМИНА ТОМИЋ	ПОЉОПРИВРЕДНА САВЕТОДАВНА И СТРУЧНА СЛУЖБА СУБОТИЦА	КООРДИНАТОР ПИС-а	060/5559326	
	КСЕНИЈА МАРКОВИЋ	ПОЉОПРИВРЕДНА САВЕТОДАВНА И СТРУЧНА СЛУЖБА СУБОТИЦА	ИЗВРШИЛАЦ ПИС-А	060/5559324	Ксенија М.
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	SANDRA ČAKIĆ REY	JP „PALIĆ-LUDAŠ"	RUKOVODILAC SEKTORA ZAŠTITE PRIRODE	064-842-0787	Sandra Čakić Rey
	VESNA TULENTIĆ	GRADSKA UPRAVA SUBOTICA	IZVRŠILAC ZA EKONOMSKE POSLOVE	063-83 82 82 0	
	PEKTER ANDREA	GRADSKA UPRAVA SUBOTICA	IZVRŠILAC	andrea.peketer@subotica.rs.rs	
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	EMIL JANKOVIĆ	J.P. „PALIĆ-LUDAŠ"	ČUVAR ZAŠTIĆENIH PODRUČJA	064/8420-794	
	ERŽI HARGITA	GRAD SUBOTICA	ČL. GRAD. VEĆA	060/0673818	
	TIMEA UJHÁZI	GRADSKA UPRAVA SUBOTICA	IZVRŠILAC PRAVNIH POSLOVA - SEKRETARIJAT ZA POLJOPRIV. I ZAŠT. ŽIV. SREDINE	063/7793993 timeaujhazi@subotica.rs.gov.rs	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

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Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Градска кућа, Трг Слободе 1. Град Суботица

Датум: У петак 15. маја 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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3	RENATA SAKAL	JP "PALIĆ-LUDAŠ"	ORGANIZATOR POSLA	renatasakall75@gmail.com 063765528	SakalRenata
4	MONIKA ŠOMODI	JP "PALIĆ-LUDAŠ"	ODRŽAVANJE PARKARSTVO	simonsi75@gmail.com 062-368035	
5.	IVANA DAVČIK	GRADSKA UPRAVA SUBOTICA	IZVRŠILAC ZA POLJOPRIVREDU	IVANA.DAVCIK@SUBOTICA.LS.GOV.RS 064/8477611	
6.	MAJA SVRDLIN	GRADSKA UPRAVA SUBOTICA	IZVRŠILAC ZA POSLOVE ODBRANE I VANREDNIH SITUACIJA	maja.svrdlin@subotica.ls.gov.rs 064/8477-658	
7.	MARIA POJATAN	— " —	REFERENT ZA EKONOMSKE POSLOVE	maria.pojatan@subotica.ls.gov.rs	
8	GRGUR STIPIĆ	GRADSKA UPRAVA SUBOTICA	ŠEF SLUŽBE ZA POLJOPRIVREDU	grgur.stipic@subotica.ls.gov.rs	
9.	VLADIMIR DULIĆ	— " —	IZVRŠ. ZA ŽIV. SREDINU	VLADIMIR.DULIC@ — " —	
10	TEODORA C.	NC ZA UPRAVLJANJE	SAVETNIK	TEODORA.SUBOTIC@VOJVODINA.GOV.RS	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У СУБОТИЦИ ЗА ЛОКАЛНЕ САМОУПРАВЕ СЕВЕРНОБАЧКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Градска кућа, Трг Слободе 1. Град Суботица

Датум: У петак 15. маја 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У КИКИНДИ ЗА ЛОКАЛНЕ САМОУПРАВЕ СЕВЕРНОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Градска кућа, Трг Српских Добровољаца 12. Град Кикинда

Датум: У петак 24. априла 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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	Срђан Вујанић	Gradska uprava Ki	Fotograf/odnosi sa medijima	064 7094903	
	Изабела Јухас	Општинска управа Сента	Руководилац/ЈНП	064 8725370	
	Лилла Керинц Кирай	Општинска управа Сента	Послови заштите животне средине	064-872-5371	
	Александра Ђукан	Комуна, Кај нбсаи пошта	djuranka@gmail.com	069/426-33-44	
	Мирослава Ђорђић	GU Kikinda	Секретар, Секретаријата за ЈЗС	064/896-8063	
	Ирена Спасковић	ГУ Кикинда	Руководилац одсека за посл. и рударни рад	064/8688373	
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	Ана Арсенијевић	-"-	-"-	ana.arsenijevic@gmail.com	

Potpisivanjem ovog formulara, dajem saglasnost da se fotografija ili video zapis na kojem se pojavljujem a koji je snimljen na ovom događaju može javno objaviti.

Sadržaj ovog dokumenta je odgovoran isključivo Pokrajinski sekretarijat za urbanizam i zaštitu životne sredine i sadržaj ovog dokumenta ne odražava zvanično mišljenje Evropske unije i/ili Upravljačkog tela Programa

ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У КИКИНДИ ЗА ЛОКАЛНЕ САМОУПРАВЕ СЕВЕРНОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Градска кућа, Трг Српских Добровољаца 12. Град Кикинда

Датум: У петак 24. априла 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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	Кнежица Наташа	Градска управа Кикинда	саветник за урбанизам	natasa.knezica@kikinda.org.rs	
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	Ђорђе Тешић	ГО Кикинда	ЧЛАН ВЕЋА	062 8000 737	
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Potpisivanjem ovog formulara, dajem saglasnost da se fotografija ili video zapis na kojem se pojavljujem a koji je snimljen na ovom događaju može javno objaviti.

Za sadržaj ovog dokumenta je odgovoran isključivo Pokrajinski sekretarijat za urbanizam i zaštitu životne sredine i sadržaj ovog dokumenta ne odražava zvanično mišljenje Evropske unije i/ili Upravljačkog tela Programa

ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У КИКИНДИ ЗА ЛОКАЛНЕ САМОУПРАВЕ СЕВЕРНОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Градска кућа, Трг Српских Добровољаца 12. Град Кикинда

Датум: У петак 24. априла 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У КИКИНДИ ЗА ЛОКАЛНЕ САМОУПРАВЕ СЕВЕРНОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Градска кућа, Трг Српских Добровољаца 12. Град Кикинда

Датум: У петак 24. априла 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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4.	Babovanović Miodrag	JP Kikinda	S. SARADNIK INŽ. SAOBRAĆAJA	miodrag.babovanovic@jpkikinda.rs 062 8852 173	
5.	Bibo Pinaj	S.O. Kanjiža	Proj. Saradnik	BIBO.P@KANJIZA.RS 064/8.62.124	
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7.	Vesna Blaži	Grad Kikinda	Tehnički sekretar SPAB	vesna.blazi@kikinda.org.rs	
8.	Николет Бранисков	Општина Нови Кнежевац	Јавни бележник	branislav.nikolic@noviknezevac 0617261203	
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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У НОВОМ САДУ ЗА ЛОКАЛНЕ САМОУПРАВЕ ЈУЖНОБАЧКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV Акроним: CLIMACHANGE

Локација: амфитеатар Покрајинског завода за заштиту природе, Радничка 20 а у Новом Саду

Датум: Уторак 07. априла 2026. године са почетком у 11 часова

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4.	Tatjana Turanova	Opština Žabalj	Inspektor	tturan@zabalj-vrsac.rs	
5.	Bojan Ćirić	ПЗЗП	Стручњак	BOJAN.CIRIC@PZZP.RS	
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Садржај овог документа је одговоран искључиво Покрајински секретаријат за урбанизам и заштиту животне средине и садржај овог документа не одражава званично мишљење Европске уни и/или Управљачког тела Програма

ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У НОВОМ САДУ ЗА ЛОКАЛНЕ САМОУПРАВЕ ЈУЖНОБАЧКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV Акроним: CLIMACHANGE

Локација: амфитеатар Покрајинског завода за заштиту природе, Радничка 20 а у Новом Саду

Датум: Уторак 07. априла 2026. године са почетком у 11 часова

РБ	Име и презиме (Name and surname)	Институција (Institution)	Позиција (Position)	контакт (e-mail, phone)	Потпис (Signature)
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10	ТАТЈАНА ЂУРИЋ	ПОКРАЈИНСКИ СЕКРЕТАРИЈАТ ЗА УРБАНИЗАМ И ЗЖС	САВЕТНИК	tatjana.djuric@vojvodina.gov.rs	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У НОВОМ САДУ ЗА ЛОКАЛНЕ САМОУПРАВЕ ЈУЖНОБАЧКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV Акроним: CLIMACHANGE

Локација: амфитеатар Покрајинског завода за заштиту природе, Радничка 20 а у Новом Саду

Датум: Уторак 07. априла 2026. године са почетком у 11 часова

РБ	Име и презиме (Name and surname)	Институција (Institution)	Позиција (Position)	контакт (e-mail, phone)	Потпис (Signature)
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6.	Драган Милић	РХМЗ	Руководилац групе	064 8385 205	Милић
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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У ВРШЦУ ЗА ЛОКАЛНЕ САМОУПРАВЕ ЈУЖНОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV
Акроним: CLIMACHANGE

Локација: Градска кућа, Град Вршац

Датум: У петак 05. јуна 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У ВРШЦУ ЗА ЛОКАЛНЕ САМОУПРАВЕ ЈУЖНОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV
Акроним: CLIMACHANGE

Локација: Градска кућа, Град Вршац

Датум: У петак 05. јуна 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
1	JADRANKA PRVANOV			064.5757810	Prvanov.
2.	KPUNIĆ ALEKSANDRA	„FITNES AKADEMIJA „RASPUTIN TIM"		063/7-225555	Kpunić A.
3.	NATALIJA KLADARIN	ZINS PLAST PROIZVODNJA AMBALAŽE OD PLASTIKE		064/0198377	Natalija Kladarin
4.	Živković Sara	GRADSKA UPRAVA VRŠAC	SARADNIK	060/80-10-160	
5.	MILENA OŽEGOVIĆ	NA BIROU	–	063 7750-751	Ožegović
6.	SVETLANA GORIČKI	NA BIROU	–	064-1909871	Svetlana Gorički
7.	MAKSIMOVIĆ DEJAN	NA BIROU		060/1421887	Maksimović Dejan
8	MARIJA PETROVIĆ	GRADSKA UPRAVA GRADA VRŠCA	INSPEKTOR ZA ŽIVOTNU SREDINU	060 80 70125	Petrović Marija
9	Jocović Luka	OPŠTINA VRŠAC			
10	VESNA/ĐA ĐUNIĆ	VRŠAC		063/750-1-138	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У ВРШЦУ ЗА ЛОКАЛНЕ САМОУПРАВЕ ЈУЖНОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV
Акроним: CLIMACHANGE

Локација: Градска кућа, Град Вршац

Датум: У петак 05. јуна 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
21	PAVLA STEFA	GU VRŠAC	IT ADMINISTRATOR	060/80 70 176	
22	DRAGANA OKIĆ	GU VRŠAC	IT ADMINISTRATOR	060 80 70 180	
23	VESNA Doneverski	VRŠAC		0605260395	
24	Milošević Zorana	VRŠAC		0643090254	
25	Milojević Slobodan	VRŠAC		0643962155	
26	Карапуровић Живковић	ВРШАЦ		0658781871	
27	МАРИО Опричић	ГРАД ВРШАЦ	ЧЛАН ГРАЂАНСКОГ ВЕЋА	0661129 90	
28	СЛАВИЦА МАКСИМОВИЋ	ГРАД ВРШАЦ	ЧЛАН ГРАЂАНСКОГ ВЕЋА	060 045 0059	
29	ТАТЈАНА ЂУРИЋ	ПОКРАЈИНСКИ СЕКРЕТАРИЈАТ ЗА УРБАНИЗАМ И ЗЖС	САВЕТНИК	063/512 748	
30	Teodora Ljubotić	-"-	-"-	teodora.ljubotic@vojvodina.gov.rs	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У ВРШЦУ ЗА ЛОКАЛНЕ САМОУПРАВЕ ЈУЖНОБАНАТСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV
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Локација: Градска кућа, Град Вршац

Датум: У петак 05. јуна 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
31	Слађана Субошић	ОШ Вук Караџић	библиотекар	sledzsubosic@gmail.com	Слађана Субошић
32	Владан Вишекруна	Тур. орг.	Туристички техничар	066 434 523	ВВ
33	Ана Мађура	Пољопривредна школа	професор	061/674-0591	Ана Мађура

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У СРЕМСКОЈ МИТРОВИЦИ ЗА ЛОКАЛНЕ САМОУПРАВЕ СРЕМСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV Акроним: CLIMACHANGE

Локација: Градска кућа у Сремској Митровици

Датум: Петак 29. мај 2026. године са почетком у 11 часова

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1.	Adamović Goran	Pokr. Vlada	služb.	063 154 8-934	
2	Vladislava Radanov	Grad Sremska Mitrovica	Saradnica	063/836-0-846	
3	Тихомир Бечејац	Град Сремска Митровица	сарадник	063/494-883	
4	Милорад Јанићијевић	ЈКП Сремска Митровица	сарадник	064 8589613	
5	Senka Mitrović	PSS Sr. Mitrovica	saradnica	064 8589613	
6.	Tamara Ratkov	PSS Sr. Mitrovica	saradnik	064/85-89-638	
7.	Петар Станчић	ОВС СМ		062-8-511-785	
8	Vuković Milan	OVS SM	šef odseka za cz i ur.	064/2046284	
9	Simić Nikola	JP Urbanizam SM	odgovorni urbanista	060 0896603	
10.	Jovana Nenić	PU Sremski urbana mobilnost	mlađi saradnik	063-65-35-29	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У СРЕМСКОЈ МИТРОВИЦИ ЗА ЛОКАЛНЕ САМОУПРАВЕ СРЕМСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV Акроним: CLIMACHANGE

Локација: Градска кућа у Сремској Митровици

Датум: Петак 29. мај 2026. године са почетком у 11 часова

РБ	Име и презиме (Name and surname)	Институција (Institution)	Позиција (Position)	контакт (e-mail, phone)	Потпис (Signature)
11.	Славица Шешк	Град Ср. Митровица	самостални савет	064/20-20-512	Шешк
12.	Nikola Vučenović	Grad Sr. Mitrovica	SAVETNIK	VUCENOVIC92@hotmail.com	Вученовић
13.	Јована Лазаревић	Управа за пољопривреду	саветник	060/670-3940	Јована Лазаревић
14.	VUKELIĆ JELENA	UPRAVA ZA POLJOPRIVREDU	SARADNIK	jelenavukelic91@gmail.com	Jelena Vukelić
15.	Мирослав Марић	ГРАД СР. МИТРОВИЦА УПРАВА ЗА УРБАНИЗАМ	САМОСТАЛНИ САВЕТНИК	OP.MARIC@SREMSKAMITROVICA.ORG.RS	М. Марић
16.	Дарко Огњат	Град Ср. Митровица	саветник	ozvatd@gmail.com 064/8894548	Огњат
17.	ТАЈЈАНА БУРИЋ	ПОКРАЈИНСКИ СЕКРЕТАРИЈАТ ЗА УЗБ.	САВЕТНИК	bobana.djuric@vojvodina.gov.rs	Бурић
18.	Теодора Суботић	-"-	-"-	teodora.subotic@vojvodina.gov.rs	Суботић
19.	Слепана Дурмишевић	ПСЗЗТУРС	инспектор	slepana.durmisevic@vojvodina.gov.rs	Слепана Д.
20.	Огњен Крајиновић	-"-	инсп.	ognjena.nikolic@vojvodina.gov.rs	Огњен Д

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У СРЕМСКОЈ МИТРОВИЦИ ЗА ЛОКАЛНЕ САМОУПРАВЕ СРЕМСКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Градска кућа, Светог Димитрија 13. Сремска Митровица

Датум: У петак 29. маја 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
21.	Dragan Semlč		INSPEKTOR	063 587796	
22.	Маја К. Матић	покрајински секретар.	инспектор	063 595213	
23.	Лидија Хорњак	-11-	-11-	063 506248	
24.	Наташа Рупић	-11-	-11-	063 507326	
25.	Imre Jenovai	Rima	V.S. INSPE.	062-220 2093	
26.	Марицана Михајловић Сусек		Мед. сестра	065/287-8096	
27.	Александра Лестановић	-11-	-11-	0695131515	
28.	Душан Пазић	СУСЕК-БЕОЧИН	пољопривредник	064/3627658	
29.	Пазић Јована	-11-	-11-	064/3627658 063752397 0	
30.	Jelena Mitrović	Intija	Logistika	+381635360 34	

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ЛИСТА ПРИСУТНОСТИ - Attendance list

Догађај: ЕДУКАТИВНИ СЕМИНАР У КУЛИ ЗА ЛОКАЛНЕ САМОУПРАВЕ ЗАПАДНОБАЧКОГ УПРАВНОГ ОКРУГА И ЗАИНТЕРЕСОВАНЕ СТРАНЕ

Назив пројекта: Адаптација на климатске промене у АП Војводини– Adapt on clime change in APV

Акроним: CLIMACHANGE

Локација: Општина Кула, Лењинова бр.11. 25 230 Кула

Датум: У петак 22. мај 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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	Žarko Trešnjić	ENERPLUS VRBAS	DIREKTOR	OFFICE@ENERPLUS.RS 064 817 2033	
	Nikola Vujović	ENERPLUS VRBAS	KONSULTANT	office@eneplus.rs 064 8375706	
	Biljana Ljevnaić	OPŠTINA Kula	Insp. za zašt. živ. sred.	bljevnaic@kula.rs	
	DAVOR MARINKOVIĆ	OPŠTINSKI ODSJACI	INSP. ZA ZAŠ. ŽIV. SR.	poljoprivreda@omail.k	
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	Љубомир Брашковић	ОУ ОДЖАЦИ	СЛУЖБА ЗА БС	czo@odzaci.rs 065 9510254	
	САНДА МРАЗОВАЦ КУРЈАКОВ	УУНТ	Teg. Arh.		
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Акроним: CLIMACHANGE

Локација: Општина Кула, Лењинова бр.11. 25 230 Кула

Датум: У петак 22. мај 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
1.	Мирјана Коралић	ОУ Кула	инспекција	063/8873655	
2.	Јелена Чепић	ОУ Кула	Просветни за ЗНС	060/0271877	
3	Наташа Станојевић	ОУ Кула	помоћник председника	065/8400388	
4	Miloš Davidov	KLER - OU KULA	KOORDINATOR KLER	065 377 8739	
5.	Драгана Зрнић Секулић	KLER- OU Kula	Šef KLER-a	060/8273203	
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10	Никола Балаћ	ОУ Апатин	Обл. упр	065/2526022	

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Локација: Општина Кула, Лењинова бр.11. 25 230 Кула

Датум: У петак 22. мај 2026. године са почетком у 11 часова

	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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	ТАЈАНА ВУЧИНИЋ	ОПШТИНСКА УПРАВА КУЛА	ЛИКВИДАТОР ЈЛС	tayanavucinic2@gmail.com	Вучинић
	Ивана Гаврић	Градска управа Сомбор	ШЕФ ОДСЕКА	IGCICAFE@MAIL.RU	
	ДРАГАН ЂУРИЦА	ПС УЗЖЕС	ПОМОЋНИК СЕКРЕТАРА	dragan.djurica@email.com	Ђ
	Блажео Костић	ОУ Кула	РУКОВОДИЛАЦ ИНВ. ЗАЈЕДНИЦЕ И ЕМ	ekoop@kula.rs	Костић
	Вукашин Ракић	ОУ КУЛА	ШЕФ ОДСЕКА ЗА ЈАВНЕ НАБАВКЕ И ВАНР. СИТУАЦИЈЕ	VRAKIC@KULA.RS	Ракић
	ЈЕЛЕНА ПАПУГА	ОУ КУЛА	ПРАВНИ ПОСЛОВИ СЛУЖБА СО и ОА	sluzba2501@kula.rs	
	ЗВЕЗДАНА ПАВЛОВИЋ	ОУ КУЛА	ПРЕДАВАЧ ЗА РУСКИ ЈЕЗИК И АДМ. ПОСЛ. СО	ZPAVLOVIC@KULA.25	Павловић

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	Ime i prezime (Name and surname)	Institucija (Institution)	Pozicija (Position)	Contact (e-mail, phone)	Potpis (Signature)
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	МИЛОРАД ВУКСАН	СО КУЛА	СЕКРЕТАР	064/2167104	
	ТЕОДОРА Суботић	ПСТА урб и заш	САВЕТНИЦ	teodora.subotica@vojvodina.gov.rs	

Potpisivanjem ovog formulara, dajem saglasnost da se fotografija ili video zapis na kojem se pojavljujem a koji je snimljen na ovom događaju može javno objaviti.

sadržaj ovog dokumenta je odgovoran isključivo Pokrajinski sekretarijat za urbanizam i zaštitu životne sredine i sadržaj ovog dokumenta ne odražava zvanično mišljenje Evropske unije i/ili Upravljačkog tela Programa

South Bačka District
Novi Sad – 7 April 2026






North Banat District
Kikinda – 24 April 2026






West Bačka District
Kula – 22 May 2026



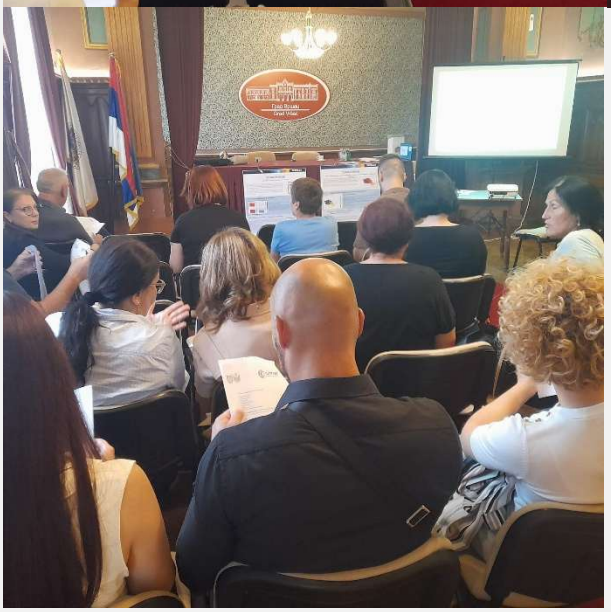






South Banat District
Vršac – 5 June 2026





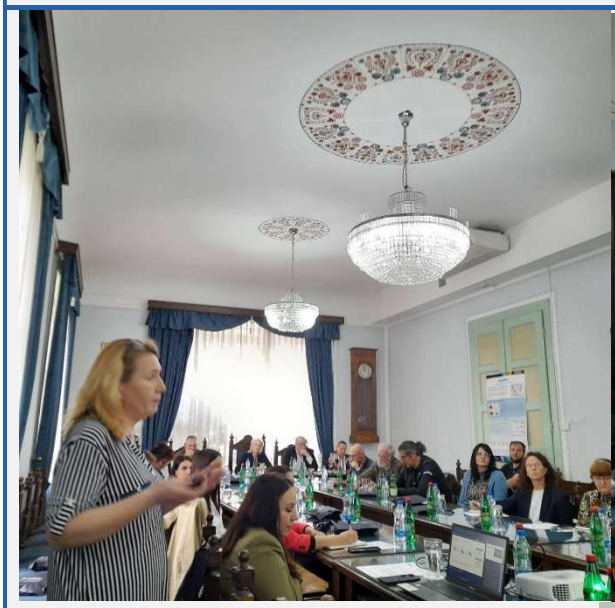

Central Banat District
Zrenjanin – 17 April 2026



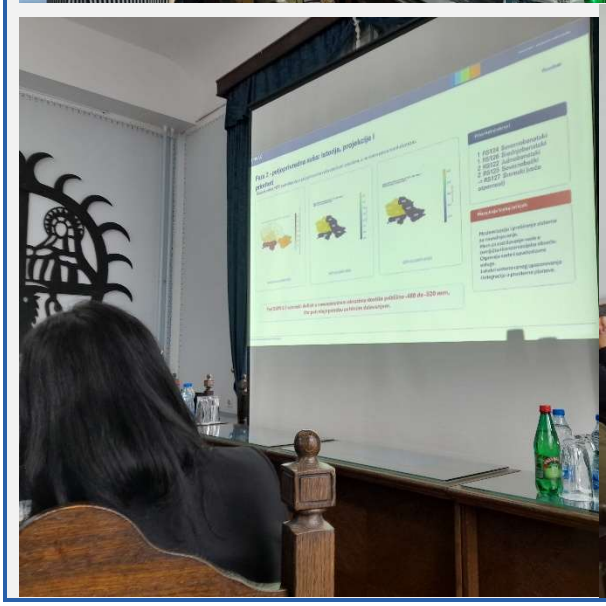




North Bačka District
Subotica – 15 May 2026

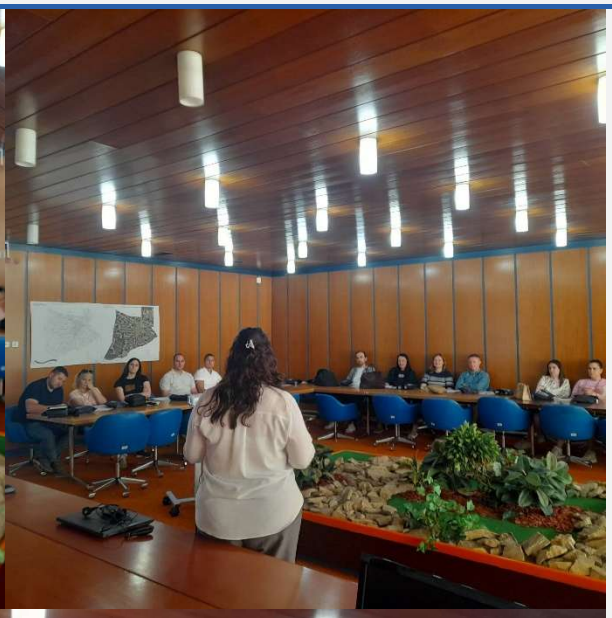
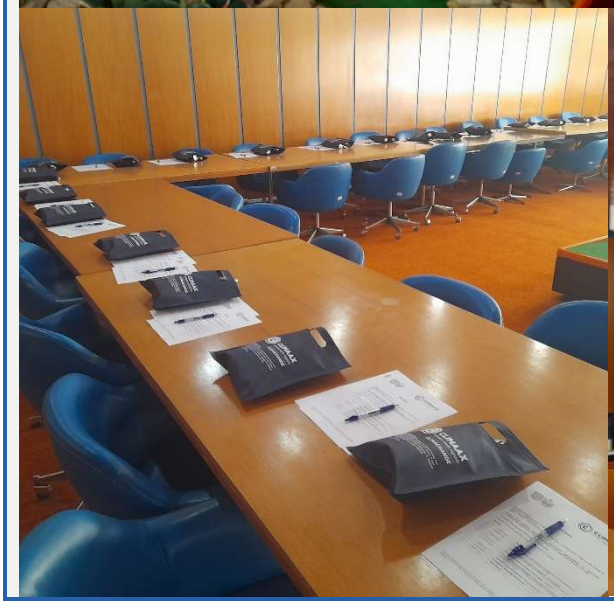








Srem District
Sremska Mitrovica – 29 May 2026


Presentation of the results to policy and decision makers in our region in Novi Sad capital city in AP Vojvodina

Novi Sad – 19 June 2026





