



German Remote Sensing Data Center (DFD)
Land Surface Dynamics

Contrasted Cross-border Agricultural Patterns and Trends in the Irrigated Senegal River Valley since 2016

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BACKGROUND

Challenges in West Africa

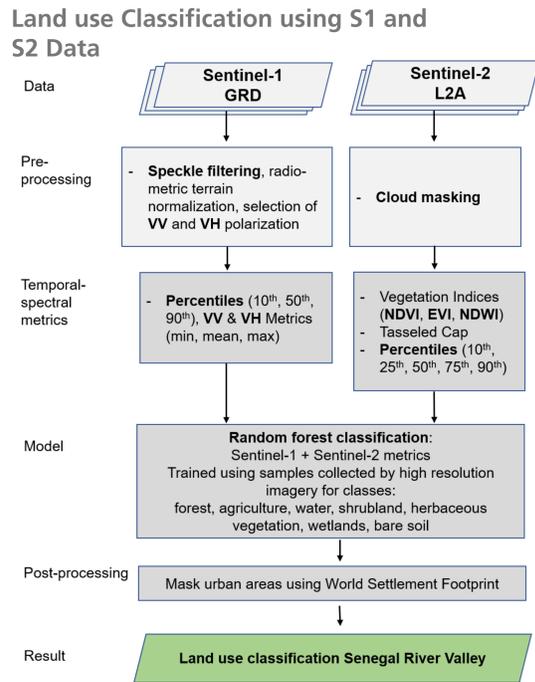
- ... West Africa faces **multiple risks (climatic, social, economic, ecological)** with partly uncertain future developments
- ... Projected **population development** from 400 million to 1 billion in 2100
- ... **Rising population** as driver for **increase in cropland** and in **livestock**
- ... Consequences are **loss in carbon** and **loss in biodiversity**
- ... **Intensification** of currently used agriculture area is needed
- ... **Agriculture area** already under pressure due to **land degradation** and **desertification**
- ... Solution: **Sustainable Intensification (SI)**
- ... System of Rice Intensification
- ... Implementation limited (lack of labor, knowledge, limited access of farmers to financial institution)



Development of Cropping Systems in Mauritania and Senegal:

- Clear separation between cropping systems and coping strategies
- Mauritania fast-growing large scale farming system, less susceptible to socio-economic fluctuations
- Smaller farm sizes and a huge subsistence to intensification gradient dominate Senegal
- Heterogeneity and volatility in socioeconomic conditions – e.g., market access and prices – lead to reduced efficiencies.

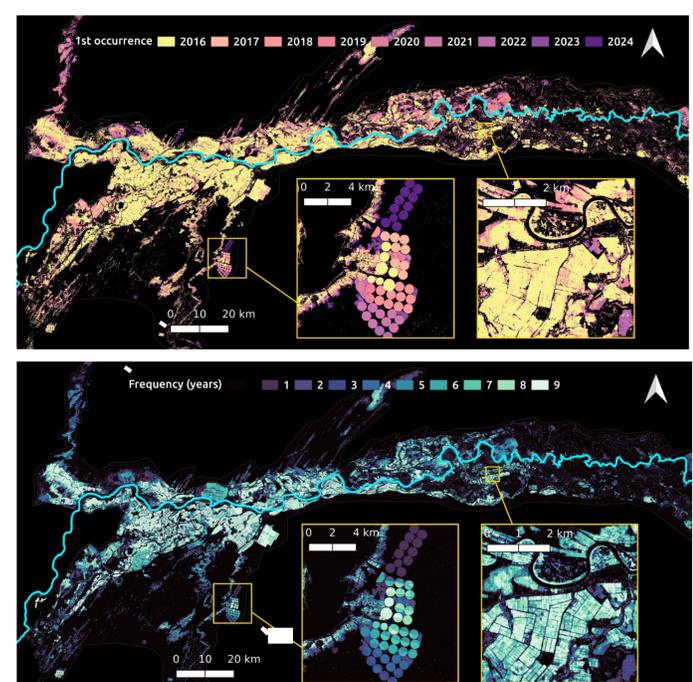
METHODS



RESULTS 1

Cropping intensity North and South of the river

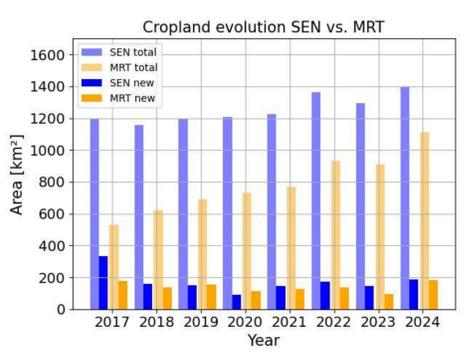
- Classification captures dynamic agriculture system in both countries
- High dynamic at the river due to irrigation schemes
- In Mauritania around 2018/19 agric. area are developed in the Eastern part
- Large scale commercial farms in Senegal were developed
- Frequency in both countries show high dynamic of fallow fields
- Strong gradient from the Eastern to the Western part
- Development along infrastructure



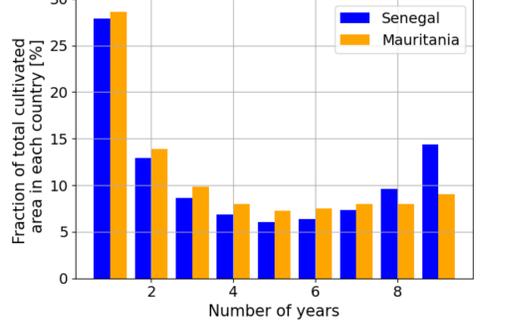
Results 2

Development of agriculture area

- Strong increase of agriculture area in MRT
- SEN constant development but no total increase
- lower increase during COVID19 year 2020
- No migration of labor from Mali



How often has an area been cultivated between 2016-2024?



Fallow land

- Many years with uncropped arable land in both countries
- Development in Mauritania ongoing
- No clear climatic influence can be derived that could lead to an over- or underestimation of the area

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