

Modern technologies and conflict

Energy, climate, resources

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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



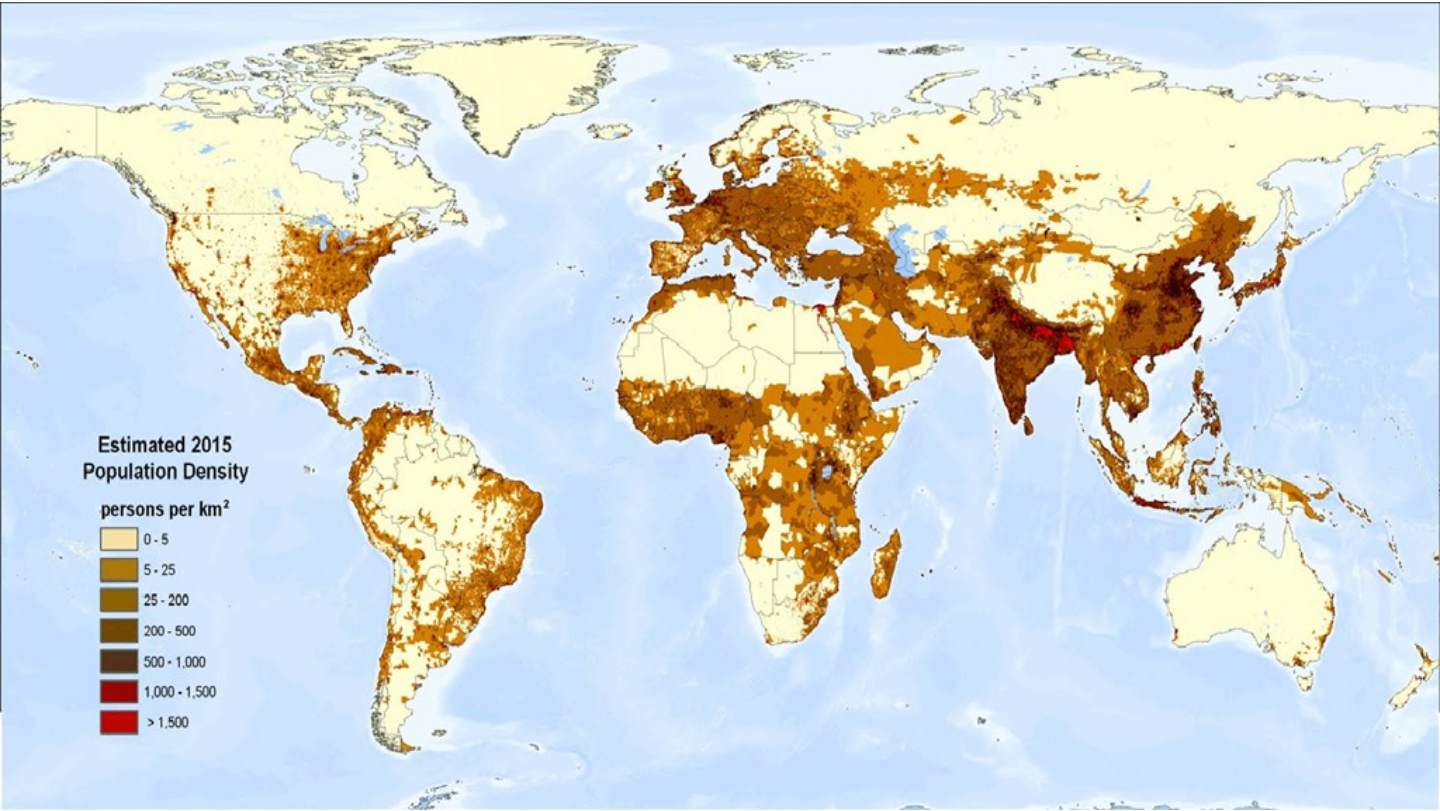
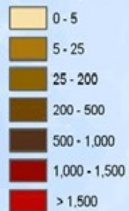




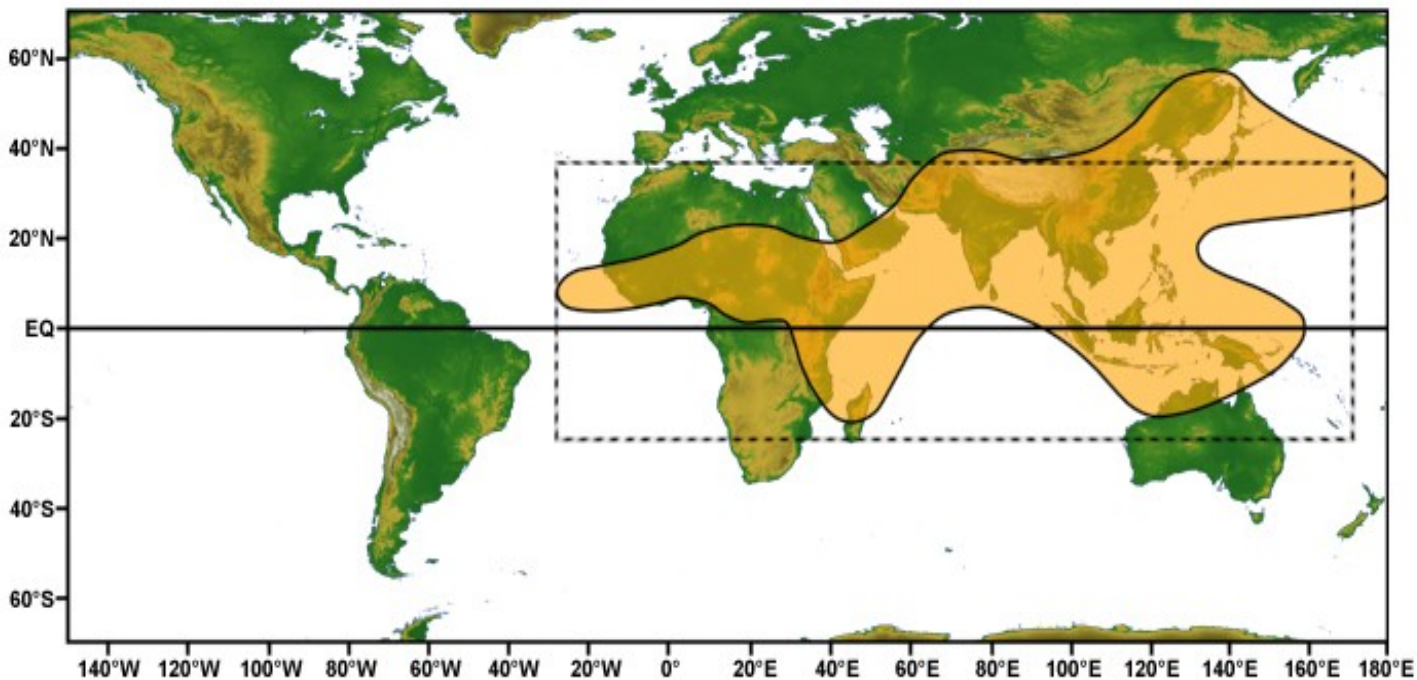


**Estimated 2015
Population Density**

persons per km²



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

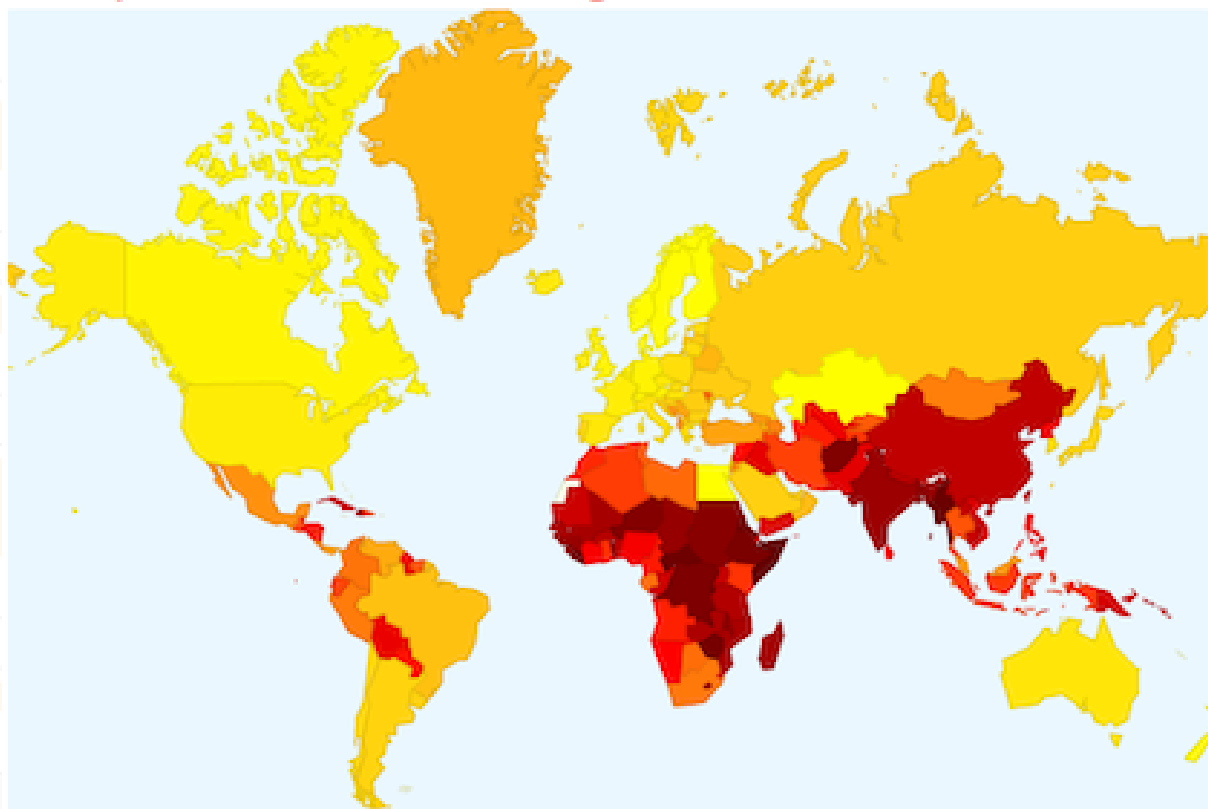
Direct Risks

Overall Vulnerability

Overall

Direct Risks

Overall Vulnerability



Rank 1 169

Overall Overall Vulnerability:
Physical Impacts Adjusted For Coping Ability

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?, \$20 000 000 000



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 10 km²

Geo-engineering

- umělé a cílené ovlivňování klimatu
 - + nevědomé brždění změn znečištěním
- snaha zbrzdit oteplování a získat čas
- obvykle skrze zvyšování albeda (odrazivost)
 - SRM - Solar Radiation Management
- rozprašování látek v atmosféře, stavební úpravy
- riziko závislost a jednostranných akcí
- nebo “carbon capture”
- technický/organický

