



Assessment of agriculture production through NAEZ and LRIMS and scenario development in the Republic of North Macedonia

The Project (TCP/MCD/3602)

GOAL

The main goal of the project is to improve agricultural production and increase adaptive capacity of the Republic of North Macedonia, by establishing National Agro-Ecological Zoning (NAEZ), a Land Resources Information Management System (LRIMS) and Scenario Development to better inform policy at national level and climate risk reduction and adaptation at local level.

OBJECTIVES



To improve the national capacity of analysis and interpretation of agricultural production systems and natural resources information, combined with information generated from remote sensing, for supporting agricultural policies and food security in the country.



To enhance food production and provide various livelihood opportunities to the farming community.



To train national, provincial and local staff in agricultural analysis, data collection and land resources information management systems optimized by geospatial technology.



To expand project results, lessons and developed strategies at national level

IMPACT

Agricultural monitoring and production system and land-use planning are strengthened, and the government adopts an improved national policy and strategies for increasing and diversifying production potential and the development of recommendations and pathways for achieving sustainable and diversified land use.

COMPONENTS

Strengthening institutional and technical capacity for monitoring and analysis of agricultural production systems and development of **National Agro-Ecological Zoning (NAEZ)** and **Land Resources Information Management System (LRIMS)**.

1

Strengthening agricultural analysis, communication, and physical and socio-economic scenario development for decision-making.

2

Knowledge management, dissemination and application of information at local level, including integrating lessons learned into planning.

3

STAKEHOLDERS

- **Government institutions and staff** at central level (Ministry of Agriculture, Forestry and Water Economy and related departments) and provincial level.
- **Farmers**
- **National sectoral institutions, international organizations and NGO's** currently involved in related activities
- **Decision-makers** (central/provincial level)

STRATEGY



OUTCOME 1

Enhancing, monitoring and analysing national agricultural production systems through development of National Agro-Ecological Zoning (NAEZ) and Land Resources Information Management System (LRIMS)

OUTCOME 2

Enhanced national capacity on NAEZ and LRIMS assessment to support evidence-based decisions. Knowledge management, dissemination and application of information and lessons learned for decision-making through farmer field schools (FFS).

EXPECTED RESULTS

- 1.1** National Agro-Ecological Zoning framework for local assessments of risk-zoning and hotspot identification (e.g., for biophysical threats), crop potential, potential yields, and yield gaps for multiple crops under different input levels and climate scenarios is developed.
- 1.2** Established Land Resources Information Management System (LRIMS) to guide policy-makers in developing appropriate policies and plans for various land uses (especially agriculture) and providing location-specific adaptation options for farmers.
- 1.3** Impact scenarios of water availability, crop yield and socio-economics for all major agro-ecological zones, and adaptation strategies to support evidence-based decisions in planning and management of the agricultural and natural resources sectors in the country are developed.

EXPECTED RESULTS

- 2.1** Technical capacity for sustained operation and use of NAEZ and LRIMS for land and water suitability and production under climate change scenarios adapted to FYR Macedonia conditions; as well as policy formulation and adaptation planning in the agricultural sector are developed.
- 2.2** Farmer field school (FFS) activities in the local application of generated information and location-specific adaptation scenarios and strategies facilitated.
- 2.3** Knowledge and information sharing for local application, agricultural and food security planning and programming and project outcomes/outputs monitored and evaluated to ensure sustainability.

METHODOLOGY

National Agro-Ecological Zone (NAEZ)

FAO's agro-ecological zoning (AEZ) is the main system for land resource assessment for application at global, regional, national and sub-national levels.

The FAO agro-ecological zones (AEZ) methodology:

- determines agricultural production potentials (rainfed or irrigated) and carrying capacity of the world's land area;
- comprises grid cells on a georeferenced map that have uniform soil, landform and climate characteristics and evaluates the suitability of each of these zones for crop production under different input and management scenarios. The yield potential of the crops most suited to each zone determines the overall agricultural production potential of that zone;
- uses land resources information (LRI) system to assess, for specified management conditions and levels of inputs, all feasible agricultural land-use options and to quantify anticipated production of cropping activities relevant in the specific agro-ecological context.

Land Resources Information Management Systems (LRIMS)

LRIMS is a data management and analysis system which integrates various functionalities and methodologies into one processing environment. LRIMS:

- offers a suite of user friendly information management and analysis tools organized into a toolbox;
- provides a straightforward access to organizational data and metadata;
- contains query, analysis and map-building functions allowing standardized analysing, monitoring and forecasting;
- allows assessments of the physical/socio-economic conditions of the land and the evaluation of the benefits and constraints of different options through the simulation of various scenario.

