

Modern technologies and conflict

Energy, climate, resources

Jakub Drmola

Climate change

- Extinction is the norm
 - 99% of all species
 - Mostly due to climate change
 - Mostly triggered by volcanism
- Planet will survive, life will survive, humans will survive too
- Geopolitical consequences
 - Lack of water and food
 - Poor adaptation
 - Migration and conflicts
- All countries impacted
- “lifeboat” countries?



Climate change and conflicts

- Social conflict
- Organized violence



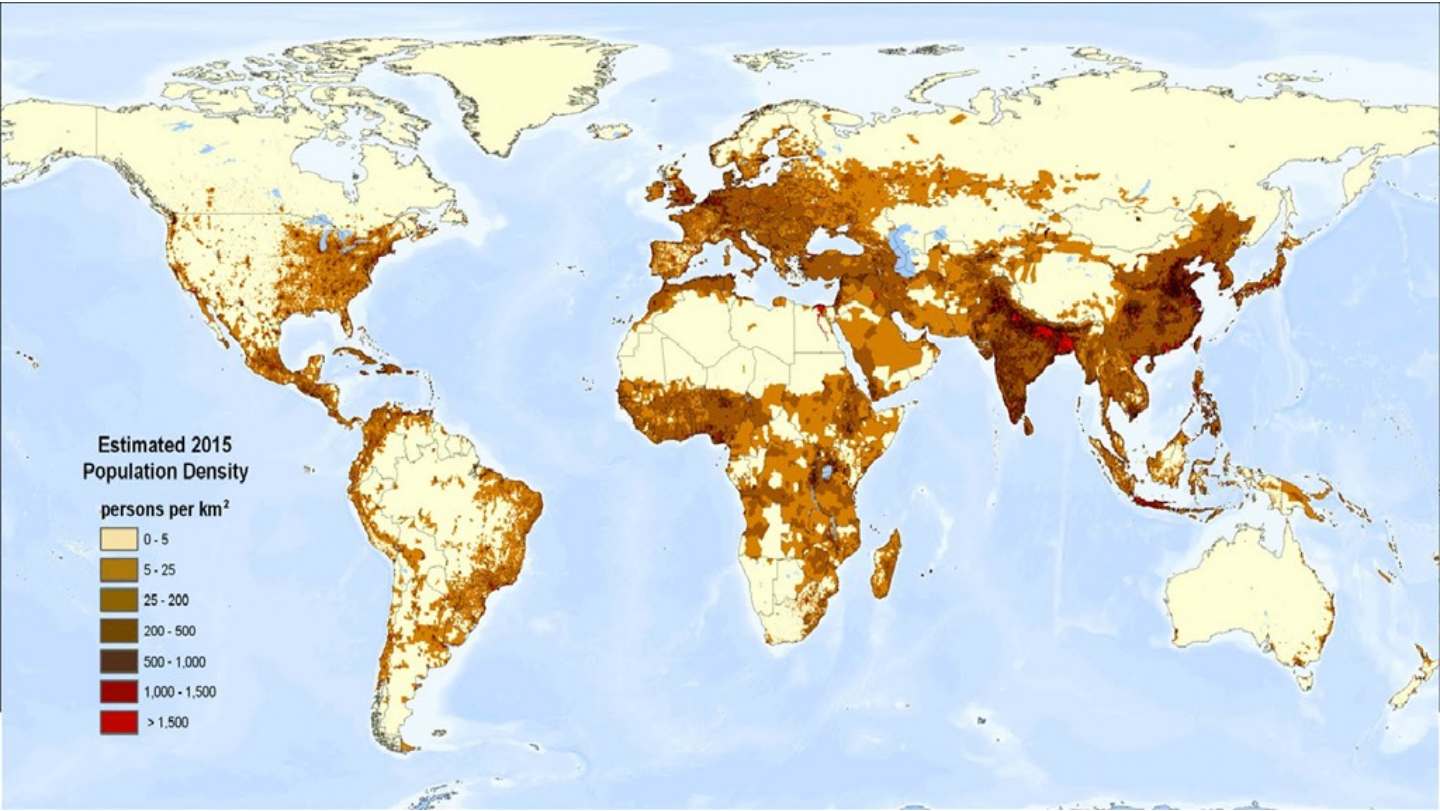
Armed conflicts



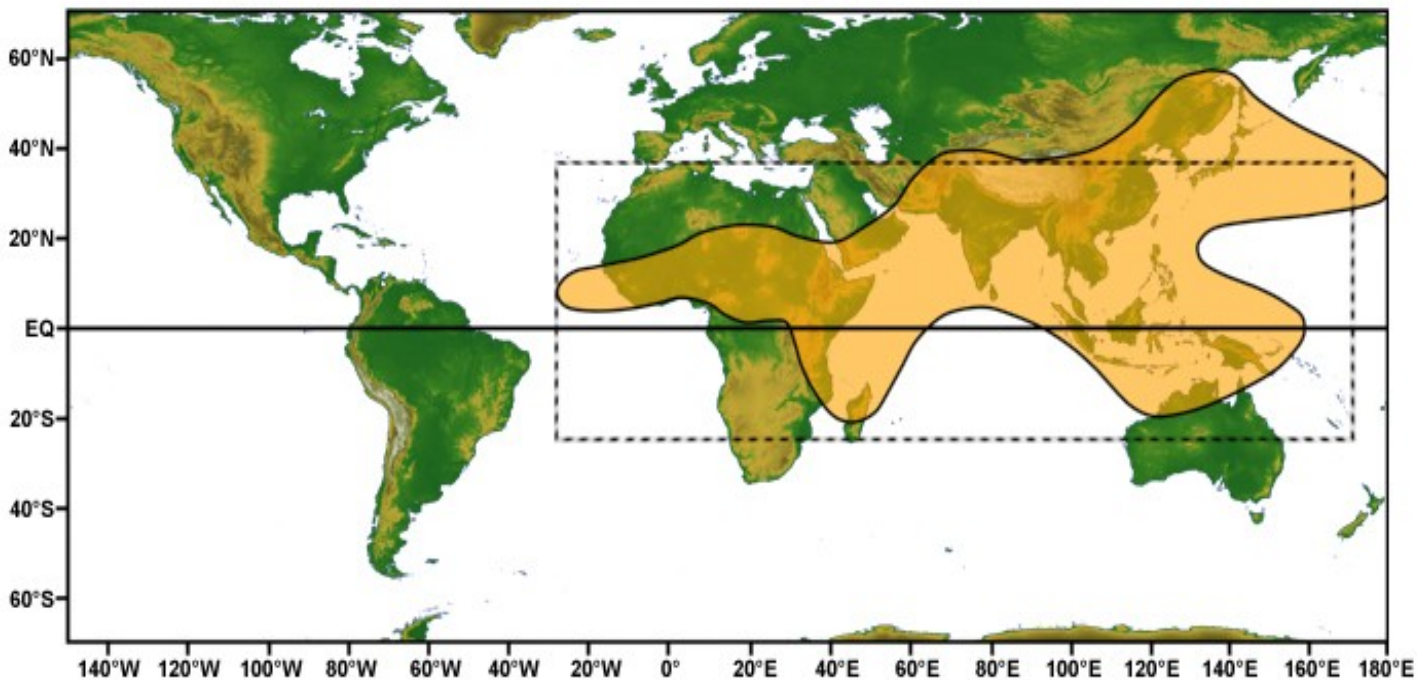








Classic Monsoon Region



Mapping the Impacts of Climate Change

Select below

Extreme Weather

Direct Risks

Overall Vulnerability

Sea Level Rise

Direct Risks

Overall Vulnerability

Agricultural Productivity Loss

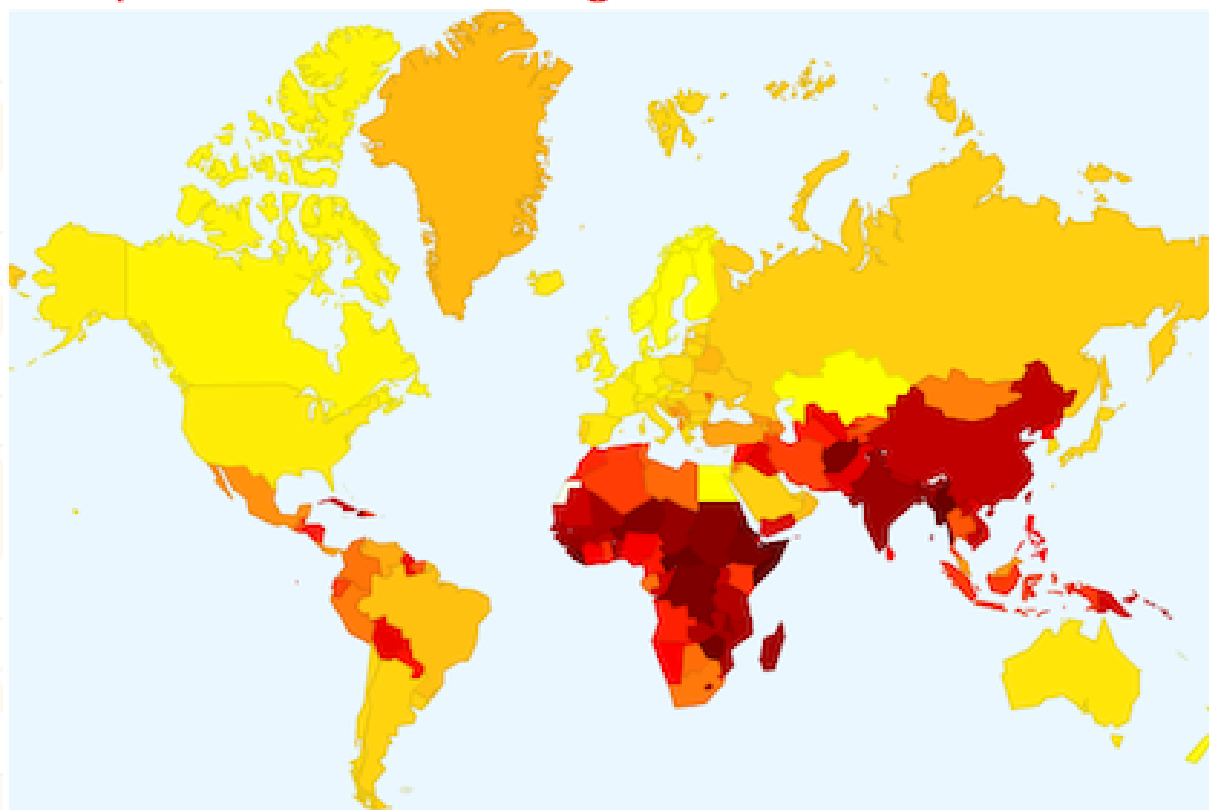
Direct Risks

Overall Vulnerability

Overall

Direct Risks

Overall Vulnerability



Rank 1  169

Overall Overall Vulnerability:
Physical Impacts Adjusted For Coping Ability

Weak monsoon: Karnataka government in 'panic' as districts face deficit rainfall

The government is cautiously monitoring the situation, Revenue Minister Krishna Byre Gowda said.



Bharath Joshi | DHNS



DHNS

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Revenue Minister Krishna Byre Gowda. Credit: DH File Photo

Karnataka will have to declare itself as drought-hit if the monsoon fails, Revenue Minister Krishna Byre Gowda said on Monday while admitting that the government is in "panic" as all districts are facing a rainfall deficit.

Energy sources

- Burning buried sunshine (80%)
- Burning fresh sunshine (10%)
- Heat from sunshine (7%)
- geothermal + nuclear energy (3%)

- Issue of energy storage
- Energy consumption is growing and will continue to grow

- Nuclear fusion?
- [ITER](#), 2030?, \$6-65 bil



Coltan

- Mined for tantalum and niobium, used in electronics (condensators)
- All phones, computers, TVs...
- circa 60% from DRC
 - <https://www.youtube.com/watch?v=fPIB17PE2vM>
- “resource curse”
- (re)source of conflict
- Slavery and civil war
- Environmental impact



REE mining

- 90% of global production from mines in Baotou, northern China
- cerium, neodymium, yttrium, terbium, scandium, lanthan, dysprosium, ...
- Massive ecological impact
- Geopolitical tool
- Other deposits: DPRK and Afghanistan





- 2006, Indonesia, East Java, **Sidoarjo**
- Natural gas drilling turned into mud volcano
- 180 000 m³/day -> 10 000 m³/day
- Area 7 km²

Geo-engineering

- artificial and intentional climate change
 - + unintentional slowing of climate change
- method to buy some time
- SRM - Solar Radiation Management
 - increasing albedo (reflectivity)
- aerosol dispersion, construction changes
- risk of unilateral actions and dependence
- also “carbon capture” technology
- artificial/organic

