We developed a transferable drought risk assessment method that delivers calibrated risk estimates for different sectors at different spatial scales using AI techniques and public hazard & impact data.



SOMALIA

CAMBODIA

Average annual rice production loss

• In Cambodia, droughts cause on average every year a 2.5% reduction in rice yield.

• This amounts to a total of drought-induced AAL of ~215,000 tonnes/year.

Present Climate **Future Climate** SSP126 **Future Climate** SSP585 K-TONNES/

- Drought-induced displacement happens when communities are forced to move in search of food, water, and pasture for their livestock.
- In Somalia, the average annual drought-induced displacement is around 610,000 people.
- This is about 3.5% of the overall population.
- Under unmitigated climate change, this rises to 5.5%.

Average annual number of drought-driven internally displaced people

- Under extreme droughts, losses at a national level can be almost 10% of rice yield.
- This is in line with what was observed during the 2004 drought.
- In the future, overall yield reductions are set to increase.
- Unmitigated climate change will double the drought risk for rice production.

Probable maximum rice yield loss



POP 2020 - Current Climate

Current climate conditions ----- POP 2050, SSP126 - Projected ----- POP 2050, SSP585 - Projected





Wanna know how large the droughtinduced losses are in your region?

- understand different sectoral vulnerabilities?
 - identify regional or local impact hotspots?
- quantify drought risk under climate change?

EUROPEAN UNION



- On average, more than 5 million animals are exposed per year to severe drought conditions in the Volta Basin (Ghana, Burkina Faso, Benin, Mali)
- Under unmitigated climate change, this number increases by 71% (excluding changes in bovine and small ruminant populations).
- In the northern regions of the Volta Basin, more cattle, goats, and sheep are estimated to be exposed to impactful drought events. This is due to high exposure and higher drought hazard in these regions.

VOLTA BASIN

Annual average livestock affected by extreme drought

Drought-induced reduction in power production





- Current drought risks in the EU are already significant.
- For the energy system, the currently active hydropower and nuclear power plants are affected by droughts, through lower reservoir or river levels and through restrictions on cooling water use, respectively.
- In relative terms, drought-induced losses in nuclear power generation are generally smaller (average annual loss of about 1%) than hydropower losses (average annual loss up of to 10%).



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