IN CREATION AND MANAGEMENT OF SMALL-SCALE IRRIGATION IN NORTH MACEDONIA

ЕУ ЗА ЗАЈАКНУВАЊЕ НА ЗЕМЈОДЕЛЦИТЕ ВО СИСТЕМИ ЗА НАВОДНУВАЊЕ ОД МАЛ ОБЕМ

PROJECT DESCRIPTION / ОПИС НА ПРОЕКТОТ

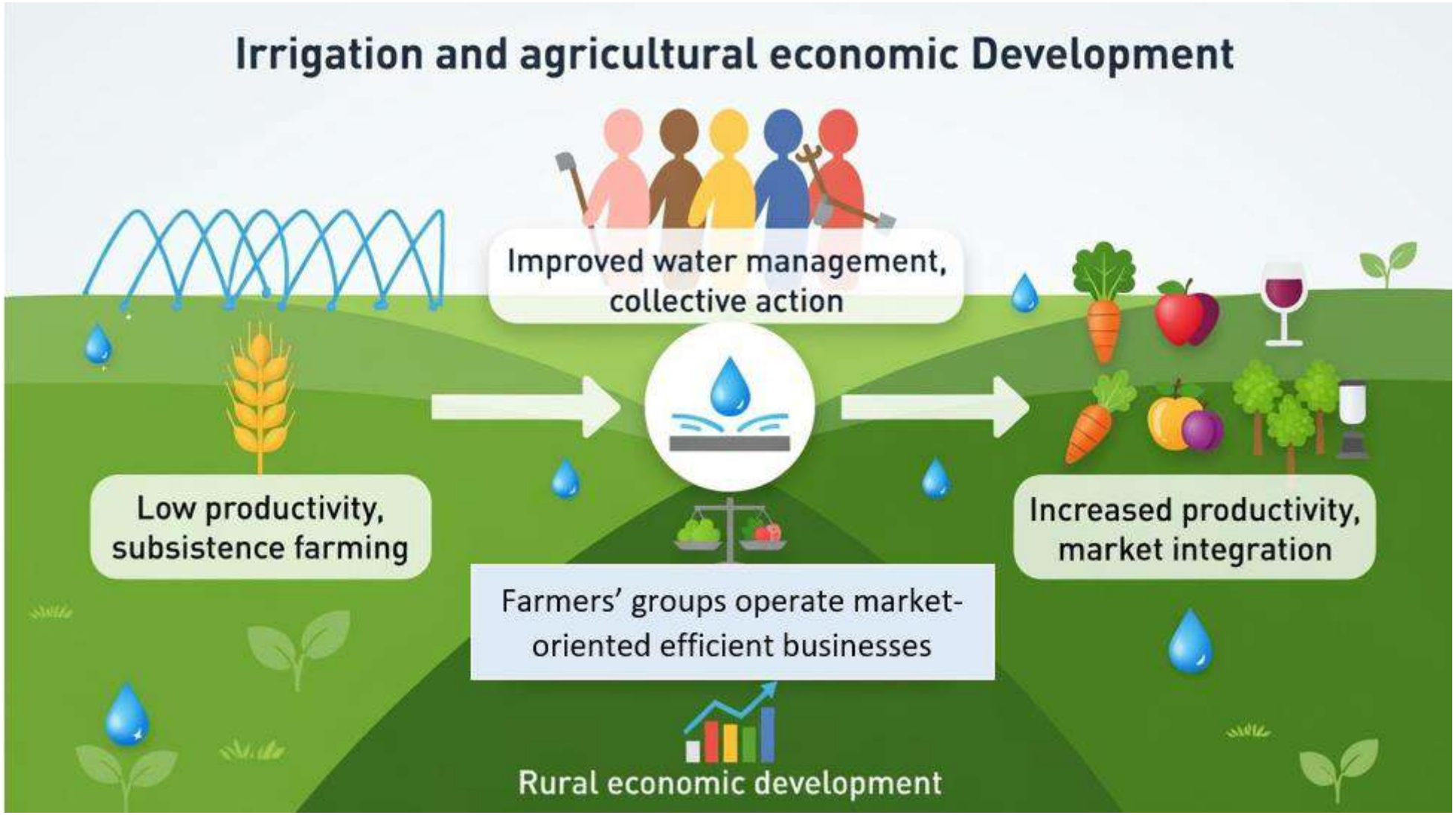
9th JUNE 2026

EU for Empowering Farmers in Small-Scale Irrigation Systems

Funded by the European Union

Global objective of the project:

Green, recover, and modernise the economy of North Macedonia by strengthening the resilience, sustainability, and competitiveness of the agricultural sector in line with EU practices and the Green Deal priorities.


Irrigation and agricultural economic Development
Improved water management, collective action
Low productivity, subsistence farming
Increased productivity, market integration
Farmers' groups operate market-oriented efficient businesses
Rural economic development

The **specific objectives** are

- to strengthen the capacities of farmers' groups and cooperatives in North Macedonia to sustainably use and manage small-scale irrigation systems,
- ensuring that institutional and legal frameworks enable participatory irrigation management (PIM) in line with EU best practices and the agriculture and water acquis.

The **expected results** through the programmed activities are:

- Expected Result 1: Farmers' groups are technically competent and organised for sustainable irrigation management (through Activities 1 and 3)

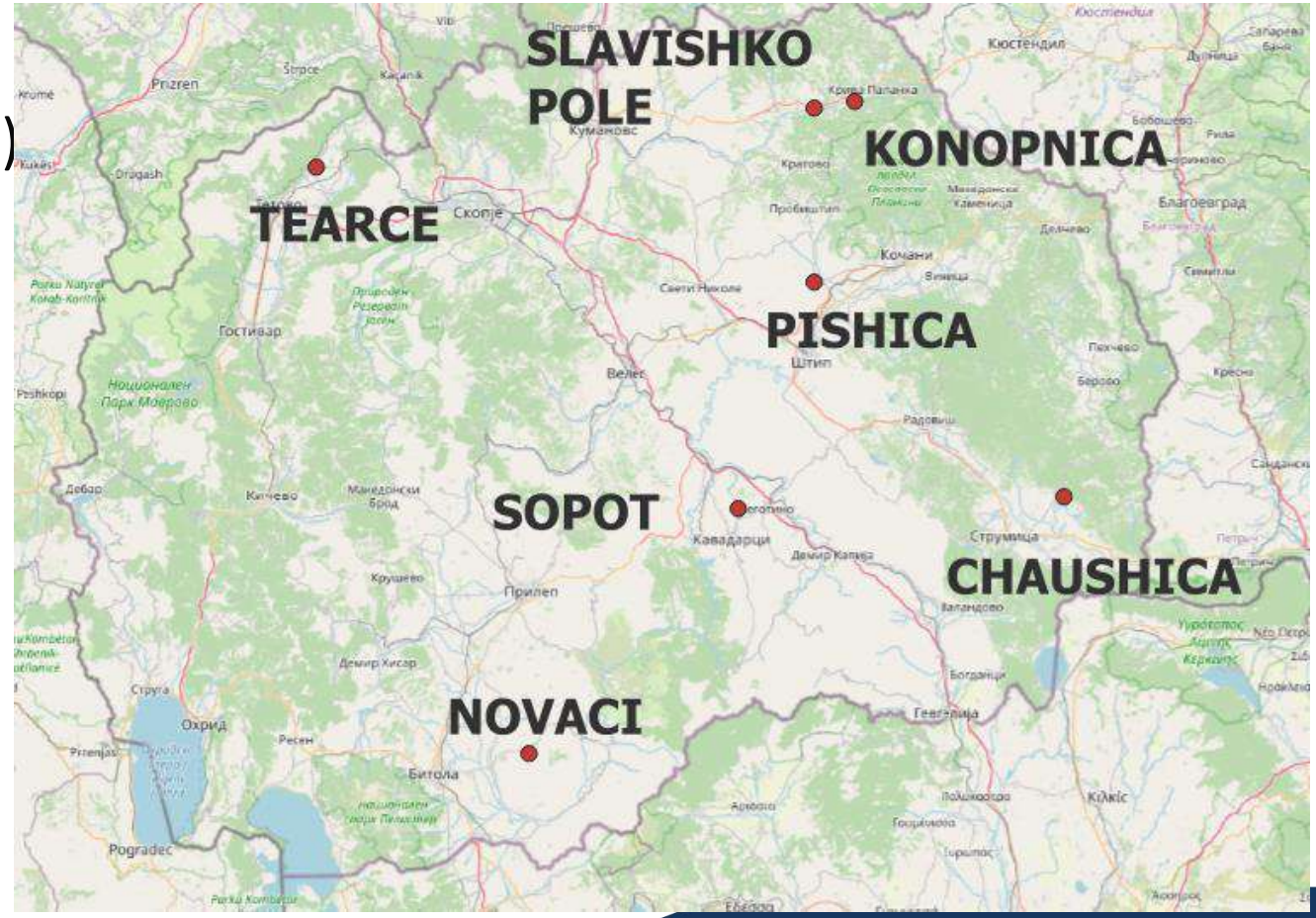
- Expected Result 2: Farmers' groups operate sustainable, market-oriented, and water- efficient businesses (through Activity 2 and 4)

- Expected Result 3: Legal, institutional, and operational governance frameworks for participatory irrigation management strengthened (through Activity 5 and 6)

The construction of the irrigation schemes included in this project are funded by the European Union Instrument for Pre-accession Assistance (IPA)

Irrigation schemes (and municipalities)

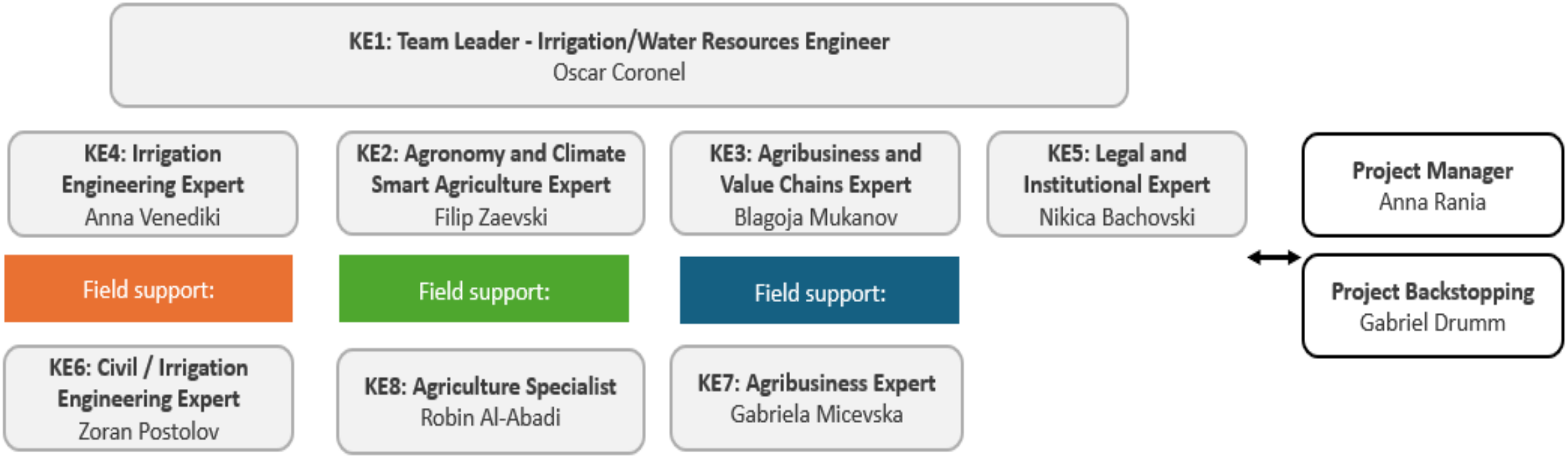
1.Konopnica (Kriva Palanka),
2.Slavishko Pole (Rankovce)
3.Pishica (Probishtip),
4.Chaushica (Bosilovo),
5.Tearce (Tearce).
6.Novaci (Novaci)
7.Sopot (Kavadarci).



Implementation Approach & Methodology

The project duration is 600 days. As the project commenced on 2 February 2026, it is expected to be completed in September 2027.

PROJECT TEAM:



Presentation of Initial Findings of Inception Phase

Initial findings - Legal and Institutional Review (1)

- 2003 - 2015, Law on Water Communities (WC) recognised WC as non-profit entities authorised to operate and maintain (O&M) irrigation systems. Participatory model
- 2015 centralised irrigation management under the Joint-Stock Company Water Management (JSCWM), abolishing Water Communities Law.
- 2016 Amendments in the Laws on Agricultural Cooperatives and on Water Management allowed JSCWM to delegate O&M to cooperatives, in areas without branch offices or under internationally-funded infrastructure projects.
- The law on Agricultural Cooperatives was abolished in 2023, generating legal uncertainty in terms of legal grounds for the delegation of O&M of irrigation systems

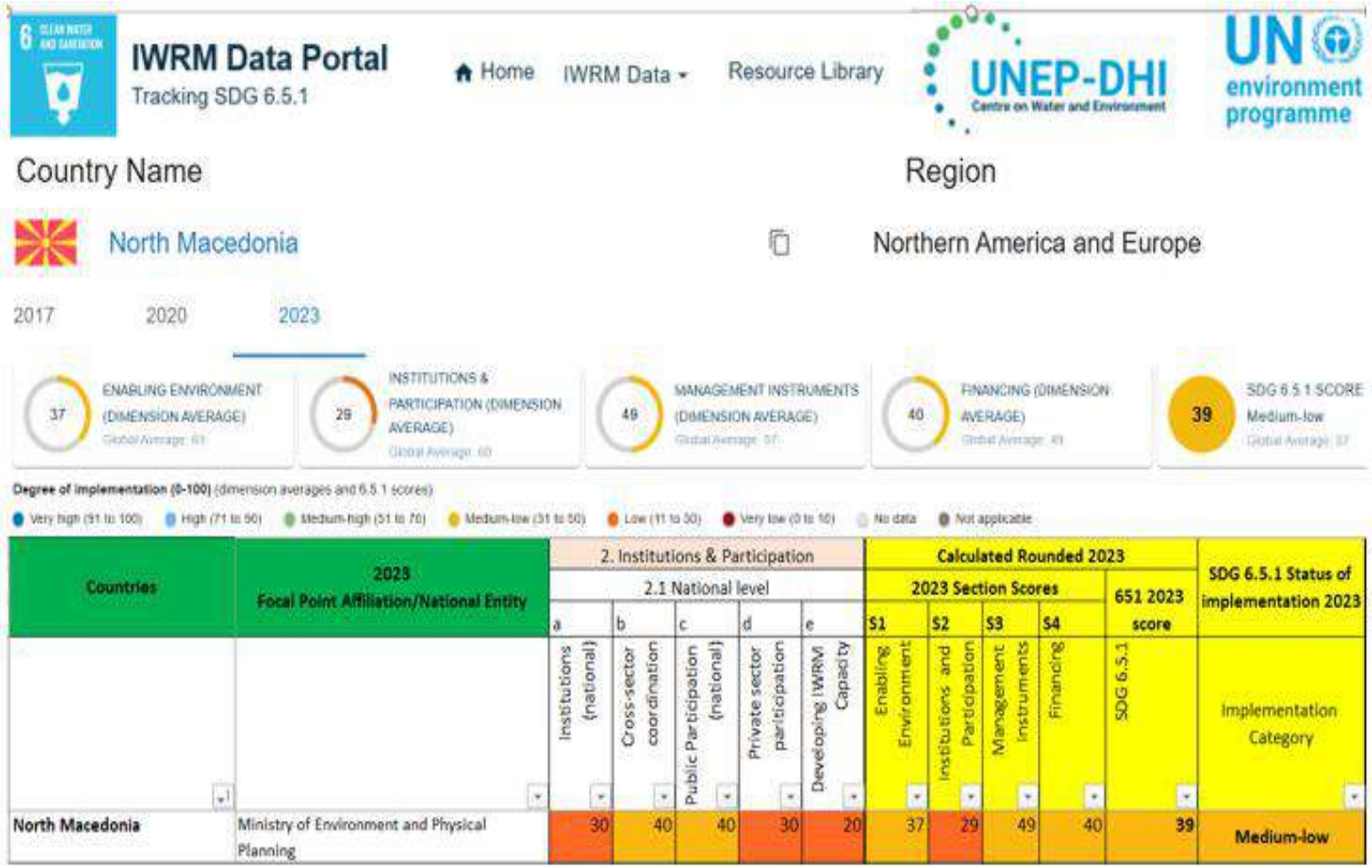
Initial findings - Legal and Institutional Review (2).

At present:

- Water abstraction permits are issued by the Ministry of Environment, which can apply fines through inspectors
- Operational management of infrastructure rests with JSCWM.
- The Ministry of Agriculture maintains policy oversight for irrigation.
- The Ministry of Economy regulates the creation and performance of agricultural cooperatives
- Municipalities provide construction and use permits to irrigation systems

Initial findings - Legal and Institutional Review (3)

"Integrated Water Resources Management (IWRM) is a cross-sectoral approach that is increasingly recognized as the solution to traditional, fragmented sectoral approaches to water resources management that have led to unsustainable use and poor services." (UN Environment Program)



Countries	2023 Focal Point Affiliation/National Entity	2. Institutions & Participation					Calculated Rounded 2023					SDG 6.5.1 Status of implementation 2023
		2.1 National level					2023 Section Scores				651 2023 score	
		a	b	c	d	e	S1	S2	S3	S4		
		Institutions (national)	Cross-sector coordination	Public Participation (national)	Private sector participation	Developing IWRM Capacity	Enabling Environment	Institutions and Participation	Management Instruments	Financing	SDG 6.5.1	Implementation Category
North Macedonia	Ministry of Environment and Physical Planning	30	40	40	30	20	37	29	49	40	39	Medium-low

Initial findings - Legal and Institutional Review (4)

For reintroducing participatory irrigation management, it is necessary to expand contractual delegation by JSCWM to cooperatives or farmer associations, retaining public ownership and supervision of service provided, while assigning operational responsibility locally to farmers.

Both approaches (cooperatives or farmer associations) require legal clarification, institutional coordination, and phased implementation.

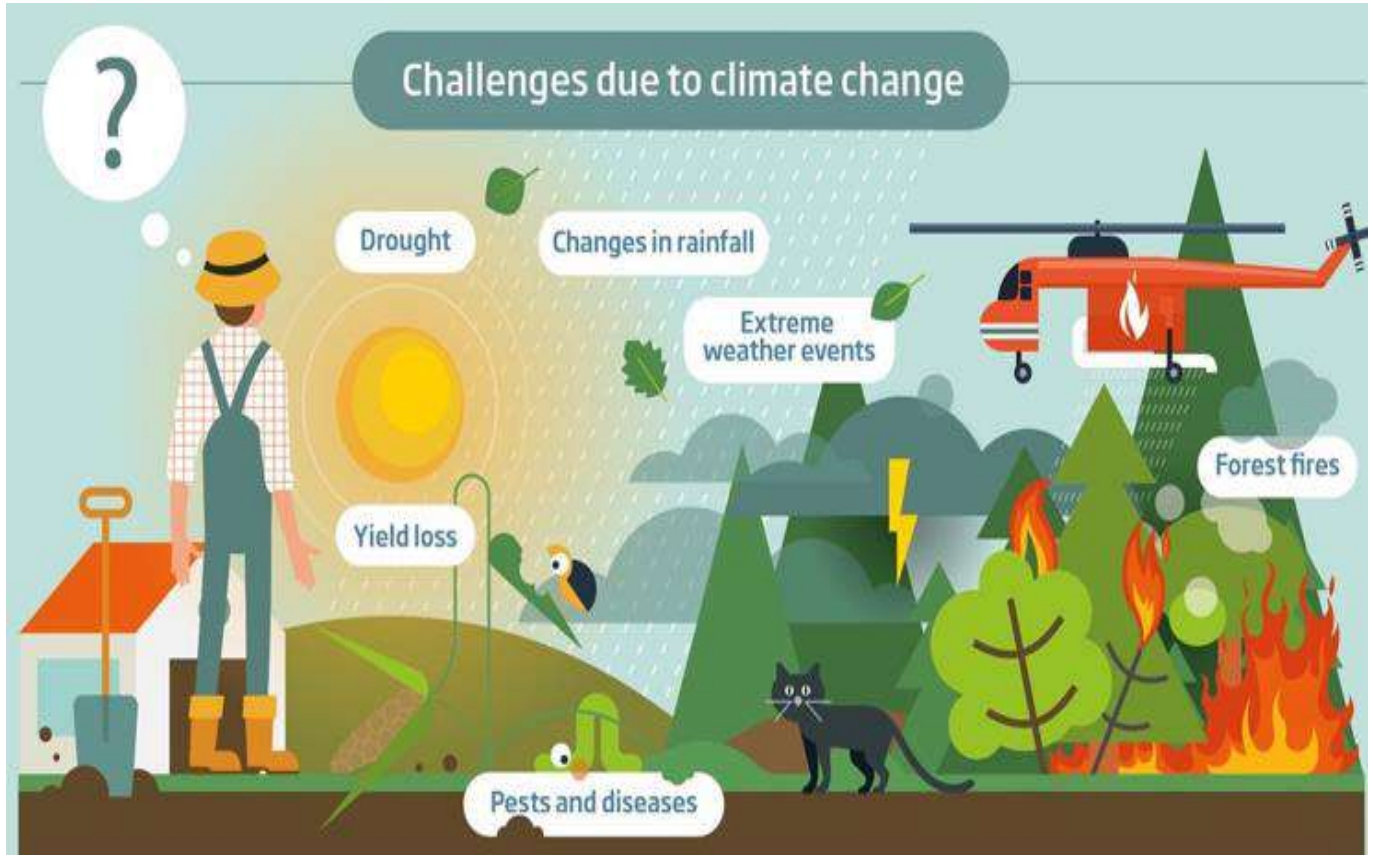
The project's role is to support institutions and farmers with expertise, analysis and training, but the process itself remains dependent on institutional decisions.

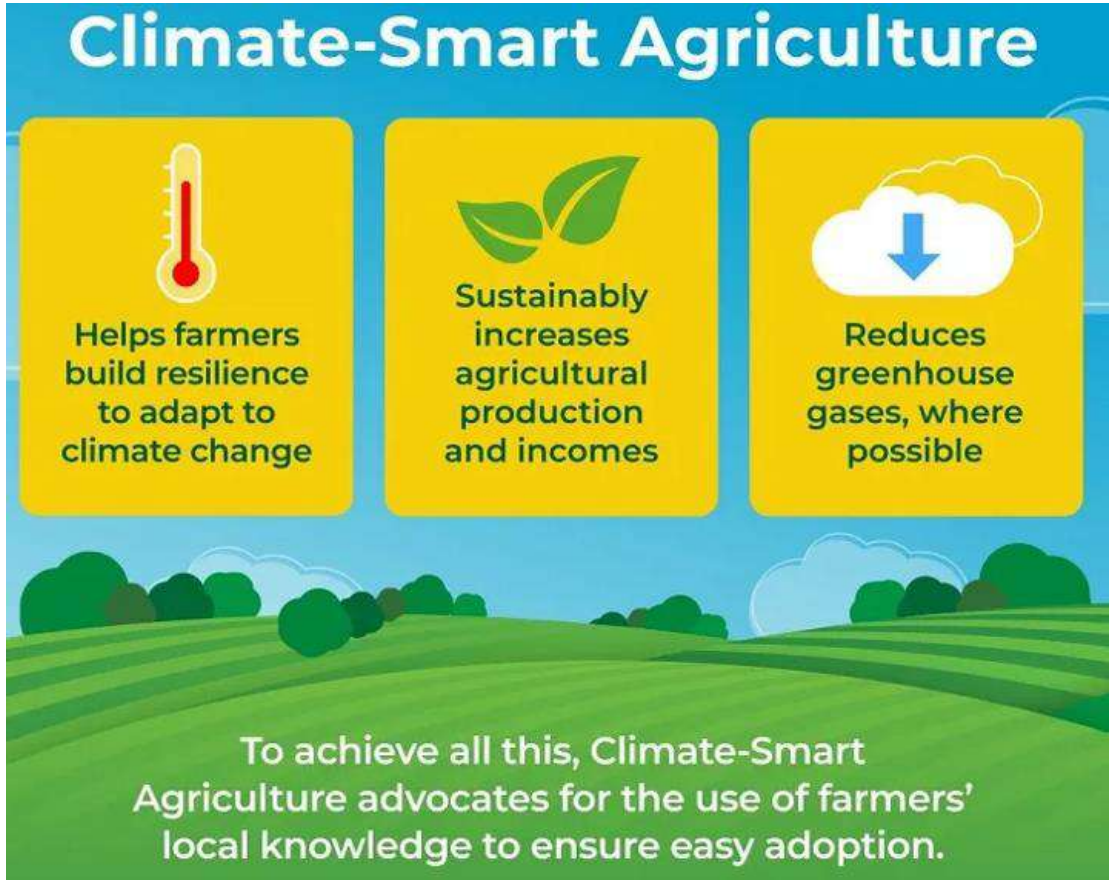
Initial findings - Agribusiness Review

Market participation in the areas is limited by **fragmented production**, **small individual volumes**, and **the lack of aggregation, grading, and standardisation**. Most farmers continue to **sell individually at the farmgate**, which restricts their access to structured and better-paid market channels.

Establishing **producer groups can coordinate** cropping calendars, consolidate volumes, apply grade and packing standards, and plan sales prior to planting, that will enhance **farmers' ability to meet the quality, volume, and delivery requirements of organised markets** and allow to **develop stable linkages with existing buyers**, pursue **contract farming or supply arrangements** with traders and processors, creating predictable demand and **reducing market risk**.

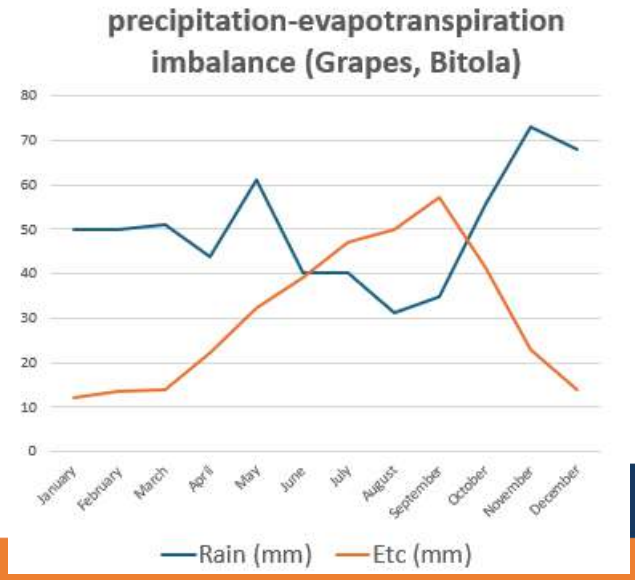
Initial findings - Agronomy and Climate Smart Agriculture Review (1)



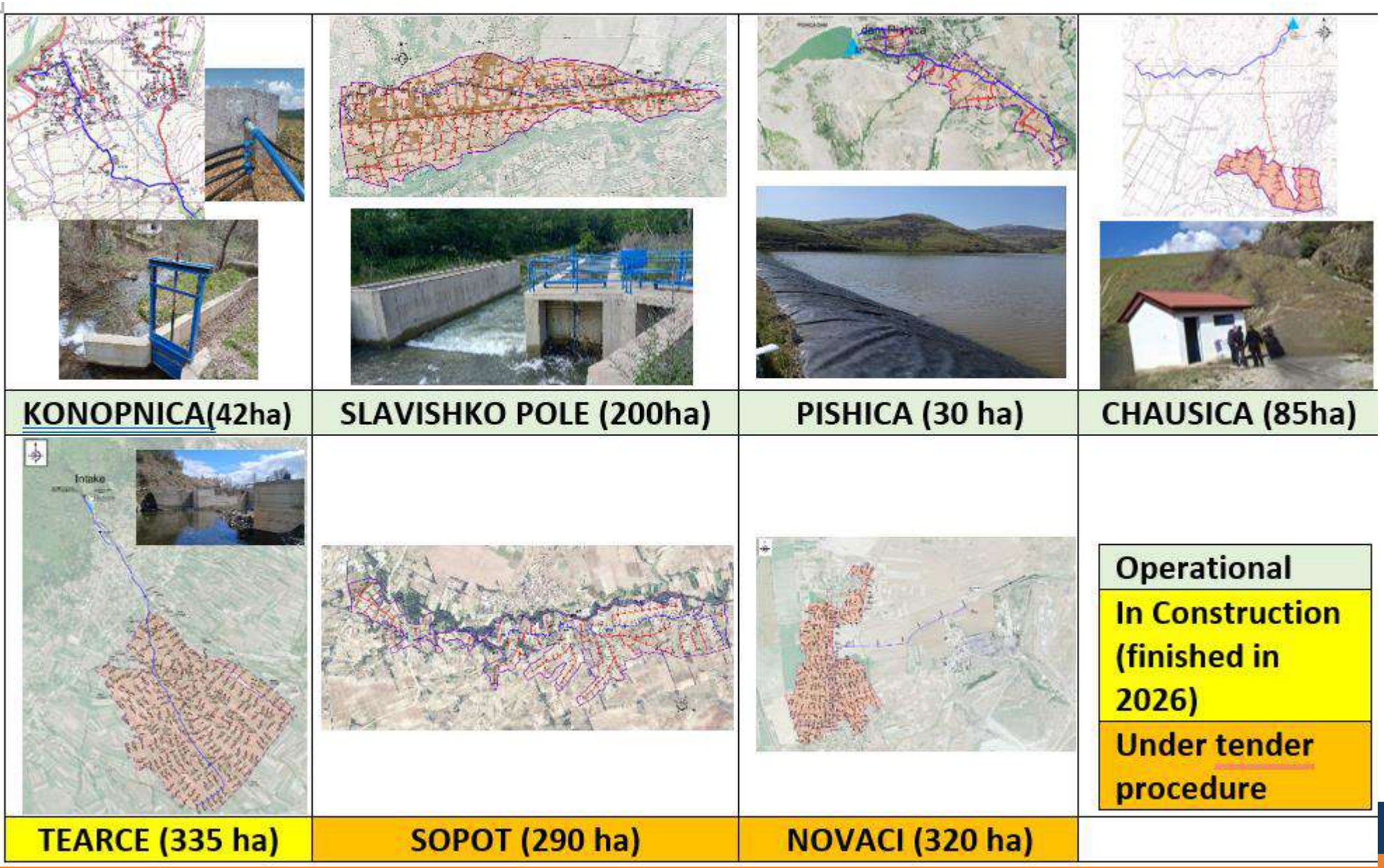


Initial findings - Agronomy and Climate Smart Agriculture Review (2)

- North Macedonia faces significant **climate vulnerabilities** due to its exposure to **intensifying extreme weather events** and **shifting climatic patterns:** torrential rains, floods, droughts, heatwaves, wildfires, and landslides.
- Mean annual temperatures have increased by approximately 1.2°C over recent decades, with climate projections indicating further warming of 1.7-4.0°C by the end of the century under intermediate emission scenarios
- The most critical challenge for agricultural production is the precipitation-evapotranspiration imbalance: approximately 60-65% of annual rainfall occurs between October and March, outside the primary growing season (April-September),

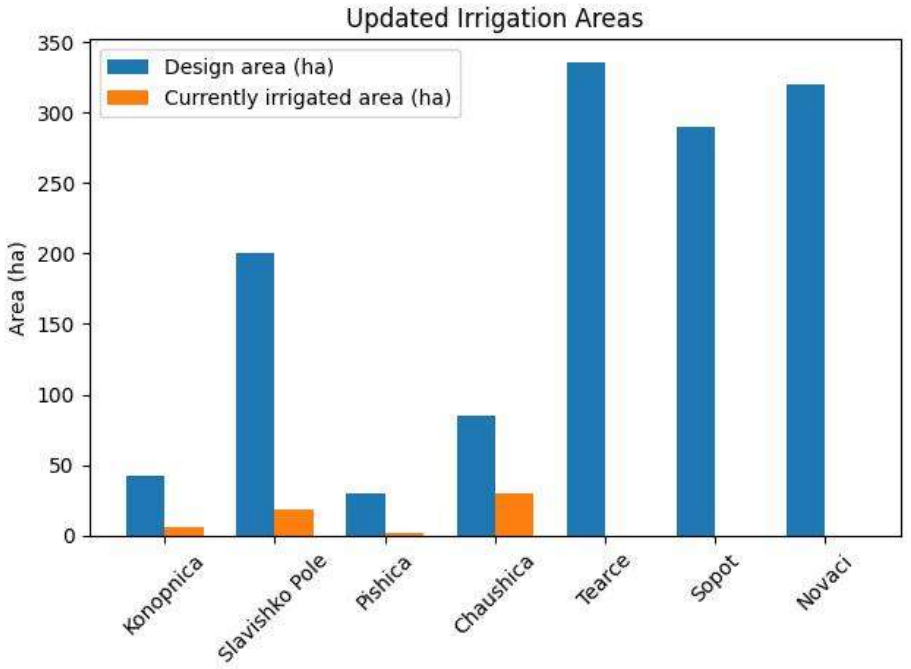


Actual situation of Irrigation systems (1)



Actual situation of Irrigation systems (2)

Irrigation System Name / Municipality	Water Source	Design Area (ha)	Currently Irrigated Area (ha)	Use Rate
Konopnica (Kriva Palanka)	Konopiska River	42	5.5	~14%
Slavishko Pole (Rankovce)	Kriva Reka River	200	18	~7%
Pishica (Probistip)	Reservoir (700,000 m³)	30	1.7	~6%
Chaushica (Bosilovo)	Reservoir (180,000 m³)	85	10	~12%
Tearce (Tearce)	Bistrica River	335	–	–
Sopot (Kavadarci)	Tikveš main canal	290	–	–
Novaci (Novaci)	Suvodol Reservoir (450,000 m³)	320	–	–



Actual situation: Agricultural production systems observed (1)

	Dominant Production System	Secondary Activities	Livestock Presence	Production Orientation
Pishica	Rainfed cereal production	Fodder crops	Moderate	Mostly subsistence and local markets
Tearce	Cereals and maize	Fodder production; vegetables (small scale)	High	Local and regional markets
Konopnica	Mixed small-scale crops	Vegetables (limited)	Moderate	Local markets
Slavishko Pole	Cereals dominant	Vegetable production potential	Moderate	Local and regional markets
Novaci	Cereals and fodder crops	Livestock feed production	High	Market-oriented production
Sopot	Vineyards and orchards	Field crops	Moderate	Strong market orientation

Cropping patterns, potential irrigated crops, expected agribusiness impact

Irrigation Scheme	Current Dominant Crops	Secondary Crops	Potential Irrigated Crops	Diversification Potential	Expected Agribusiness Impact
Pishica	Wheat, barley	Fodder crops	Vegetables, orchards	Medium	Local vegetable production and small horticulture value chains
Tearce	Wheat, maize	Fodder crops; vegetables (small scale)	Vegetables, fruits	High	Commercial vegetable production linked to regional markets
Konopnica	Wheat, barley	Maize; vegetables (limited)	Vegetables, orchards	Medium	Fresh produce supply for local markets
Slavishko Pole	Wheat, barley	Vegetables (small scale)	Vegetables, orchards	High	Expansion of horticultural production and regional supply chains
Novaci	Wheat, maize	Fodder crops	Vegetables, fodder crops	Medium–High	Stronger crop–livestock value chains and vegetable production
Sopot	Vineyards, orchards	Field crops	Expansion of vineyards and fruits	High	Strengthening wine and fruit processing value chains

Initial findings -Producer Groups – Current Situation and Gaps (1)

Producers´ organisation: critical link between infrastructure and impact.

- No cooperative or farmers association currently manages any of the systems
- Producer organisation is limited across most sites.
- Several locations lack any formal groups, others have inactive cooperatives existing only on paper,
- many rely on informal collaboration that cannot support the required coordination for volume consolidation, grading, market access, or irrigation operation and maintenance (O&M).

General conclusion from the initial field meetings with farmers – Key Challenges

- Limited number of fully operational and functional cooperatives
- Low level of trust and reluctance toward collective action in some areas
- Insufficient understanding of cooperative/farmer groups formation procedures and benefits
- Aging farmer population and insufficient generational renewal
- Structural constraints limit farmers interest (e.g., unreliable water supply)
- Limited market orientation and weak business approach among farmers
- Low adoption of modern technologies and innovation

General conclusion from the initial field meetings with farmers – Recommendations

- Provide continuous mentoring and technical support throughout the process
- Strengthen awareness and knowledge on cooperative models and legal frameworks, use successful examples from the country
- Build trust through regular engagement, transparency, and demonstration cases
- Empower young farmers and local champions as drivers of change
- Ensure active involvement of municipalities and MAFWE local offices
- Promote modern technologies and improved market linkages (incl. contract farming)
- Apply a gradual, context-specific approach, especially in sensitive areas

Presentation of Project Activities

ACTIVITIES FORESEEN IN THE TERMS OF REFERENCE

The activities foreseen in the Terms of Reference (ToR) to be performed are:

- Activity 1: Build technical capacity of farmers' groups in managing small-scale irrigation systems
- Activity 2: Co-design sustainable business models and train farmers in business management
- Activity 3: Strengthen organisational capacity and governance of farmers' groups
- Activity 4: Optimise water resource management at group and system level
- Activity 5: Strengthen the legal framework for participatory irrigation management (PIM)
- Activity 6: Enhance institutional and operational governance for PIM.

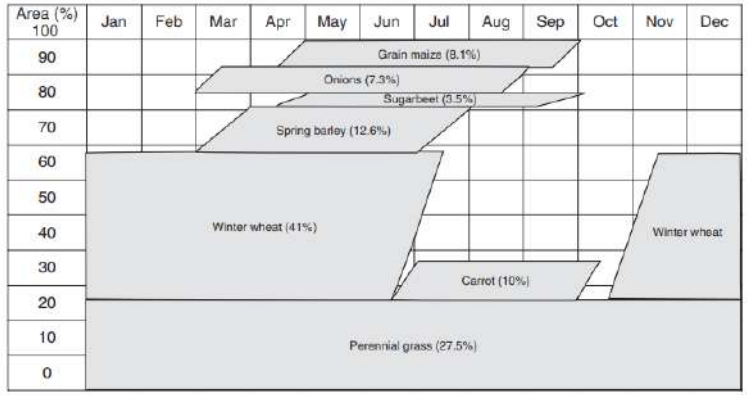
These activities are described in the following slides

Activity 1: Build technical capacity of farmers' groups in managing irrigation systems (1)

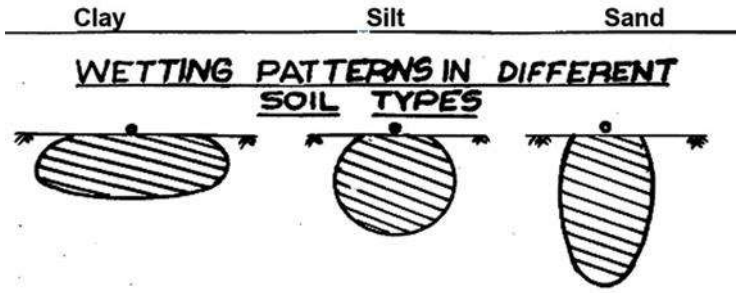
Core training content regarding:

1) Agronomy and climate-smart agriculture :

- Obtaining and understanding Agrometeorological data
- Water Use and Climate-Smart Irrigation Practices, Soil-Water Conservation, and site-adapted crop calendars.
- Climate Mitigation and Adaptation: drought-tolerant variety selection, deficit irrigation protocols, soil health management, and EU Common Agricultural Policy — (CAP) - aligned climate risk tools.



Activity 1: Build technical capacity of farmers' groups in managing irrigation systems (2)

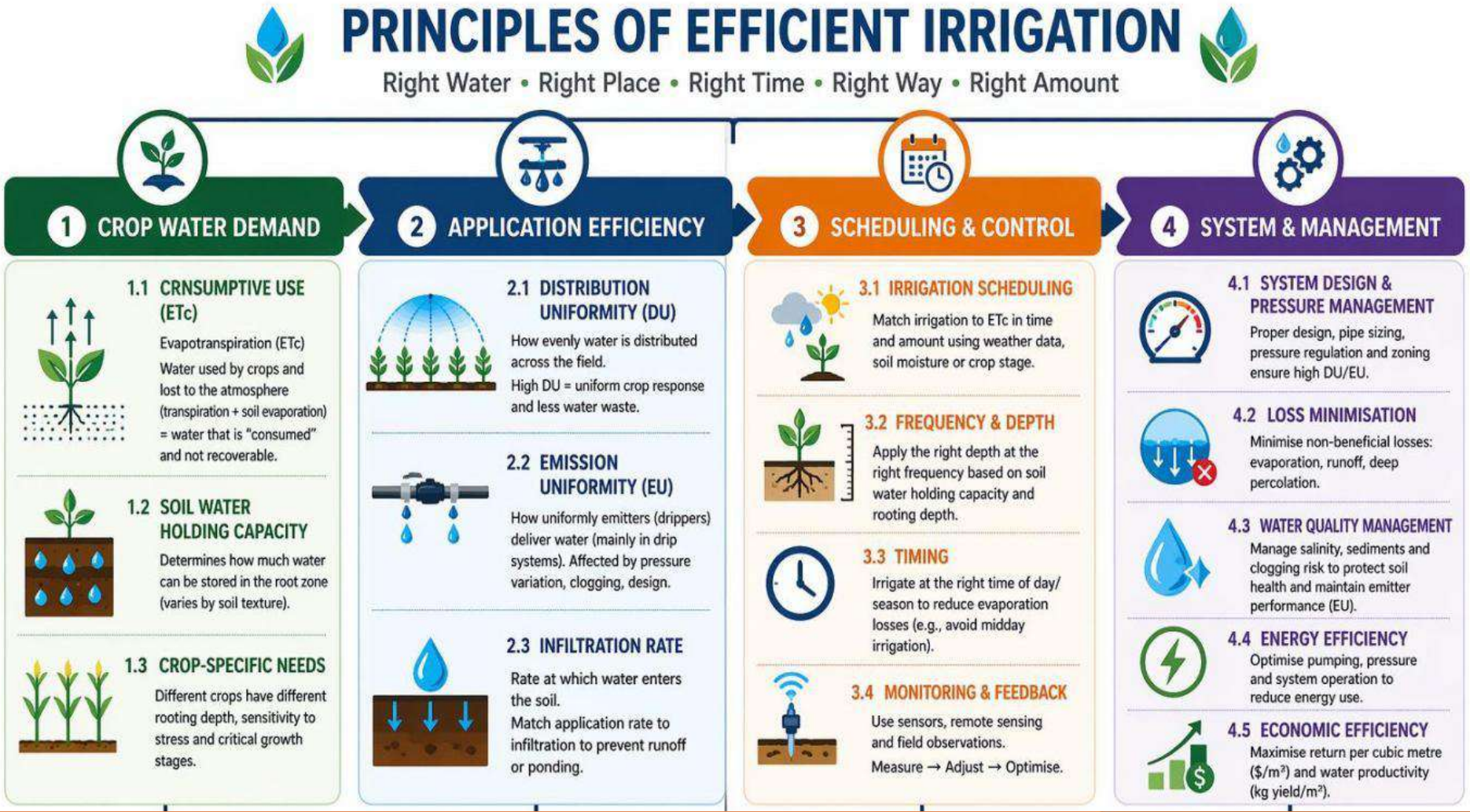


2) On-farm water management

- Principles of efficient irrigation
- On farm irrigation methods: Drip vs sprinkler vs surface, efficiencies, initial investment, pressure/flow measurement and interpretation, filtration, automation basics, troubleshooting low pressure
- Irrigation needs calculation. Irrigation Scheduling

Activity 1: Build technical capacity of farmers' groups in managing irrigation systems (2)

On-farm water management

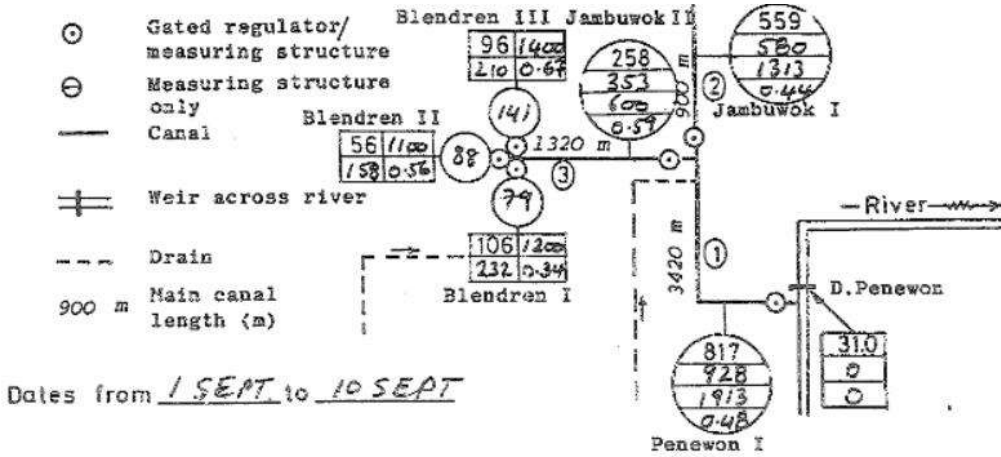


Activity 1: Build technical capacity of farmers' groups in managing irrigation systems (3)

3) System management

- System water distribution methods
- System operation: start-up/shutdown sequences; pressure zones; valve ops; flushing routines → **develop operator checklist**, record keeping

- System preventive maintenance flushing, sediment elimination, air-release, seal and gasket care, filter and air valves cleaning, corrosion prevention of metal components (grease, painting)



Activity 2: Co-design sustainable business models and train farmers in business management

Business Workshops

- Sustainable Business and Financial Planning:
- Business Plan Development: market-driven production planning of group-level business plans and investment concepts, including production, marketing and financial sections

Risk-Sharing Mechanisms and Networking Inter-Group Networking Event

These workshops and peer-to-peer exchange visits among irrigation scheme farmer groups will be developed in the following semesters.

Activity 3: strengthen organisational capacity and governance of farmers' groups

During April and May,

two meetings in each region to identify farmers and existing organisational structures, in cooperation with MAFWE, National Extension Agency (NEA), Municipalities, and JSCWM

- identify motivated farmers with leadership potential
- formation of effective farmers' groups and prepare them to receive technical and organisational trainings

early engagement of farmers from Sopot and Novaci during construction

The Following months, targeted trainings, governance strengthening activities and continuous support to farmers groups.

- **Governance and Leadership Workshops**
  - Governance, Leadership and Collective Decision-Making.
  - On-Site Advisory Support. Mentoring visits to support governance implementation

Activity 4: optimize water resource management at group and system level (1)

The training material for this activity will be prepared during the first 6 months, taking into consideration the findings and needs observed while interacting with farmers during the development of activity 1.

. The activities foreseen are:

- **1st workshop**: optimised water use and climate-smart practices
  - Balancing system capacity, crop needs, and seasonal demand.
  - Linking water use to crop planning and productivity – planning rotations, calendars, and yield optimisation.
- **2nd workshop** Participatory Water Management and Operational Rules
  - Seasonal planning and peak demand management
  - Financial aspects – water pricing, cost recovery, and transparent fee collection mechanisms

Activity 4: optimize water resource management at group and system level (2)

- **2 Consultations** on water pricing and fee collection system among institutions and validation with farmers

- 1 **inter-group networking** event, and **peer-to-peer visits**

The delivery of trainings will be arranged based on the order in which farmers groups are organised and coordinated by the TL according to the different themes to be developed by different experts and farmers groups' availability

Activity 5: strengthen the legal framework for participatory irrigation management

1) Comprehensive Legislative Review

- Compare the national legal framework with the EU legal framework.
- Draft policy and legal adjustment recommendations.

2) Stakeholder consultation to validate legal provisions

- Consultations on policy recommendations – Entering the process of validation of the policy recommendations.

3) Legal and institutional support

- Provide coaching and capacity building across institutions and farmers groups

Activity 6: enhance institutional and operational governance for participatory irrigation management

1) **Organisation of training sessions to MAFWE, JSCWM and municipalities**
- 3 training sessions on the establishment and implementation of PIM

2) Development of context-adapted PIM models
- Creating practical PIM models tailored to North Macedonia's institutional and socio-economic context.
- Clarifying the roles and responsibilities of MAFWE, JSCWM and Municipalities

3) **Organisation of participatory planning sessions**
- Defining governance and coordination between institutions and user groups.
- Mechanisms for joint decisión making and dispute resolution
- Reporting, data sharing, and accountability procedures

MANY THANKS FOR YOUR ATTENTION
I remain at your disposal for any questions.

Ви благодарам многу за вашето внимание.
Ви стојам на располагање за какви било прашања

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