

#bioeconomystrategies

# CIRCULAR REGIONS



BIOMODEL  
4REGIONS

**6 Regions, 1 Goal:  
Advancing Europe's Bioeconomy Together**



## Nitra

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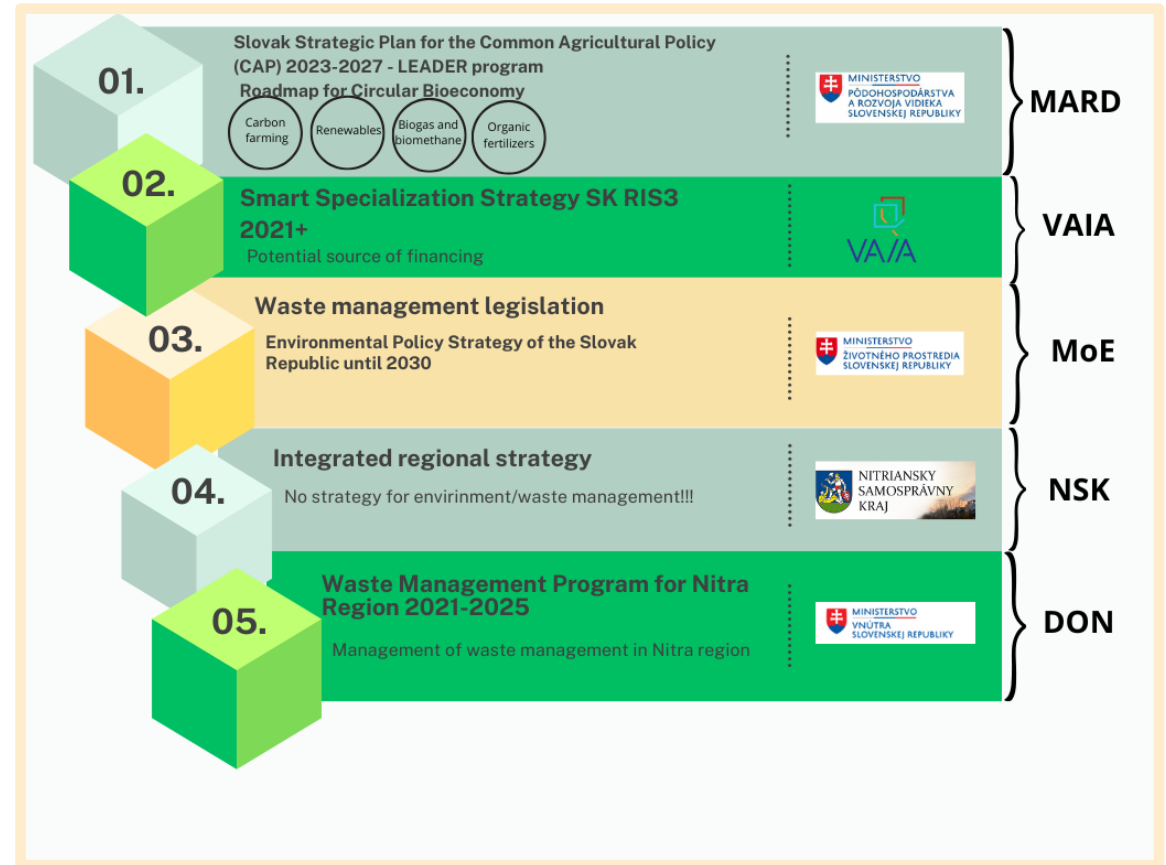
# Nitra Region

Area: 6 343 km<sup>2</sup>  
Population: 673 547



## Characteristics:

- The highest agricultural production in Slovakia
- Vast amounts of biomass
- Predominantly rural, comprising 339 rural municipalities and having the lowest urbanization rate at the regional level in Slovakia.



# TOWARDS A BIO-BASED ECONOMY IN NITRA REGION – From Waste to Value Approach

- Regional bioeconomy strategy focused on a functional waste management system.
  - yield economic savings, create jobs, and significantly improve the environment by reducing carbon footprints and methane generation.
- Key areas:
  - Waste management
  - Agriculture
  - Municipalities

**Significant bioeconomy potential, which can be maximized through efficient waste processing and the return of organic matter to the soil as an added**



# ROLE OF THE BIOECONOMY BLUEPRINT WITHIN THE REGIONAL GOVERNANCE MODEL

## Identified challenges:

- Regional leaders, particularly mayors, identified a significant challenge in the lack of effective communication both top-down and bottom-up.
- Increased cooperation among municipalities could lead to optimized circular bio-based solutions.
- A need for an improved two-way flow of information between policymakers and municipalities.
- Pressing lack of both quantity and quality data regarding municipal waste management.

## Goals:

- Strategic policy alignment
- Empowering municipalities and local stakeholders
- Cross-sector collaboration and stakeholder engagement
- Data-driven decision making and transparency
- Fostering a culture of sustainability and awareness
- Economic and environmental resilience

# BEST PRACTICE- ASSOCIATION OF MUNICIPALITIES FOR WASTE MANAGEMENT IN NITRA REGION (PZO)



● Public nonprofit established in 2005, uniting 57 municipalities in the Nitra region.

- Serves 84,000 residents across 25,000+ households.
- Pioneering regional cooperation model for sustainable waste management.



♻ Operates a composting facility processing 15,000 tons/year of bio-waste (grass, plant residues, kitchen waste).

- Digitalized waste tracking using smart weighing systems.
- Exploring biomethane production to fuel their own fleet and cut emissions.
- Converts waste into high-quality compost, improving soil health and supporting academic research.



# WASTE MANAGEMENT MODEL BASED ON PZO APPROACH

- Intensifying/Improving separated waste collection in the Nitra Region
- Improved collection infrastructure
- Collection frequency and methods
- Incentive-based waste fee system + weighing of all municipal waste
- Public awareness and education



# CHALLENGES

- ✘ Limited expertise,
- ✘ Fragmented institutional strategies and lack of coherence,
- ✘ Insufficient local capacity for strategy development,
- ✘ Inadequate communication from policymakers to municipalities,
- ✘ Absence of a quadruple helix approach,
- ✘ Shortage of relevant data and best practice knowledge sharing,
- ✘ Insufficient involvement of bio-based businesses in local governance,
- ✘ Lack of a regional framework that integrates competencies across water, soil, waste, and environmental management,
- ✘ Limited end-processing infrastructure for separated waste commodities (e.g., plastics, paper, glass),
- ✘ Need for better coordination at the regional level, especially given Nitra's role as an agricultural hub, and
- ✘ Recognition of waste as a valuable commodity with further processing potential.

# VISION FOR THE BIO-BASED ECONOMY IN NITRA REGION

## **Thriving circular economy**

- utilizing local resources, minimizing waste, integrating sustainability into daily life

## **Sustainable resource management**

- turning waste into compost and bioenergy, improving soil health, supporting carbon farming

## **Economic resilience**

- creating jobs, supporting regional business models, investing in green technologies

## **Environmental stewardship**

- recycling, organic farming, protecting biodiversity, enhancing soil and ecosystem health

## **Collaboration & innovation**

- connecting local governments, research, communities, and businesses to co-create sustainable solutions



Thanks for the attention!

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