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The JRC assessment of the Water-Agriculture-Energy-Ecosystem Services Nexus

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Geneva, 8-9th September 2014

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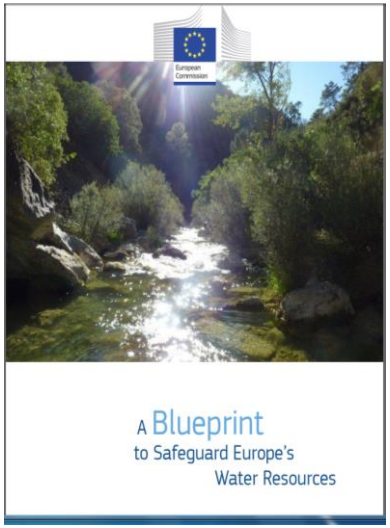
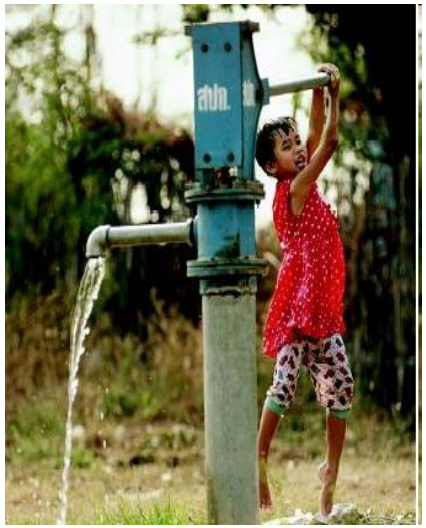
Moving from water silos to integrated policy making

- The 2012 EU Water Blueprint recommends to strengthen synergies across policies and water-using sectors when setting water efficiency targets and developing programmes of measures in River Basin Management Plans



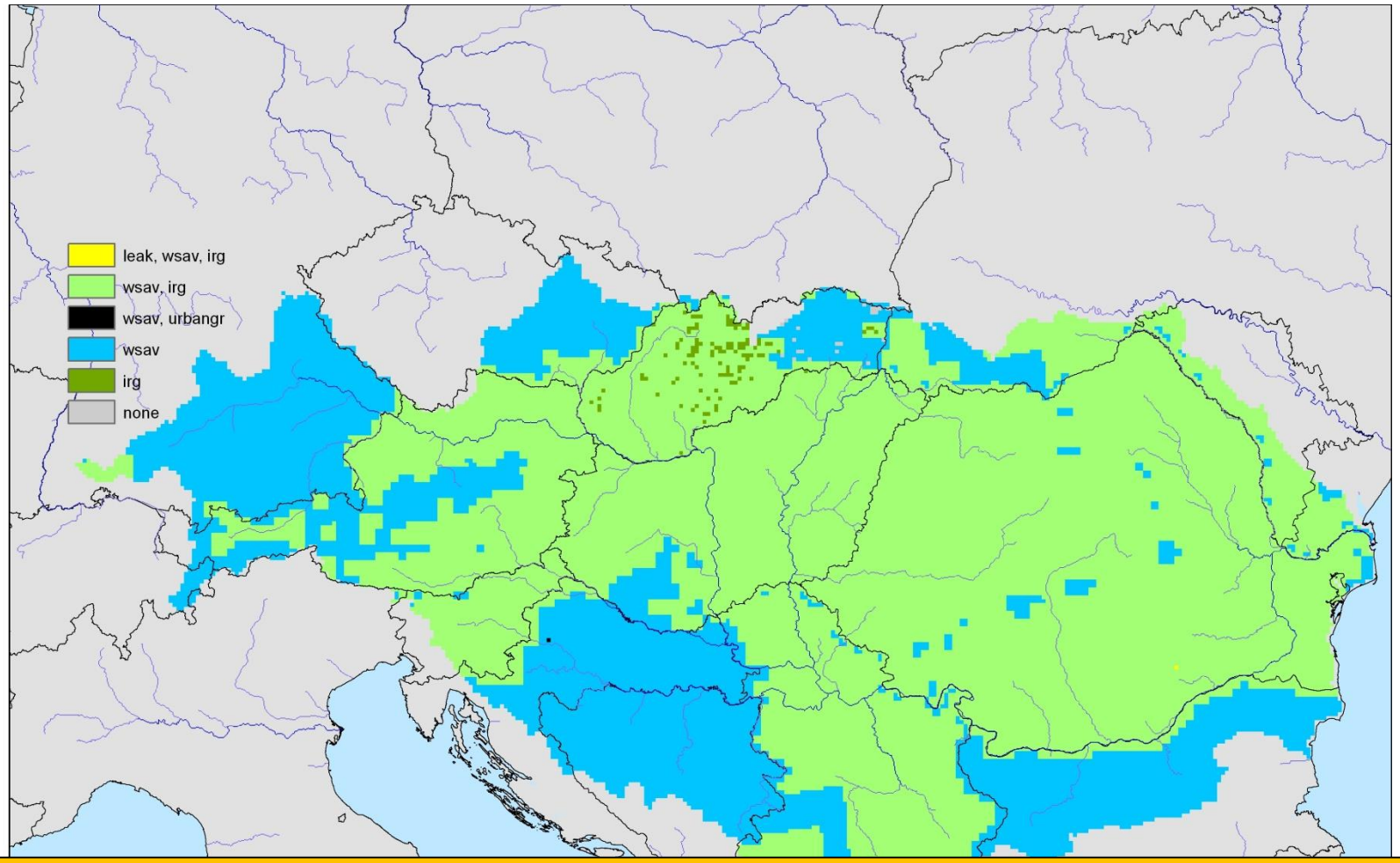
- The Agenda for Change identifies the Water Nexus as a key element of the 2014-2020 thematic programmes of EU development cooperation focusing on water for energy and agriculture and the enhancement of ecosystem services



Supporting decision making and capacity building

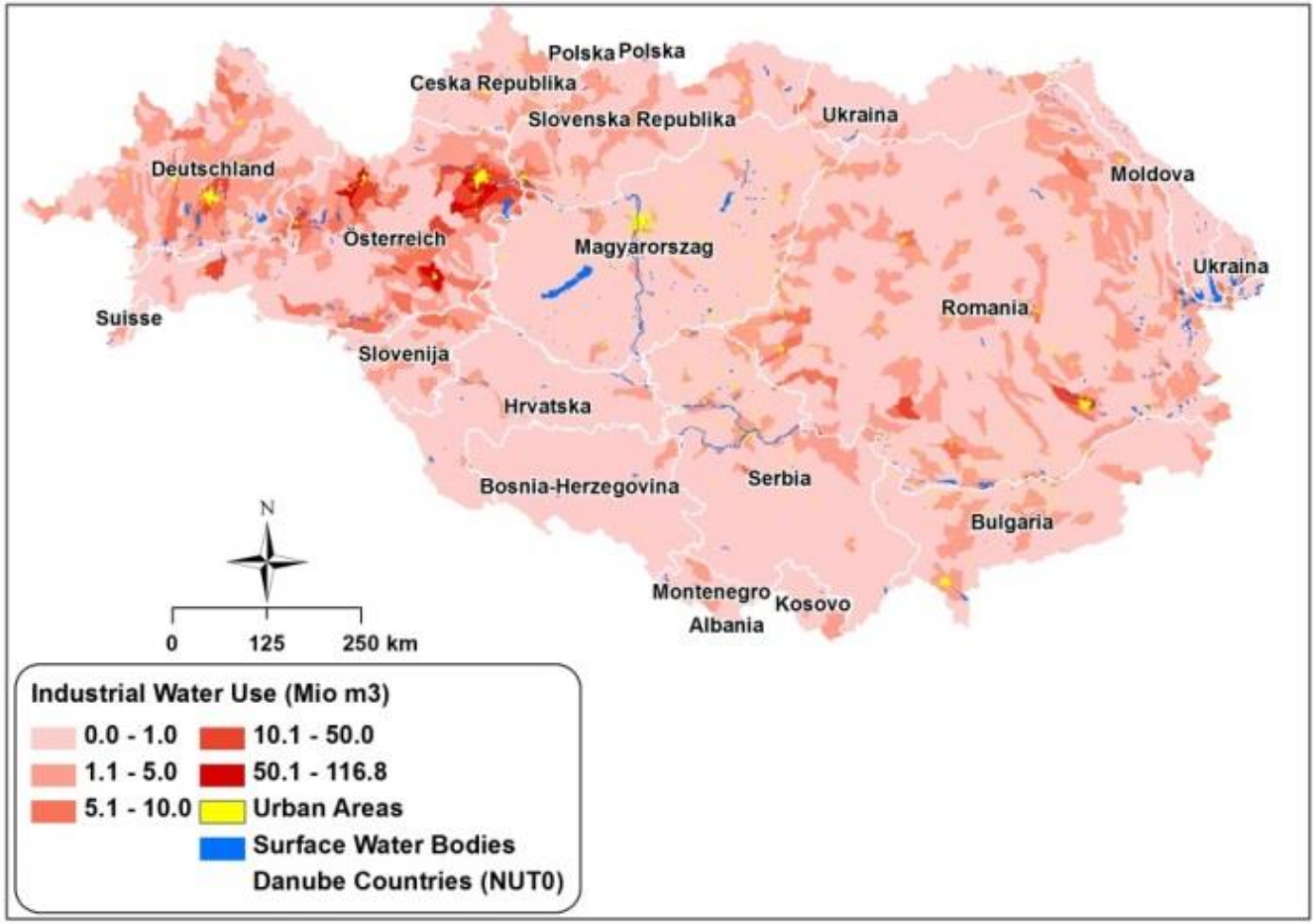
Testing scenarios for spatial planning of measures in the Danube river basin for the year 2030

Maximizing water availability and minimizing impacts on ecological flow



Leakage reduction only in Bucharest - Urban Greening only in Zagreb - No water reuse in industry in Bulgaria - No desalination

Assessment of sectorial water use baselines in the Danube river basin



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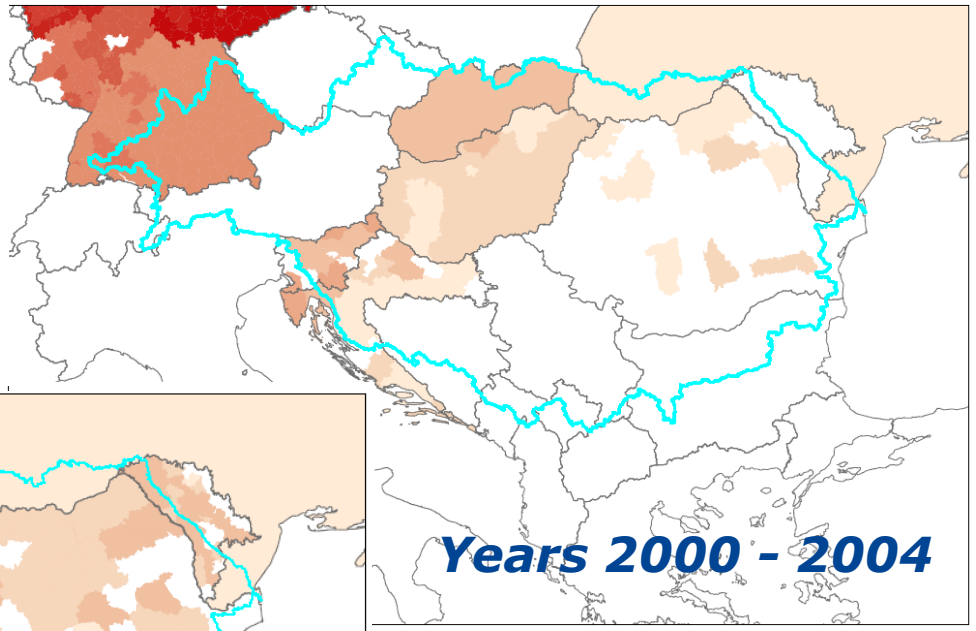
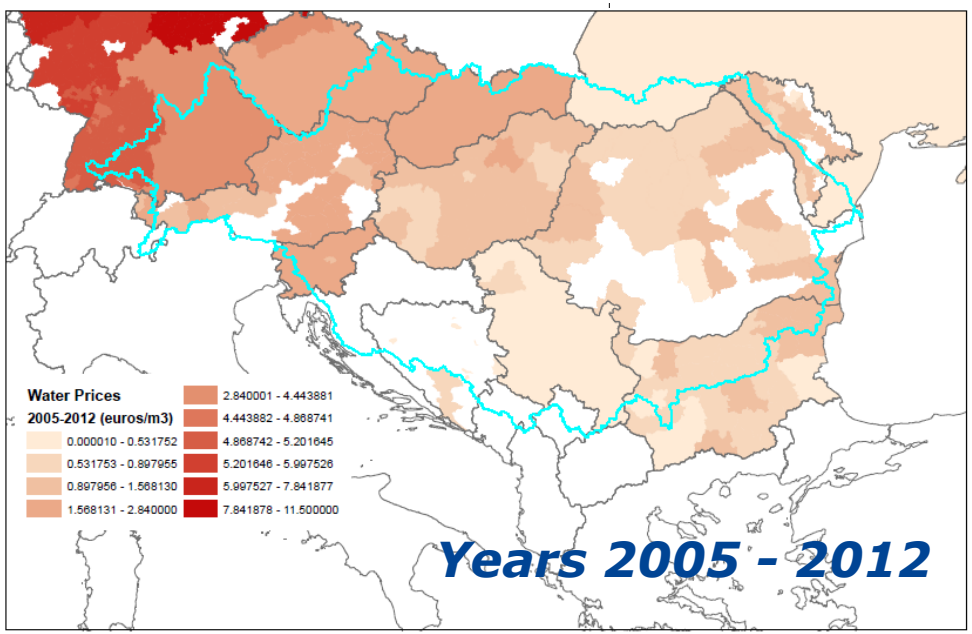
Accounting for costs of sectoral water demand

EURO/m³
household water

0 – 0.5	2.8 – 4.4
0.5 - 0.9	4.4 – 4.9
0.9 – 1.6	4.9 – 5.2
1.6 – 2.8	5.2 – 6.0
	6.0 – 7.8
	7.8 – 9.0



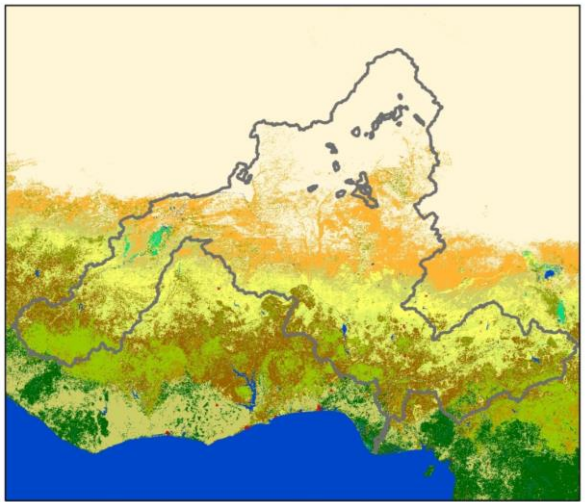


The timetable for delivery

January 2014	3rd Technical Meeting
January 2014	Specification data needs
June 2014	4th Technical Meeting
October 2014	Model inventory
October 2014	Available scenario inventory
November 2014	5th Technical Meeting
March 2015	Deliverable Scenarios (land use and climate scenarios)
June 2015	Deliverable Pilot River Basin results
December 2015	Deliverable Integrated Modelling Toolbox
December 2015	Deliverable Impacts of Scenarios

Water for food, energy and ecosystems in the Niger river basin

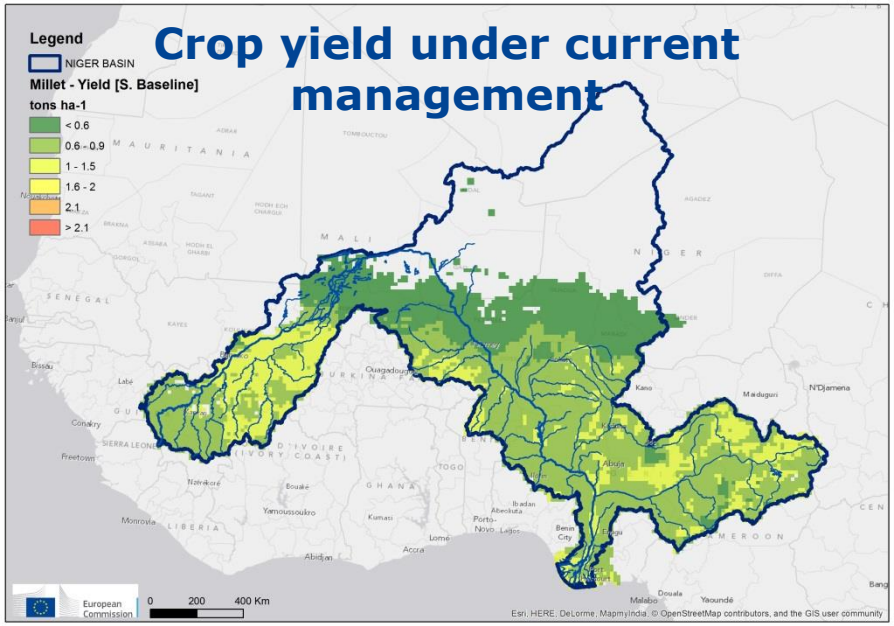
- How to improve allocation of water especially in the dry season?
- What are the most suitable areas for agriculture development and those at risk of flooding?
- Which impacts on water quality and land degradation may we face in the future?
- What socio-economic scenarios can be expected, taking into account crops yield and their economic value, markets accessibility, tradeoff between irrigated and rainfed agriculture?



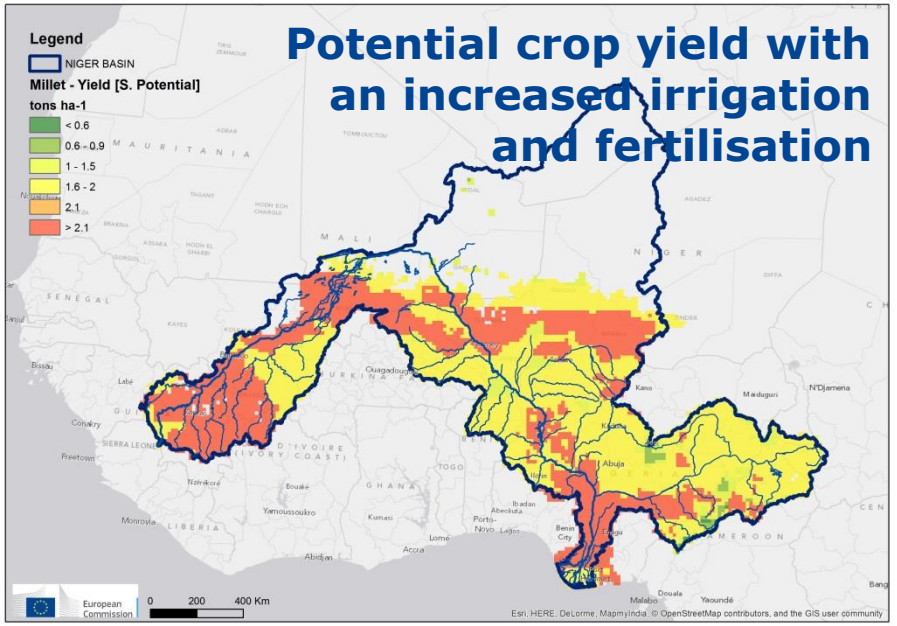
- Build spatial scenarios of maximum plausible agricultural water demand in the catchment
- Identify where demand comes closer to water availability, thus compressing water availability for other usages and for the functioning of ecosystems

The millet case

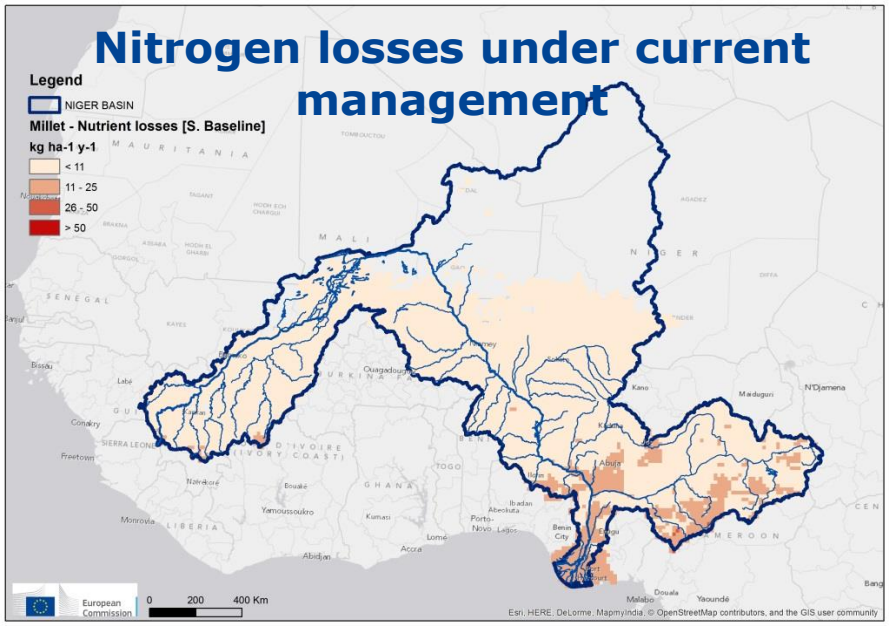
Crop yield under current management



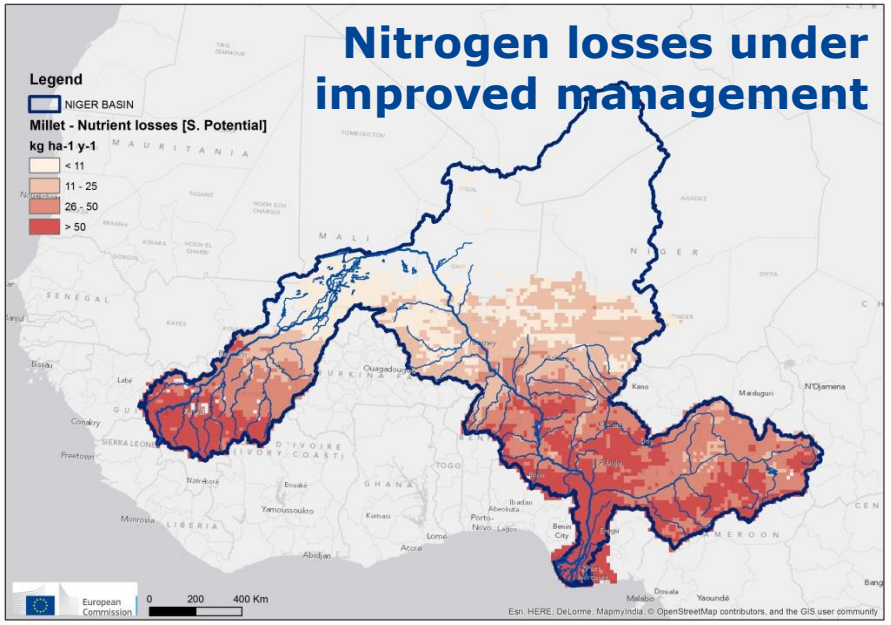
Potential crop yield with an increased irrigation and fertilisation



Nitrogen losses under current management



Nitrogen losses under improved management



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Assessing the Water Nexus in the Mekrou river basin

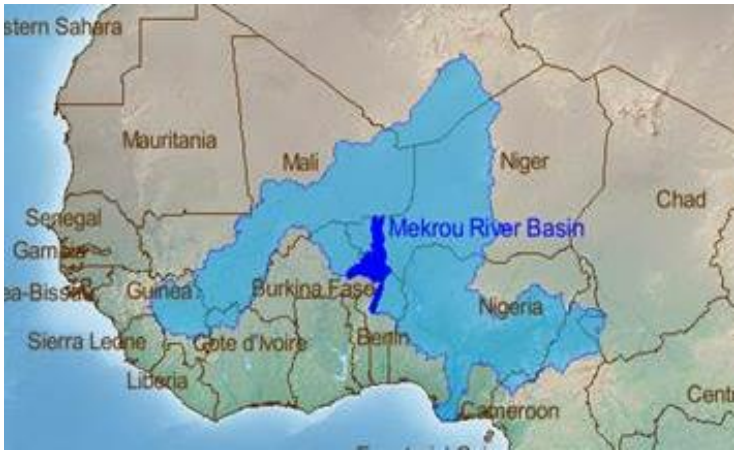
Pilot project (2014-2017) methodology to be extended to the Niger and other African river basins

Water balance

Water management and governance

Adaptation to climate change

Water security



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Thank you for your attention

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