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Enabling Delta Life

Areas of potential future water-related conflict risks

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Water shortage indicators for early warning about conflict risks and migration

Climate-conflict literature:

1. Focus on precipitation, while assumed causal path is through water shortage

2. Focus on local droughts, although possible impacts of drought abroad

3. Focus on historic relationships, little attention for future hotspots and measures that can be taken

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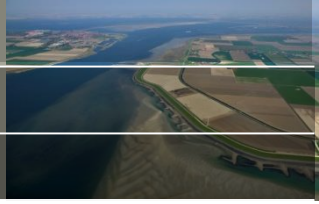
Water shortage indicator



Will different years be indicated as ‘drought’ years in conflict prone areas compared to precipitation-based indicators?

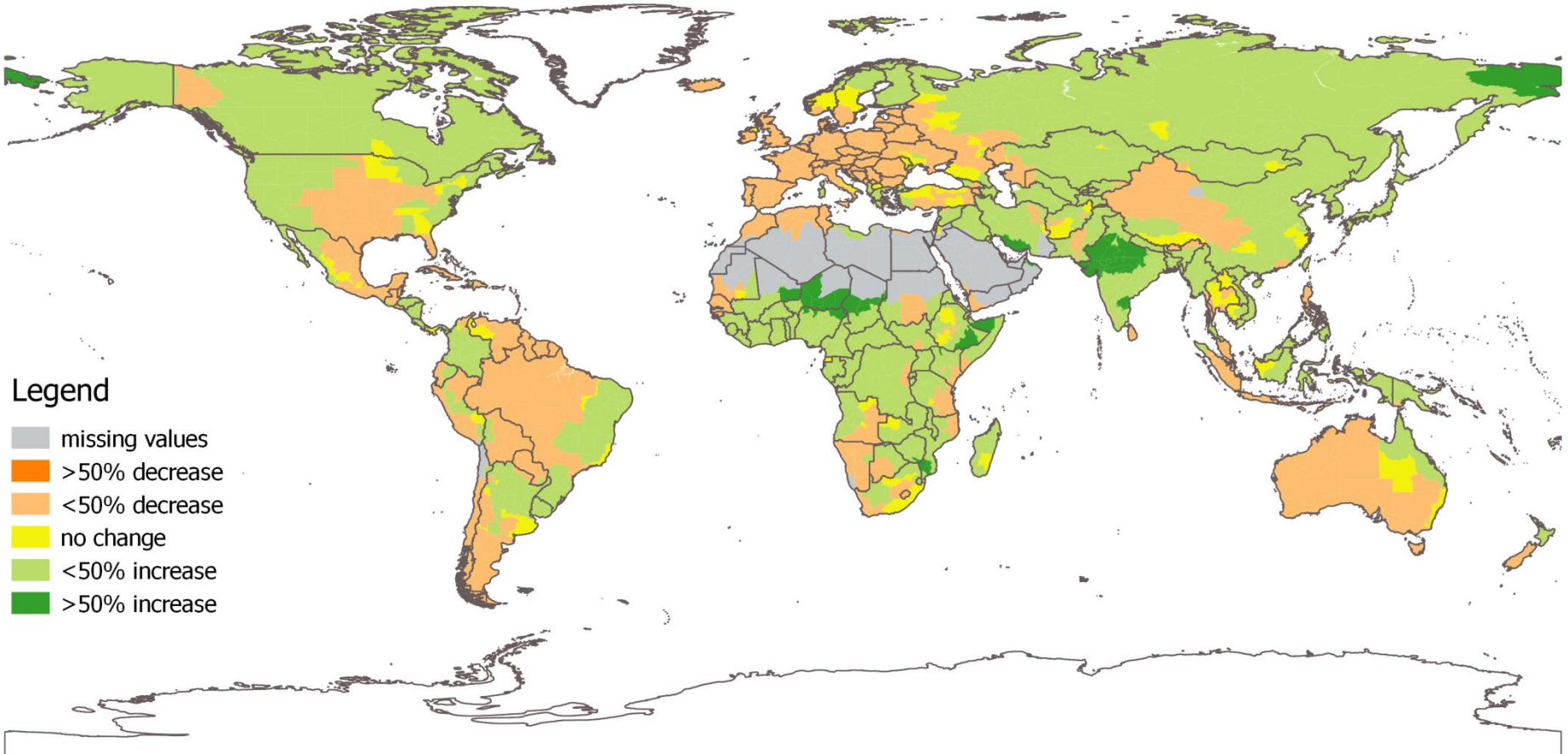
Shortage of water for main livelihood activities:

- Irrigated agriculture
- Rainfed agriculture
- Pastures (pastoralists/herders)

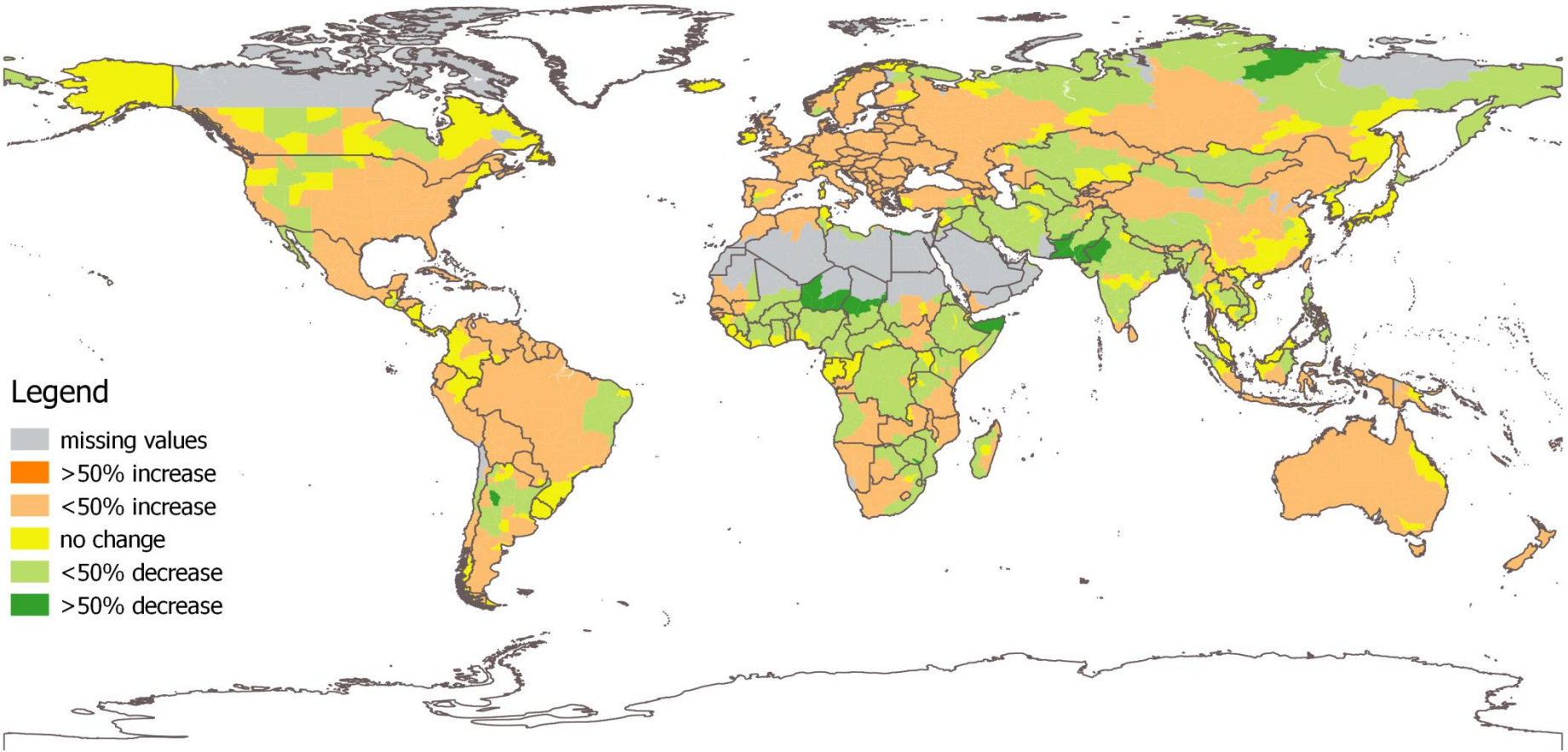
Simulations with global hydrological model PCRGLOB-WB (Utrecht University)

- RCP4.5 – SSP2
- Standardized evaporation deficit

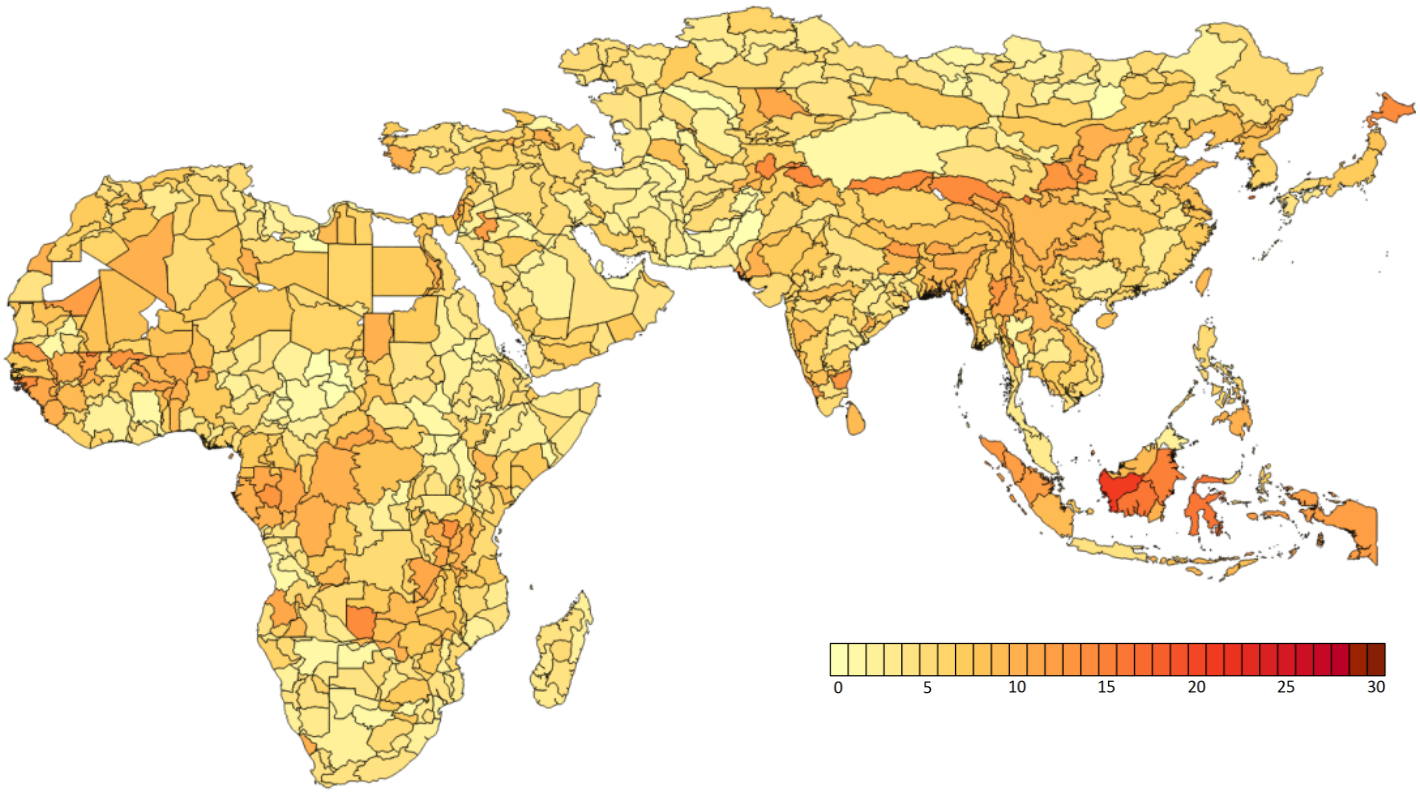
Climate change – average precipitation



Climate change and future water use - shortage



Comparison of shortage-based indicator with precipitation-based indicator



25% of areas has ≥ 20 % of years indicated differently

Next step: repeat earlier statistical analysis

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2. Food import risks through drought abroad

1. For selected conflict prone countries
2. Identify staple foods and their countries of origin
3. Spatial distribution of food production in production countries
4. Drought proneness of production areas
5. Drought risk profiles of staple food availability for the selected conflict prone countries

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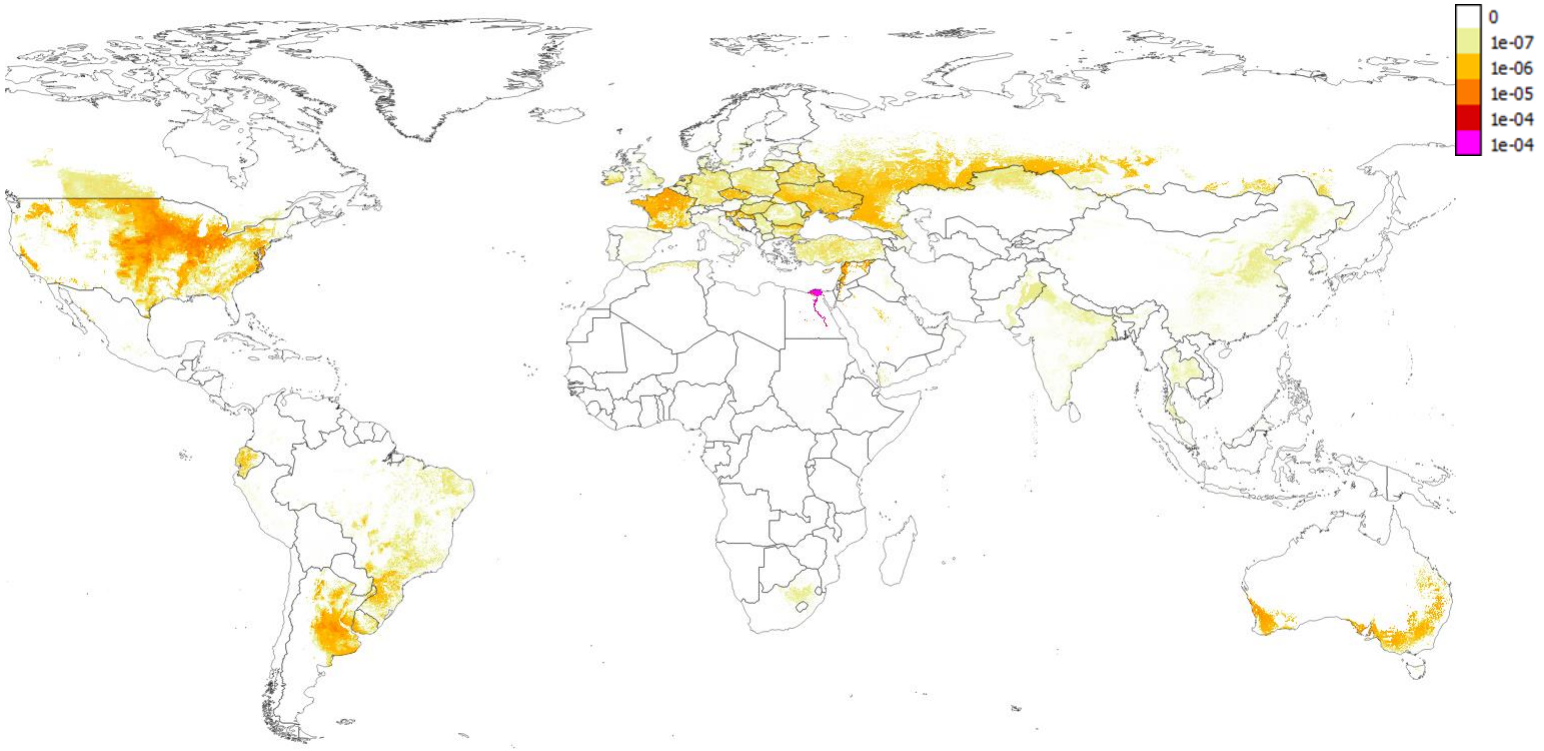
Global production of Egypt's staple



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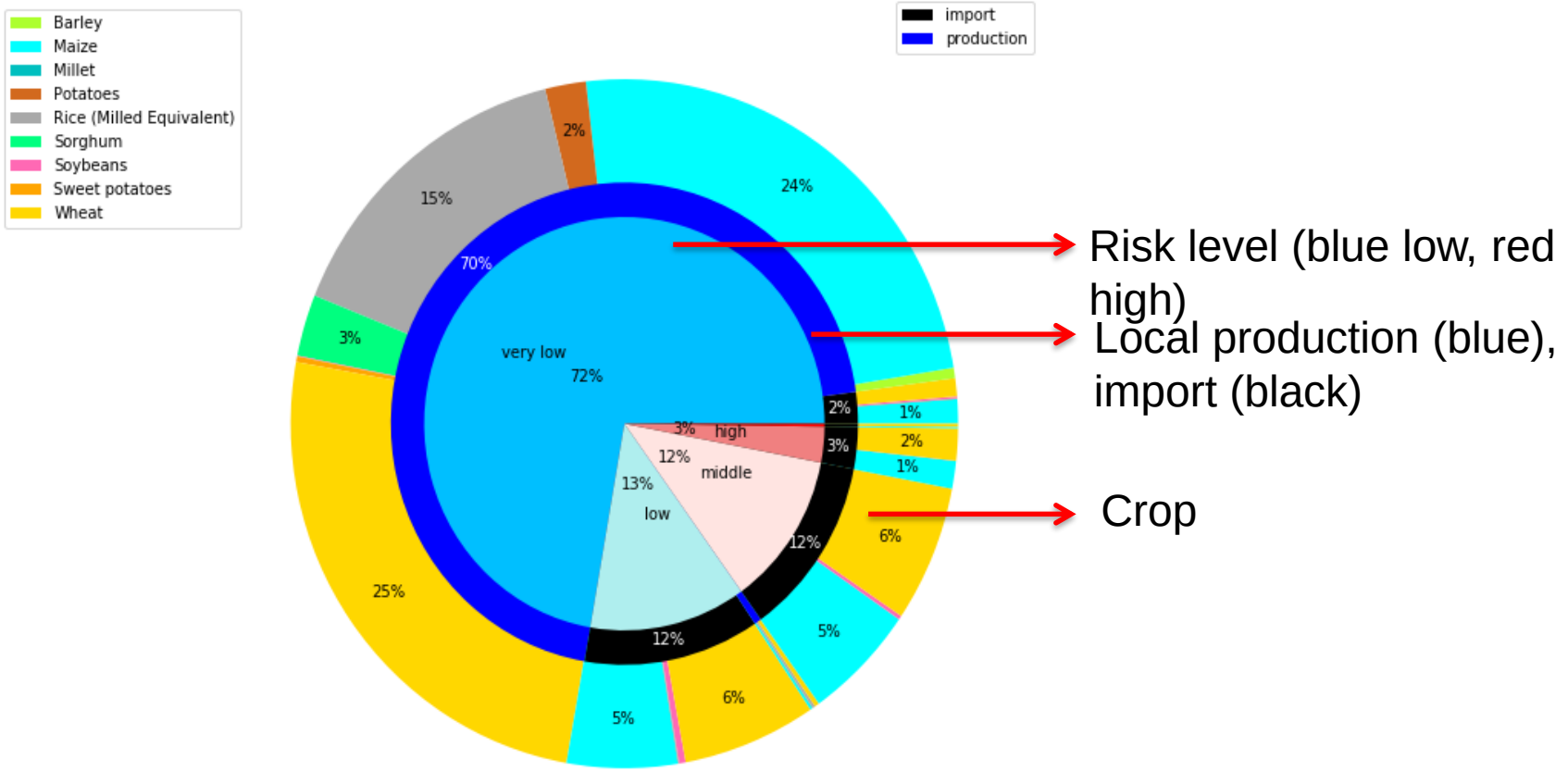
Egypt's staple food drought risk profile



Risk level (blue low, red high)

Local production (blue), import (black)

Crop

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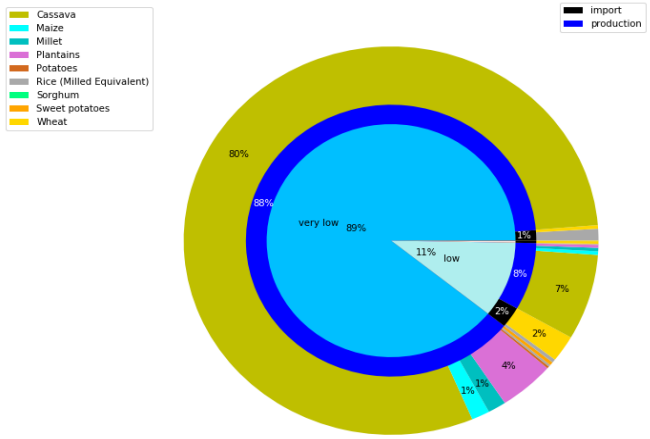
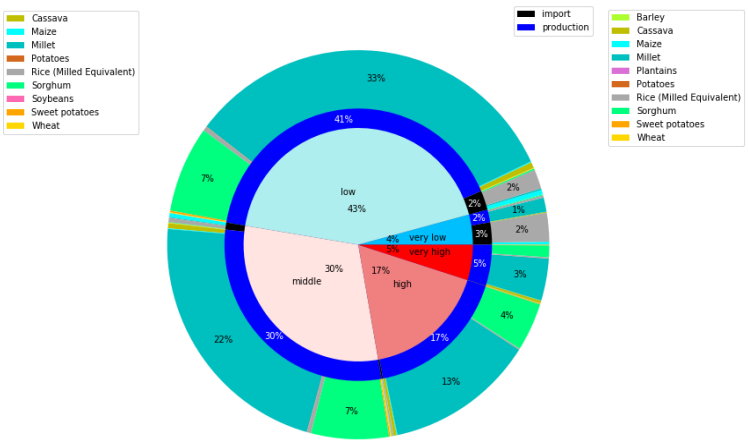
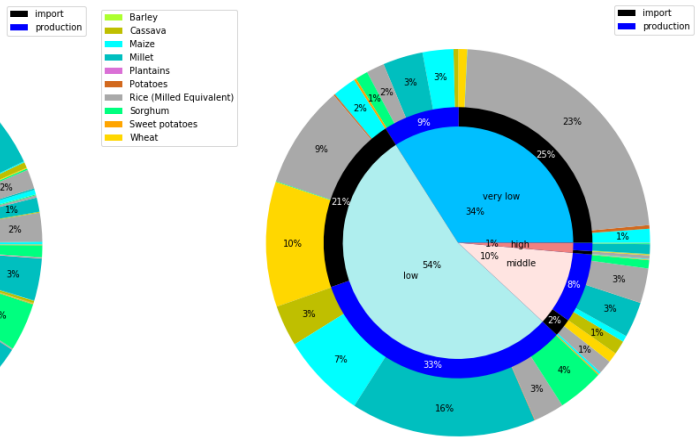
Risk profiles vary



congo



niger



senegal

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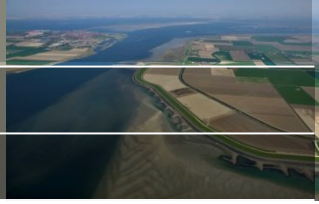
Conclusion



1. Actual use of water (in own country and abroad) disregarded in climate-conflict research

2. On-going work on improved indicators

3. To be combined with socio-economic and political factors to assess conflict risks

4. To be a basis for prioritizing conflict-prevention efforts