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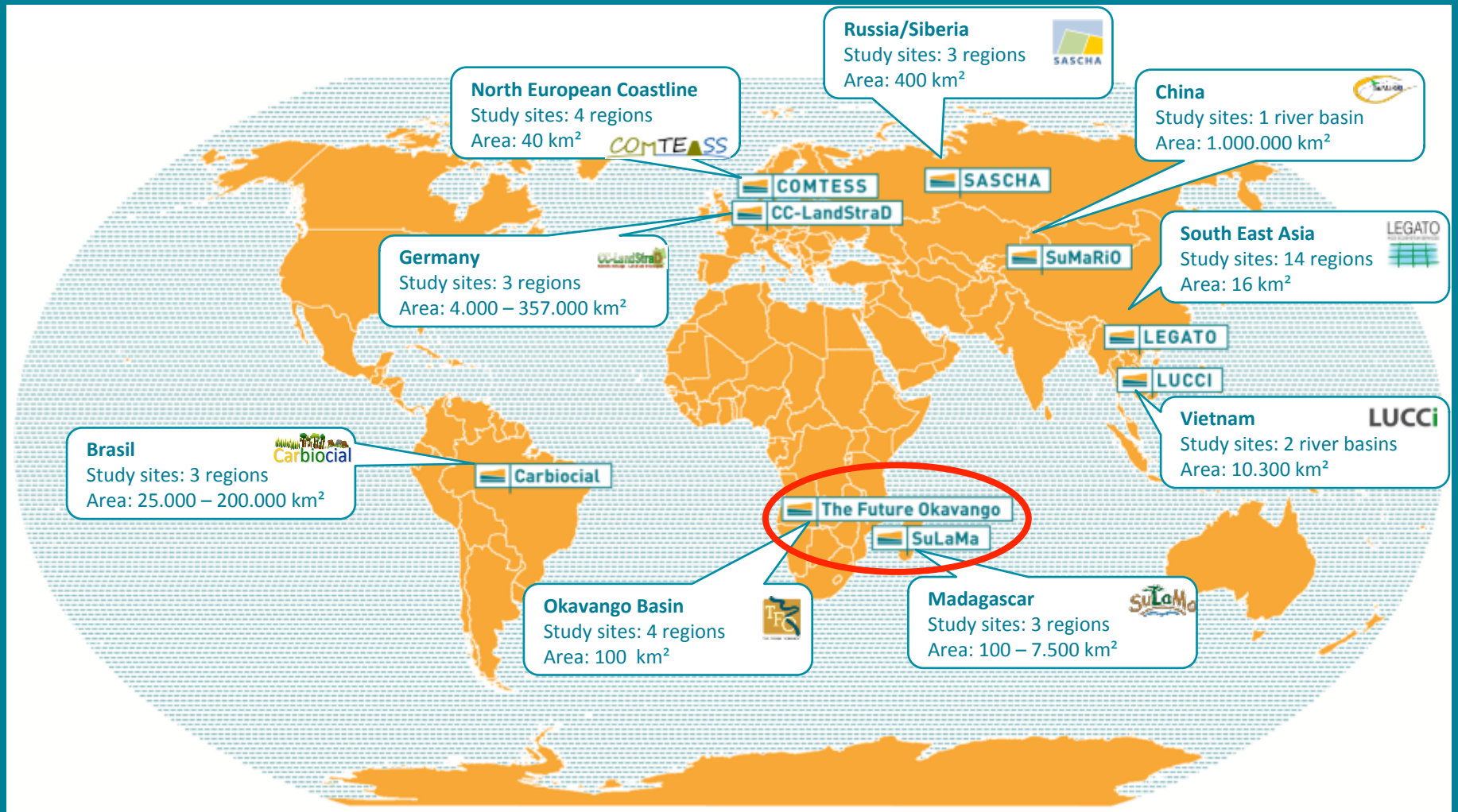
# SUSTAINABLE LAND MANAGEMENT

## An International Research Programme of the German Federal Ministry of Education and Research (BMBF)

**www.sustainable-landmanagement.net**



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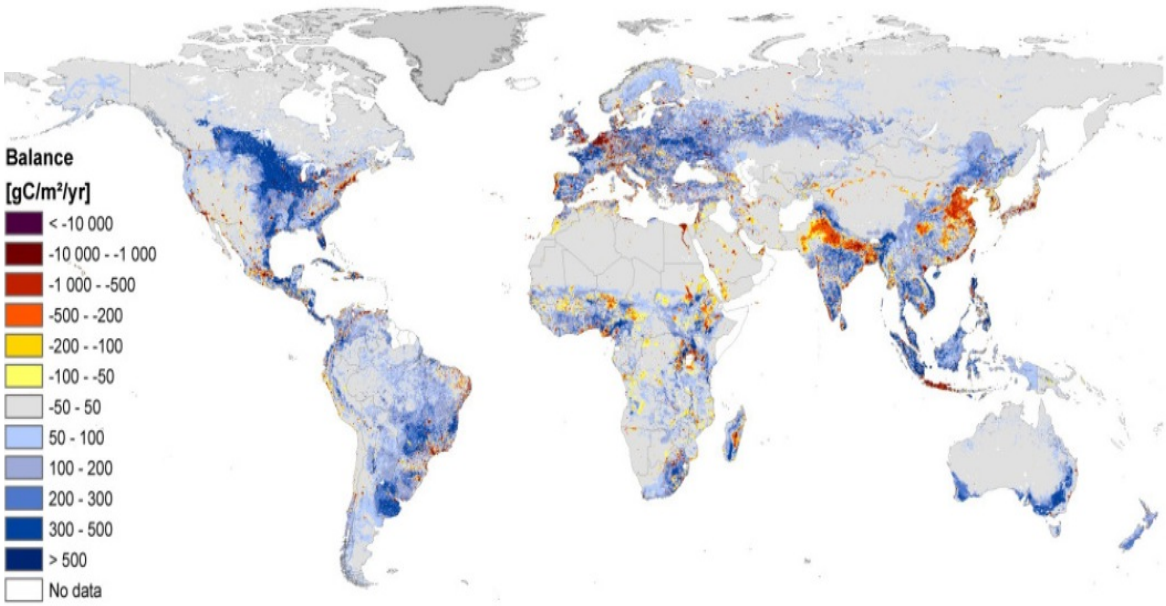
# Global Land Use Change

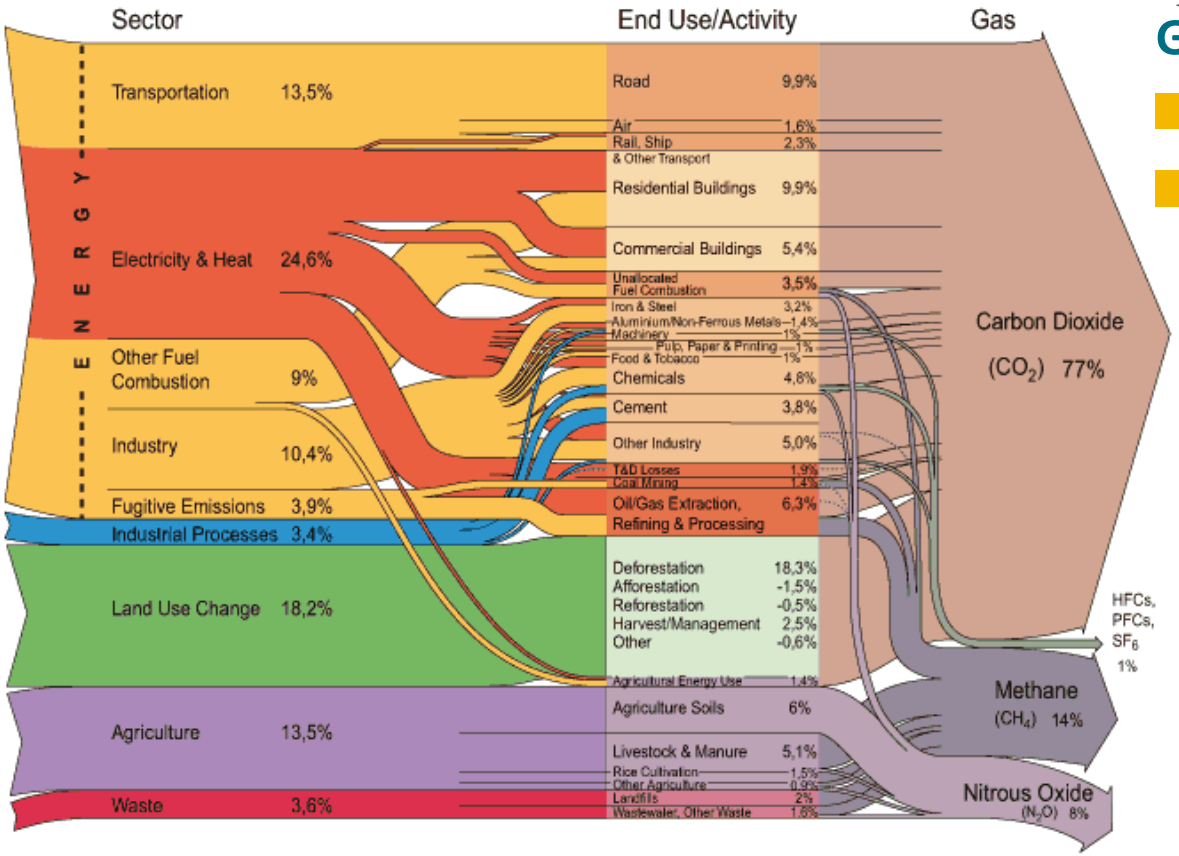
## Driver

- Population development
- Consumption pattern
- Urbanization
- Climate change
- Globalization




Haberl et al. (2007, PNAS)

# Land use related $CO_2$ emissions




## Greenhouse Gas Emissions

- 18,2 % Land use change
- 13,8 % Agriculture

IPCC AR4



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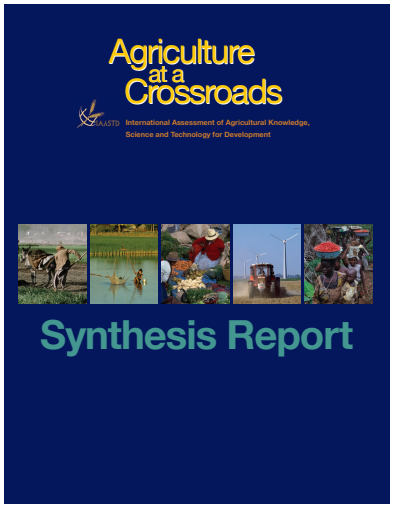
# IAASTD Synthesis: Requirements & Recommendations

- Strengthen human resources in the support of natural capital
- Strengthening country capacity to analyze and identify options
- National & International trade and market policy issues
  - Payments/reward for environmental services (PES)
  - Taxes on carbon and pesticide use
  - Carbon-footprint labels
  - Fisheries subsidies




International Assessment of Agricul- tural Knowledge, Science and Technology for Development (IAASTD, 2009)



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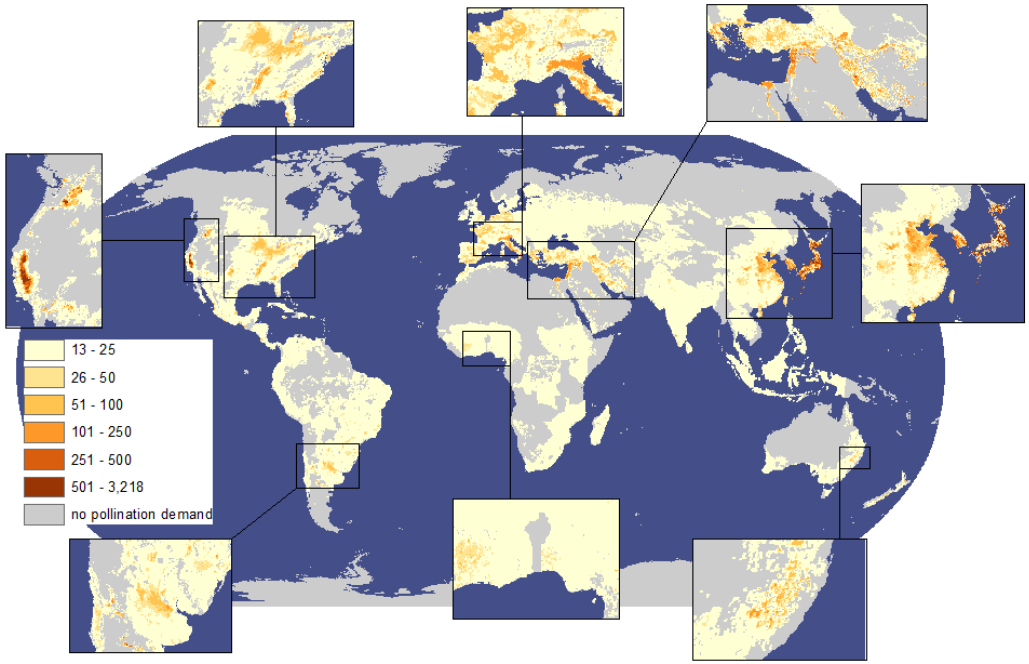
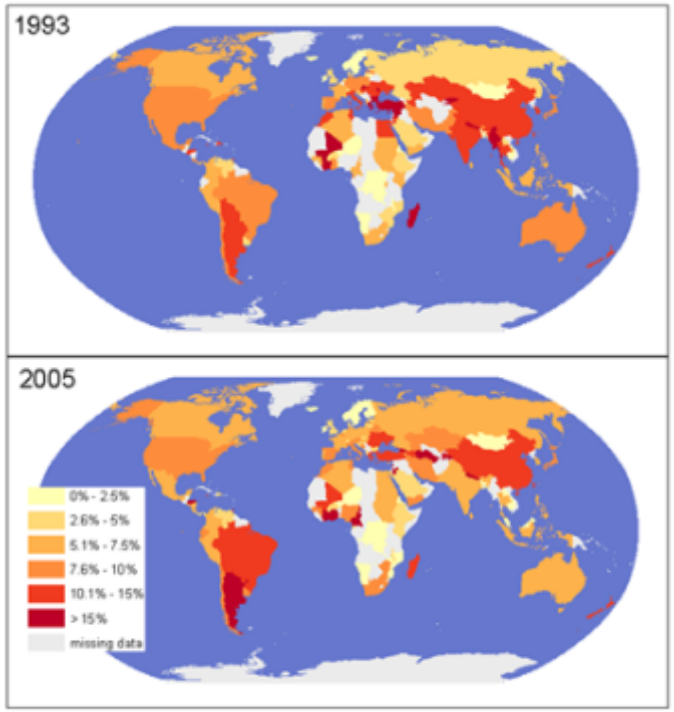
# Global pollination benefit [US $/ha]




Lautenbach et al (sub.)



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# The future Okavango – TFO

THE FUTURE OKAVANGO

## Challenges

- Population increase
- Loss of biodiversity
- Yield gap
- Export of goods and services



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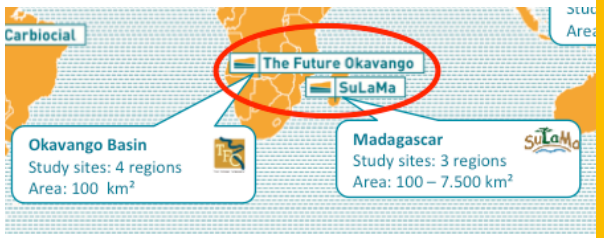

# TFO: Strategies & Expected Output

- Measure & valuate competing ecosystem services on a regional level in Okavango basin
- Improve crop production with Conservation Agriculture (CA)
- Establishment and support of Forums for Integrated Resource Management (FIRM)
- **Improve local knowledge on ecosystem services**



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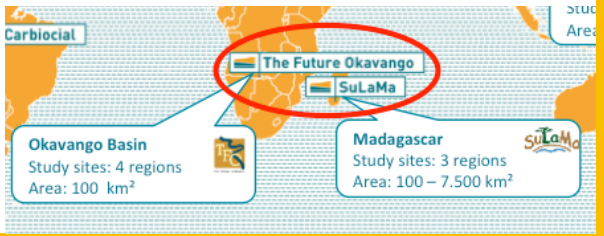

# SuLaMa: Participatory research for sustainable land management on the Mahafaly Plateau in southwestern Madagascar

- High level of non-sustainable land use, high illiteracy rate, limited livelihood options
- Society characterized by traditional customs and strong social cohesion

Source: SuLaMa



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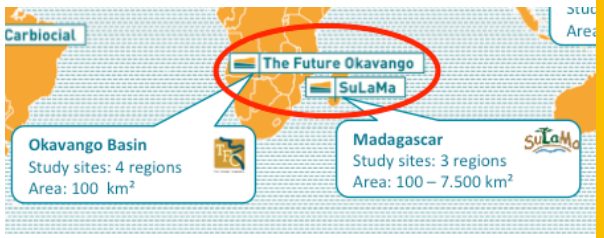

# SuLaMa: Expected Results

- Enhance farmers' income, maintain and improve chemical, physical and biological soil properties
- Increase livestock productivity, reduce negative impacts on biodiversity
- Sustainable forest use and **enhanced economic value of forests** as C-sink (REDD+)
- Cost-effective and locally **accepted PES-scheme**



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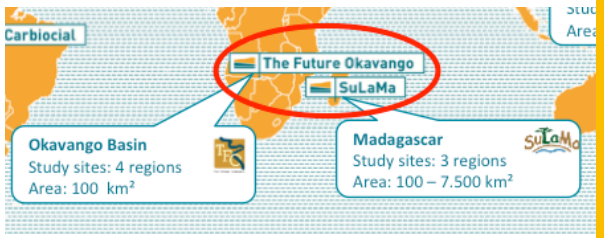
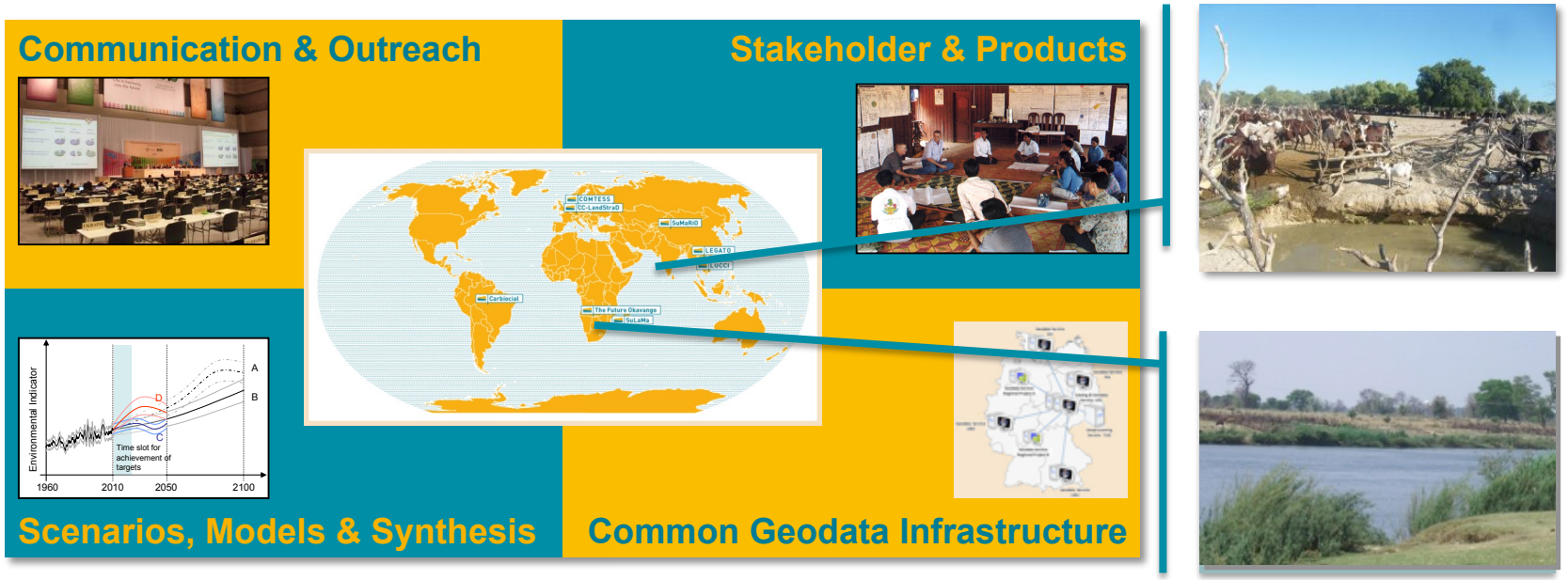


# Approach for Global Land Management (GLUES)

- Regional projects / place-based research in global hot-spot regions
- generate knowledge for decision making in sustainable land management at regional levels



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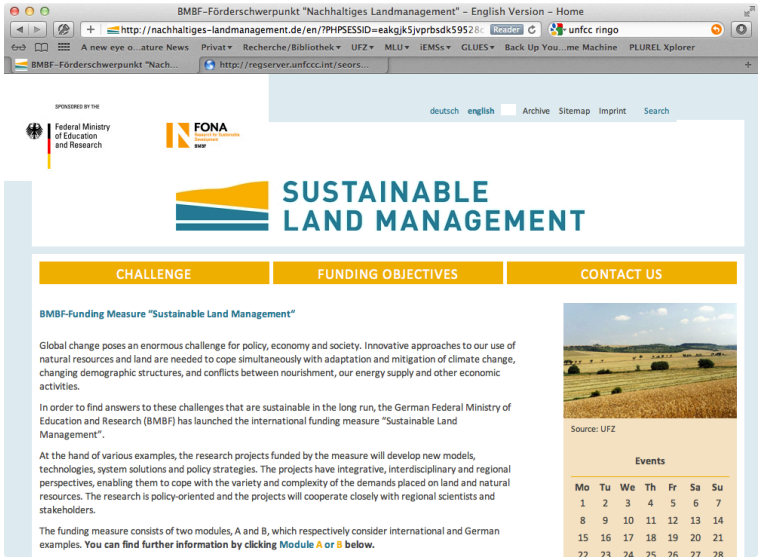
# Conclusions

- Sustainable land management strategies combines **mitigation & adaptation**
- Increase **awareness** for the **values** of **resources**
- contribute to the development of tools and instruments **at the regional** level.
- **Embed in global processes** and thus study off-site effects
- Open for further place-based studies/ project for analysis



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