



PHARE 2005 / 017 – 690.01.01

Project: « Contributions to the development of the Flood Risk Management Strategy in Romania »

EuropeAid/123064/D/SER/RO

Euro RIOB 2008 : « Floods Directive »

2 October 2008

- Presentation of the PHARE Project « Contributions to the development of the medium- and long term National Flood Risk Management Strategy »
- Flood Risk Management: main principles as seen by SCE
- First step in implementing the European Floods Directive in Romania: the preliminary analysis



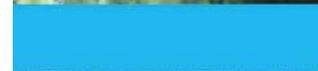
I – “Flood risk”: context of the project

Floods occurred on an extended scale in Romania in 2005, affecting more than 1,5 million people, 43 000 houses, 590 social facilities and buildings, 4 682 bridges and 10 334 km of roads. Immediately after the three big flood events which had disastrous consequences in Romania, the Government decided the elaboration of a national short-term flood risk management strategy.

The object of the project is to elaborate a medium- and long-term strategy

Contracting authority: Ministry of Economy and Finance of Romania

Implementing Authority and Beneficiary: Ministry of Environment and Sustainable Development of Romania, National Administration « Apele Romane »

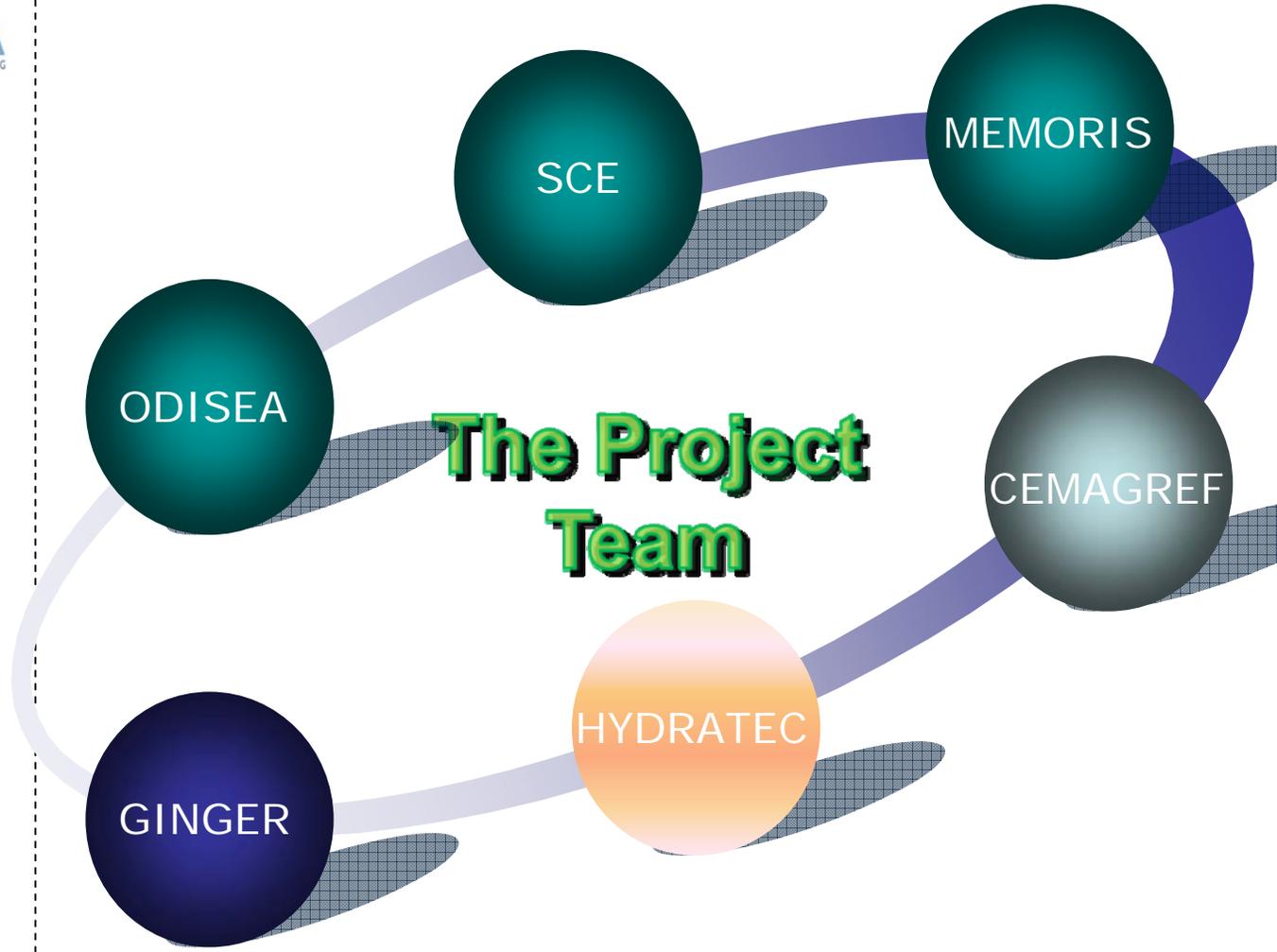




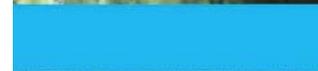
AMENAGEMENT & ENVIRONNEMENT



The Consortium

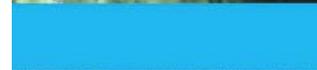


The Project activities



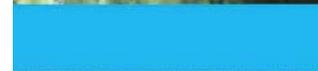
Main context for the strategy

- **A new framework**: the Floods European Directive, based on best practices in Europe regarding flood mitigation
- **A new context**: the human, environmental, social and economical consequences of floods in Europe are more and more heavy and have reached unacceptable levels
- **A new concept**: mitigate flood risk means both reduce inundation on vulnerable zones and reduce vulnerability of all assets in flood prone areas
- **A new approach**: any flood risk mitigation project should be carried out through a cost / benefit analysis after analysing different kinds of solutions, based on structural and non-structural measures
- **A new organization**: non-structural measures need involvement of all stakeholders and of the population, to reduce all potential harmful consequences of floods



Six main specific project outputs will be brought out:

- An adapted methodology for flood and flood risk maps drawing up
- An adapted methodology for flood-induced direct damage assessment
- An adapted methodology for the determination of social flood risk acceptability
- An adapted Unitary System for public information and education concerning flood risk, aiming to make all concerned populations to learn how to live with flood risk
- An Action Plan for the implementation of the flood management strategy, including public awareness campaign aspects
- Dissemination actions including the preparation of documents, a press conference and a workshop concerning the results of the project



II - Flood Risk Management Strategy as seen by SCE

International context and feedback:

Globally speaking, the main ideas developed today over the world regarding flood risk are as follows:

- **Flood risk reduction must be a general concern and priority**
- **The old traditional approach based on flood control must be abandoned: decision-makers should focus on flood risk management**
- **Flood risk management must be regarded as a subset of the Integrated Water Resources Management, which supposes the respect of its principles and framework**
- **Balancing development needs and risks is essential: there is inevitably a need to find ways of making life sustainable in flood plains, even if there is a risk to property. This point emphasizes the importance of developing resilience**



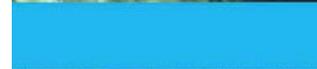


"Climate change is expected to cause more severe and more frequent natural hazards. As our cities and coasts grow more vulnerable, these hazards can lead to disasters that are far worse than those we have seen to date. We have a moral, social and economic obligation to build resilience by 2015. Implementing the Hyogo Framework for Action will also help us reach the Millennium Development Goals."

*Ban Ki-moon,
Secretary-General of the
United Nations*

Five priorities for action:

- 1) Make disaster risk reduction a priority
- 2) Know the risks and take action
- 3) Build understanding and awareness
- 4) Reduce risk
- 5) Be prepared and ready to act



The “*Water Framework Directive*” (WFD – 2000/60/E)

The “*Floods Directive*” (2007/60/EC)

Best practices in Europe as detailed in the **FLOOD-SITE Project** confirm that the most effective approach is the development of flood risk management programmes incorporating the following elements:

- ❑ **Prevention:** preventing damage caused by floods by avoiding construction of houses and industries in present and future flood-prone areas, by adapting future developments to the risk of flooding, and by promoting appropriate land-use, agricultural and forestry practices;
- ❑ **Protection:** taking measures, both structural and non-structural, to reduce the likelihood of floods and/or the impact of floods in a specific location;
- ❑ **Preparedness:** informing the population about flood risks and what to do in the event of a flood;
- ❑ **Emergency response:** developing efficient emergency response plans in the case of a flood;
- ❑ **Recovery and lessons learned:** returning to normal conditions as soon as possible and mitigating both the social and economic impacts on the affected population.



Essential concepts for Flood Risk Management

Major challenges to be considered:

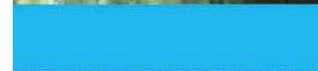
- no absolute protection
- avoiding fatalities is the first priority
- a basin approach should be a common rule
- flood risk policy should be integrated in an ecosystem approach
- climate variability and change should be integrated as an adverse component
- potential changes in decision-making and in the societal context should also be integrated

Flood Risk Management should be regarded as a component of any development process to achieve sustainable development

Importance of the context:

- a dynamic and adaptive approach for an evolving context
- numerous sources of uncertainty
- an existing context and organisation needing arrangements as a basis for any national flood risk management strategy
- a socio-economical context to be assessed

Flood Risk Management aims at reducing all harmful consequences of floods



General framework for Flood Risk Management

An integrated Flood Risk Management

A dynamic Flood Risk Management

An adaptive and evolving Flood Risk Management

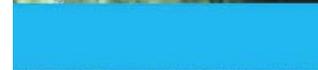
A decentralised Flood Risk Management

Transparency and participation

Effective and Efficient assessment of the societal context

Respect of essential general principles

Duties, responsibilities and decision-making within a multi-dimensionnal framework



Pre-requisites to implement a Flood Risk Management Strategy



A clear and consistent policy

Legislation and regulation instruments

Control, inciting and coercive tools

Institutional arrangements and appropriate linkages

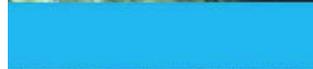
Decentralisation, a community-based approach

Exchange and management of information

Management of emergency situations

Appropriate assessment tools and methods

Feedback, building of resilience



III – Preliminary analysis in Romania

Data identification and collection

Elaboration of a methodology based on the existing knowledge and data sets

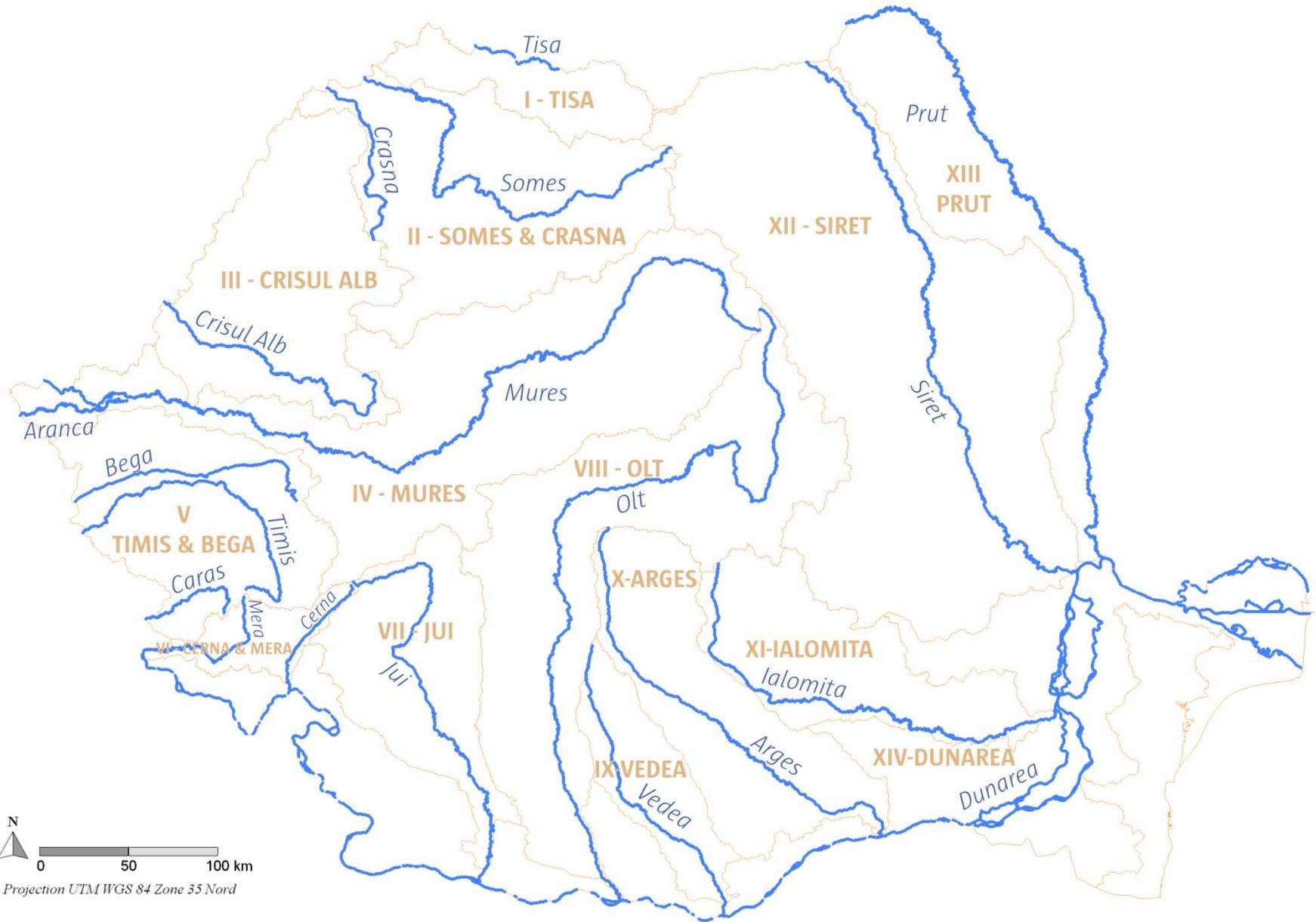
Use of GIS

Data processing at the river basin scale

Dissemination tools and formats adapted regarding the main objectives of the preliminary analysis

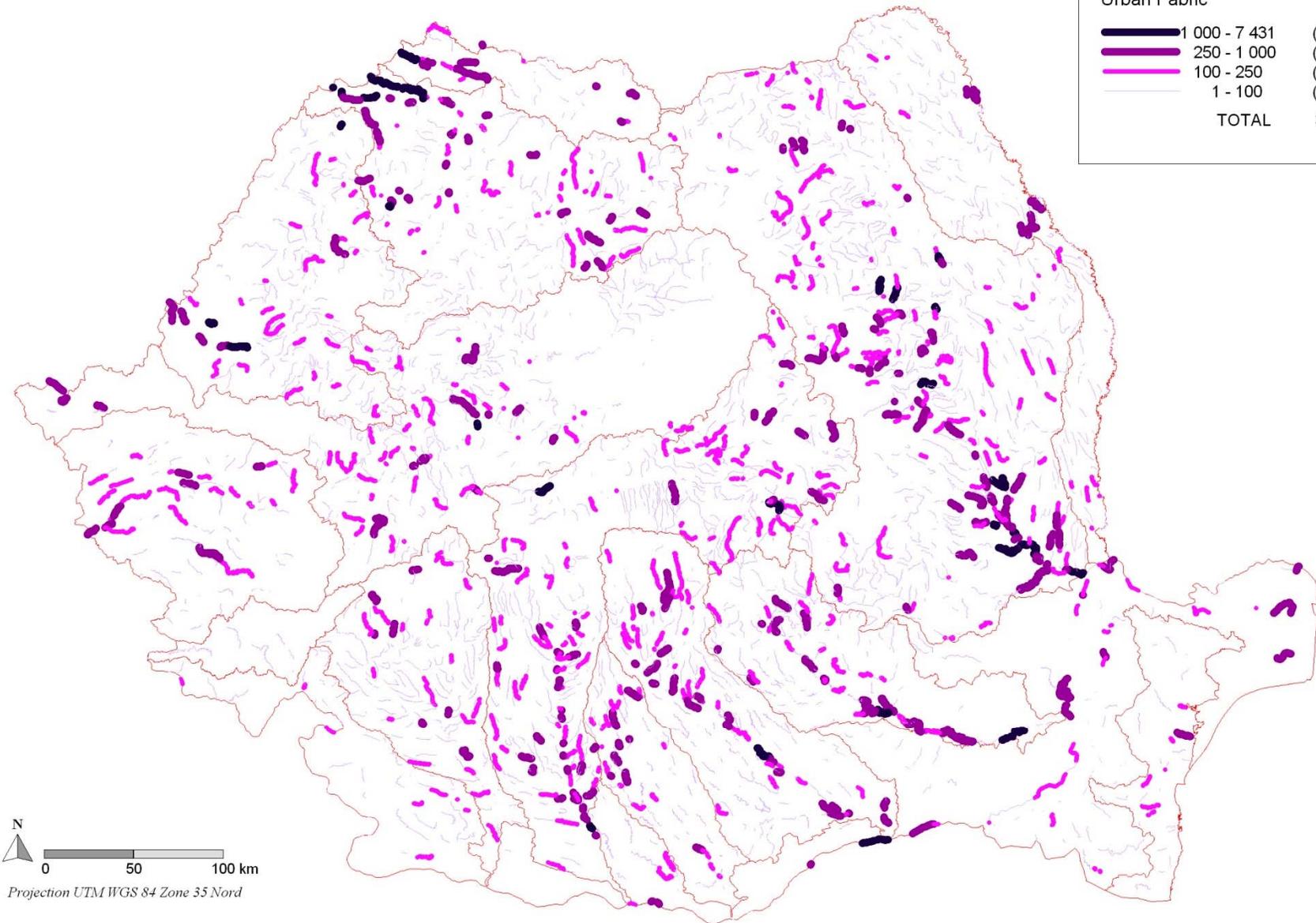
**Romania might be in advance regarding the
Floods Directive !**



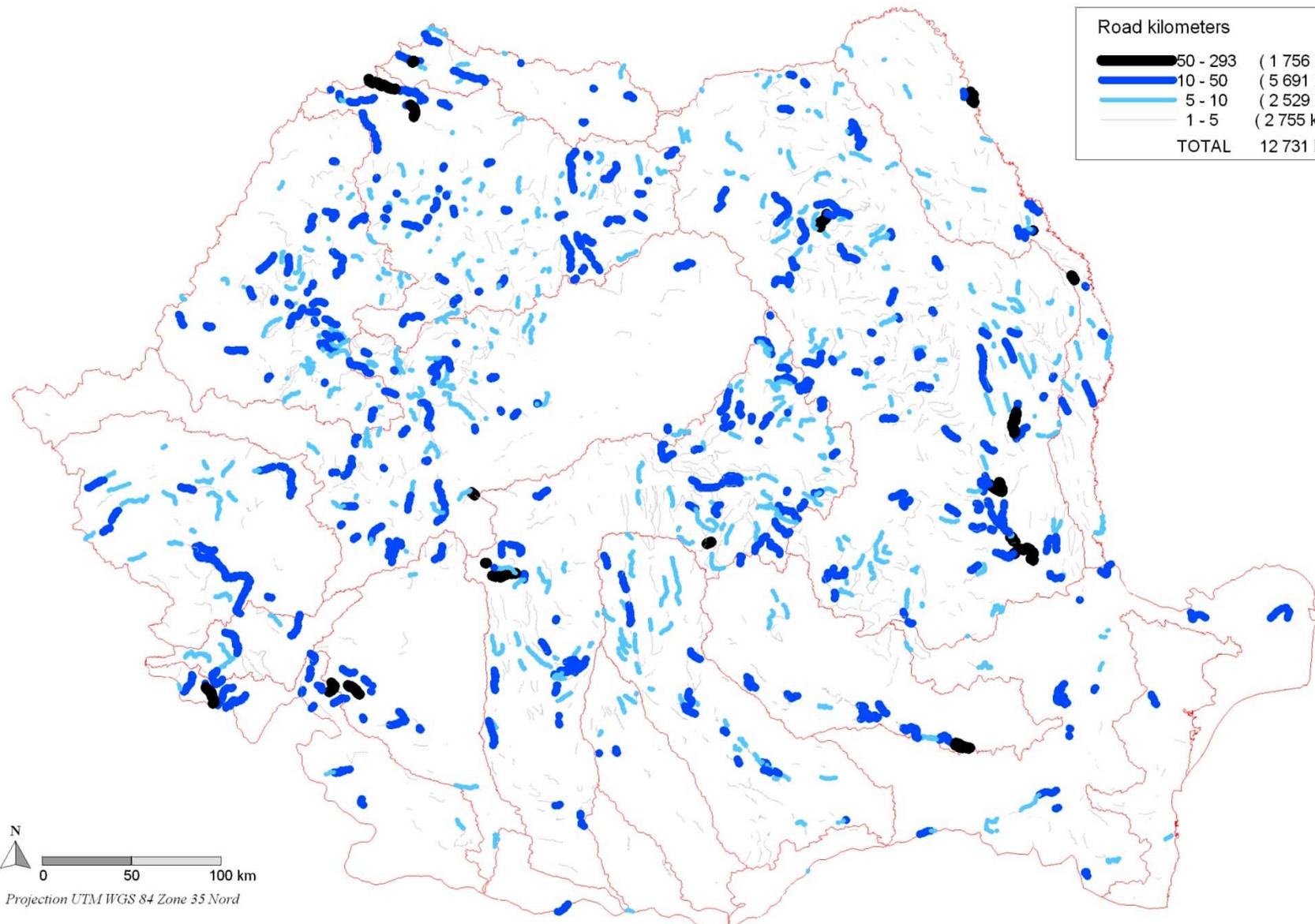


Urban Fabric

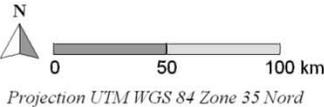
	1 000 - 7 431	(68 469 units => 301 263
	250 - 1 000	(92 132 => 405 380 800 €
	100 - 250	(70 927 => 312 078 800 €
	1 - 100	(78 309 => 344 559 600 €
TOTAL		309 837 =>1 363 282 800

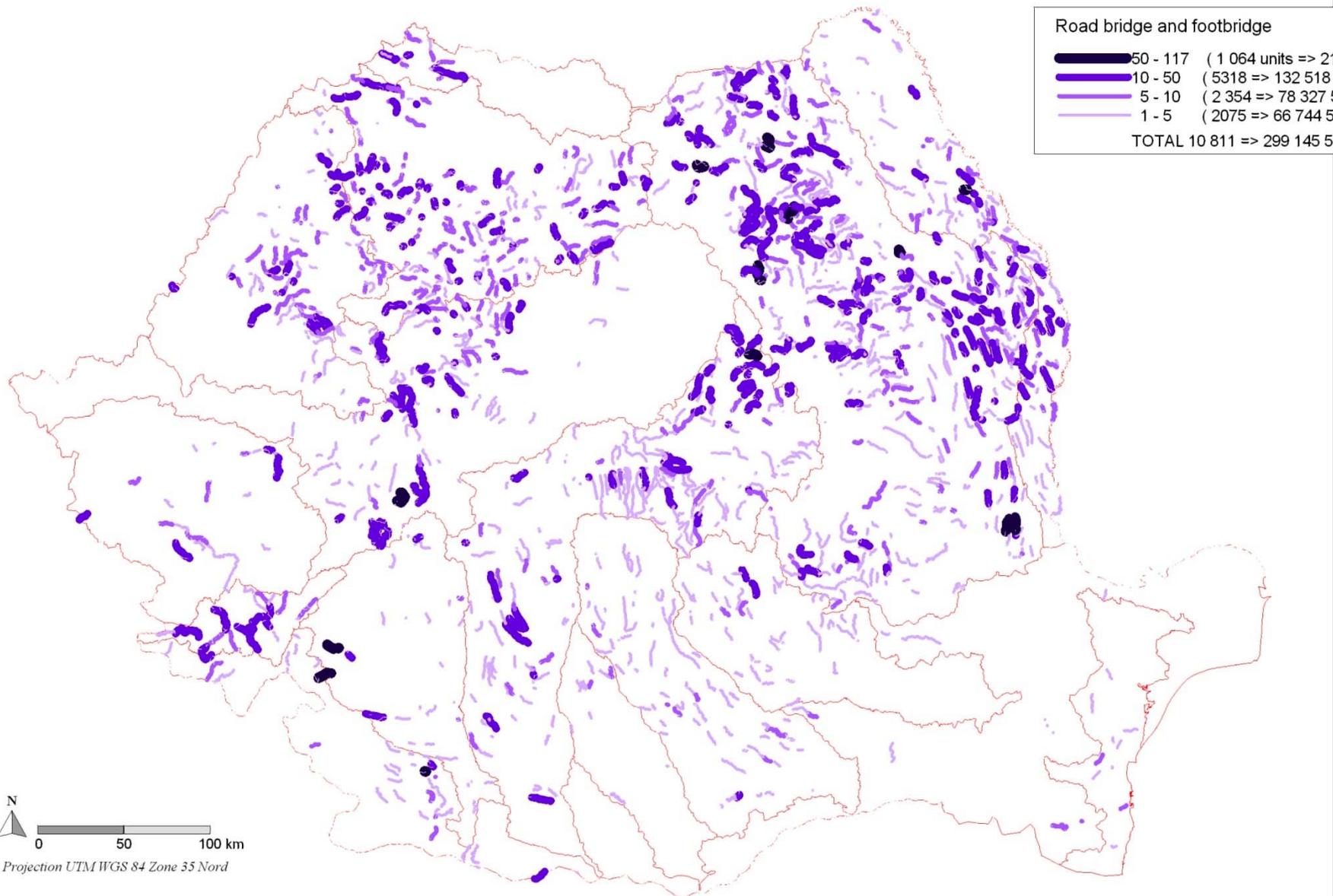


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0 50 100 km
Projection UTM WGS 84 Zone 35 Nord

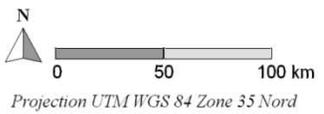
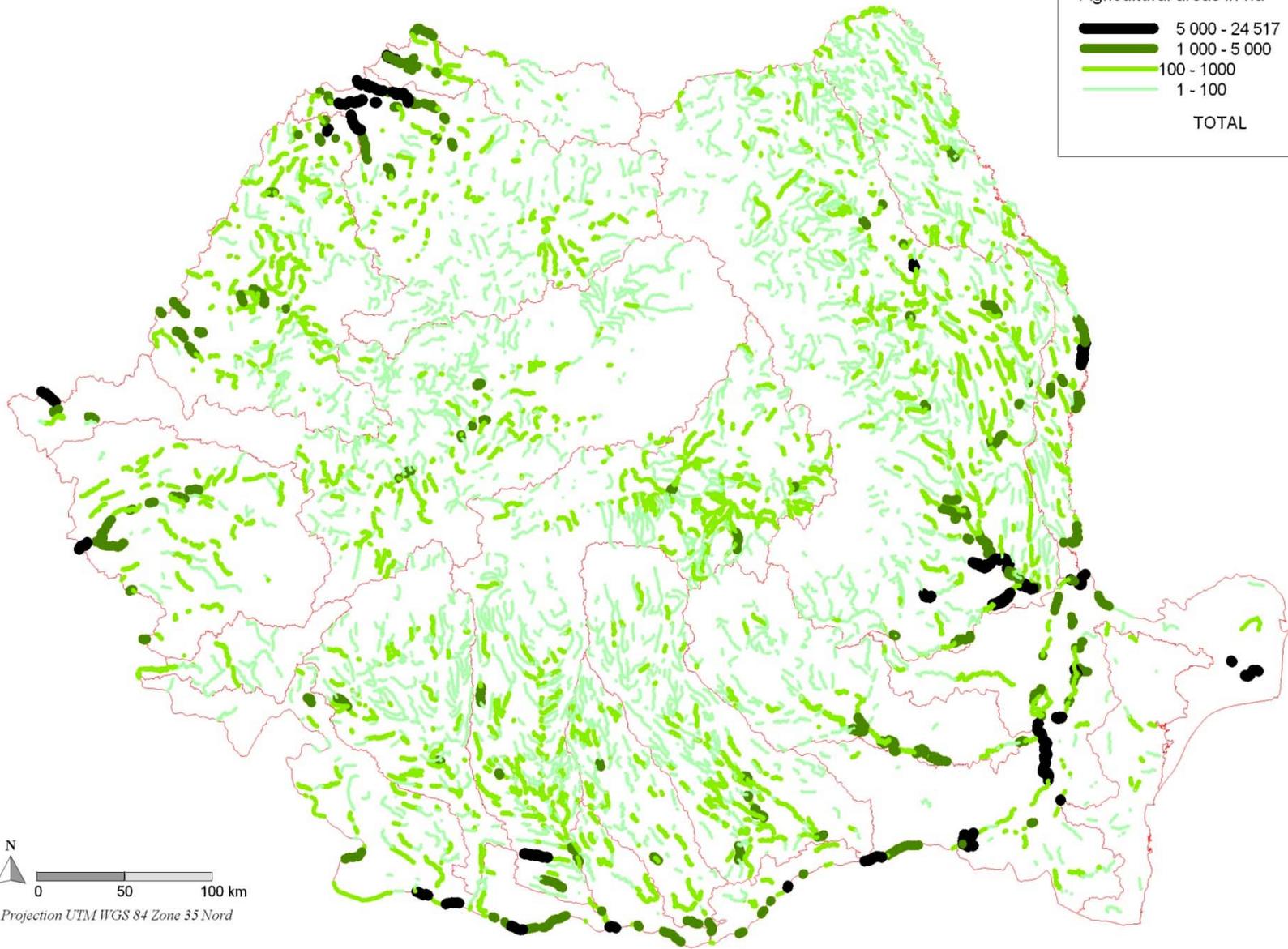


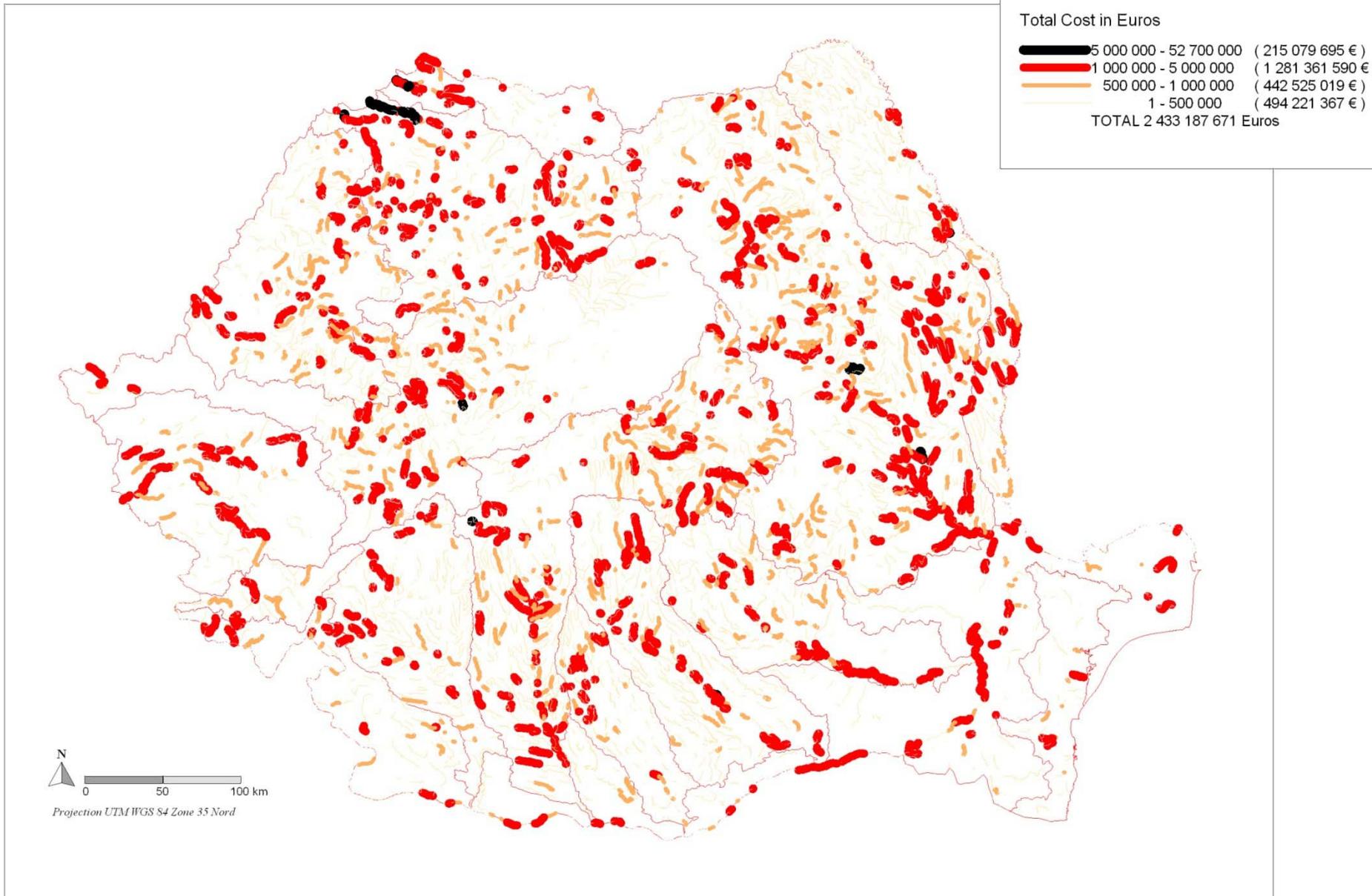
Road kilometers	
50 - 293	(1 756 km => 87 869 400 €
10 - 50	(5 691 km => 267 586 660 €
5 - 10	(2 529 km => 100 474 910 €
1 - 5	(2 755 km => 124 020 340 €
TOTAL	12 731 km => 579 951 310 €

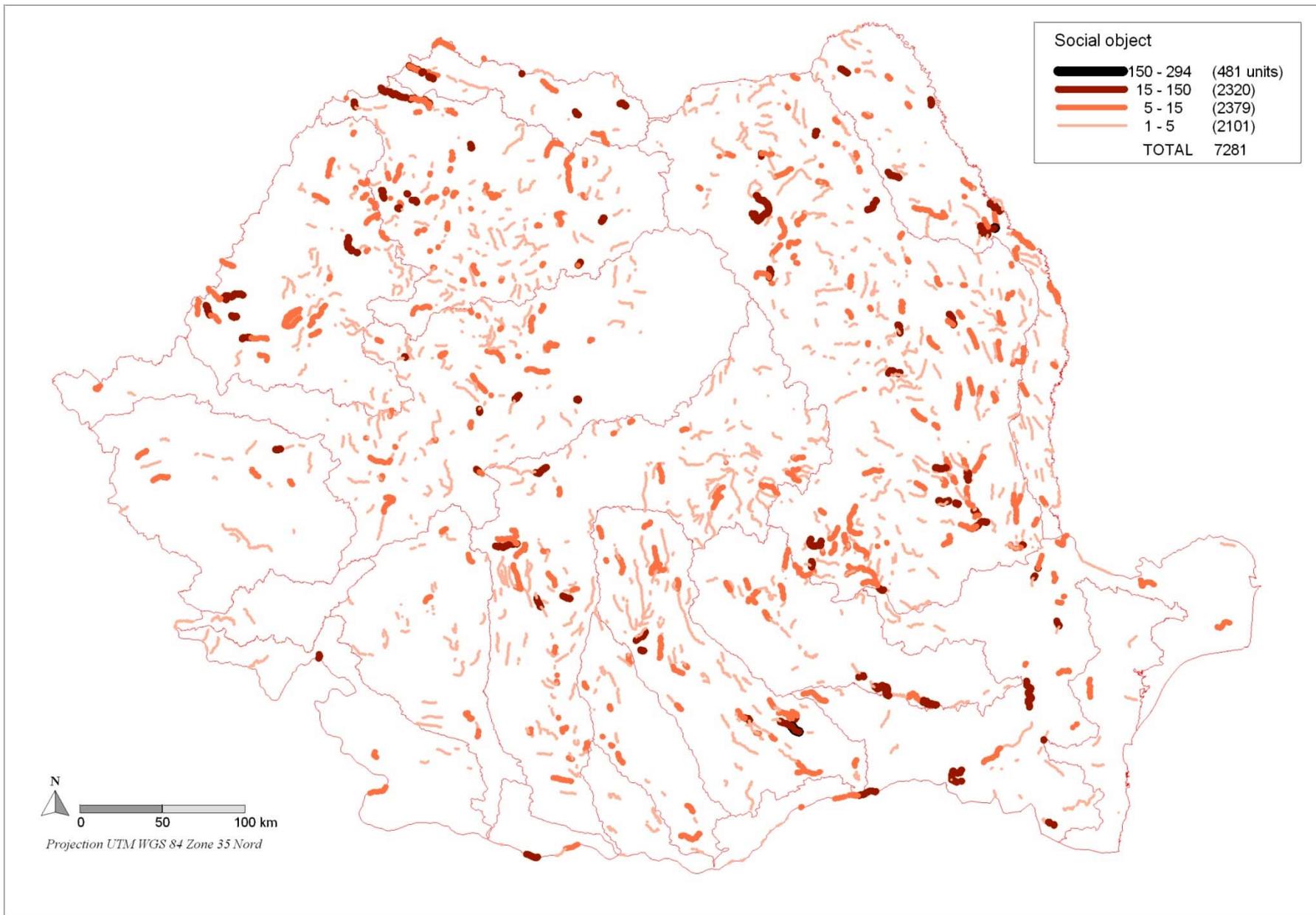




Agricultural areas in ha		
	5 000 - 24 517	(325 166 ha => 58 099 756
	1 000 - 5 000	(329 357 ha => 57 757 887
	100 - 1000	(369 835 ha => 62 779 220
	1 - 100	(72 709 ha => 12 171 198 6
TOTAL		1 097 067 ha => 190 808 06

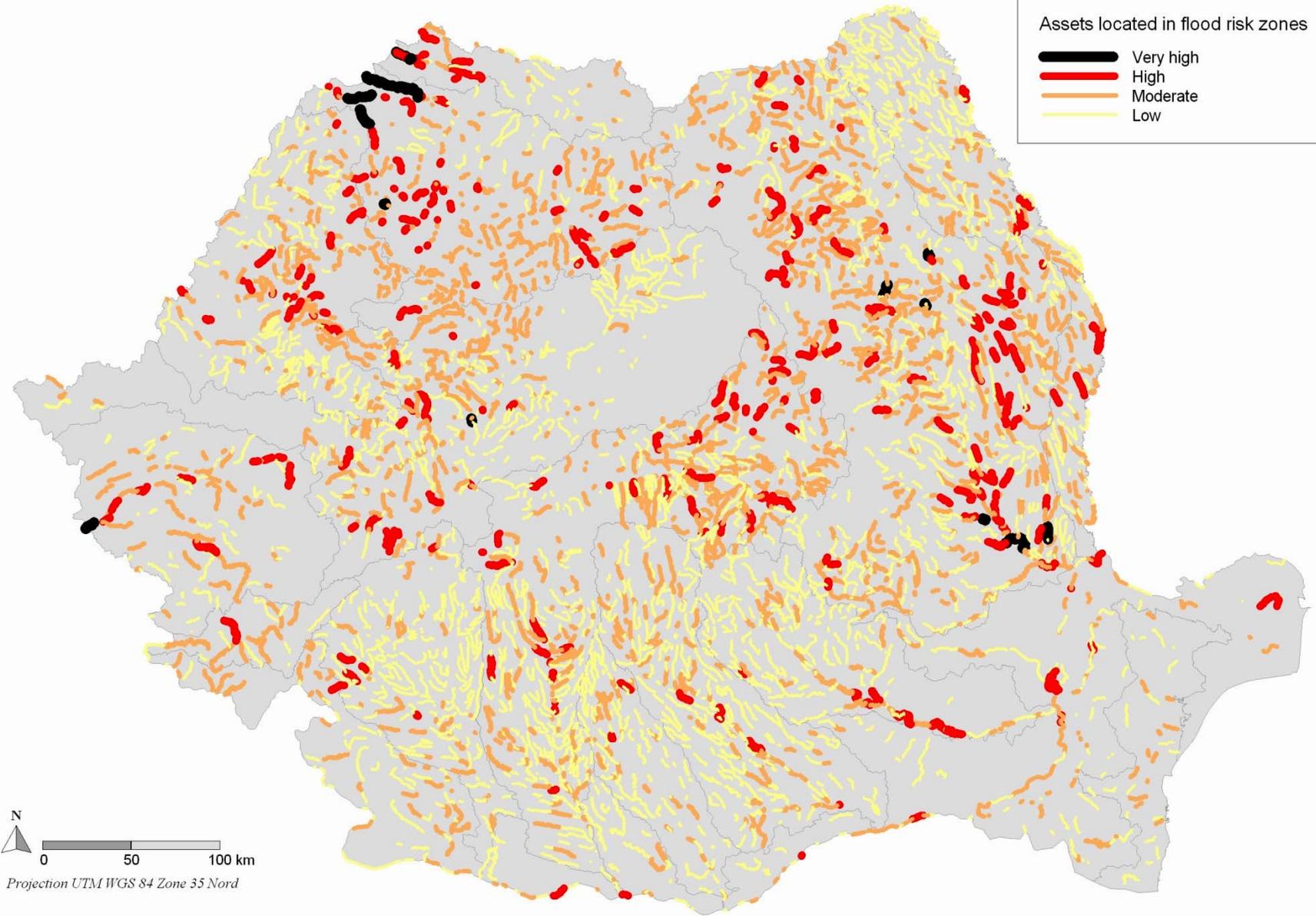






Assets located in flood risk zones

- Very high
- High
- Moderate
- Low



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0 50 100 km
Projection UTM WGS 84 Zone 35 Nord