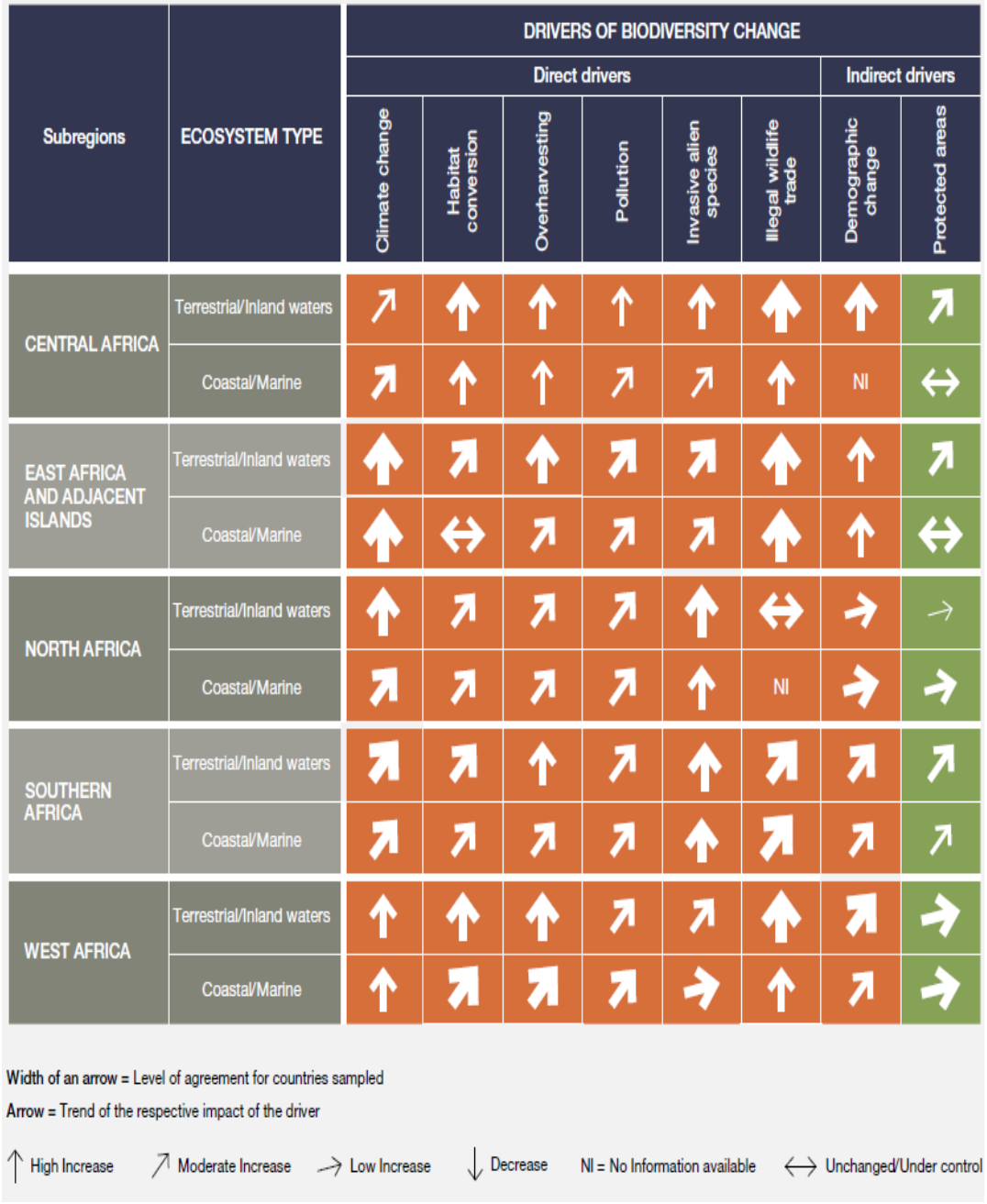
Environment and climate change in Africa – an overview

IPCC Special Report 1.5 →

- Human activities → estimated - caused appr. 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 (with continued increase at the current rate). (high confidence)

- Warming will persist for centuries to millennia → will continue to cause further long-term changes in the climate system, such as sea level rise, with associated impacts (high confidence)

IPBES Africa Assessment



Subregions	ECOSYSTEM TYPE	DRIVERS OF BIODIVERSITY CHANGE							
		Direct drivers						Indirect drivers	
		Climate change	Habitat conversion	Overharvesting	Pollution	Invasive alien species	Illegal wildlife trade	Demographic change	Protected areas
CENTRAL AFRICA	Terrestrial/Inland waters	↗	↑	↑	↑	↑	↑	↑	↗
	Coastal/Marine	↗	↑	↑	↗	↗	↑	NI	↔
EAST AFRICA AND ADJACENT ISLANDS	Terrestrial/Inland waters	↑	↗	↑	↗	↗	↑	↑	↗
	Coastal/Marine	↑	↔	↗	↗	↗	↑	↑	↔
NORTH AFRICA	Terrestrial/Inland waters	↑	↗	↗	↗	↑	↔	→	→
	Coastal/Marine	↗	↗	↗	↗	↑	NI	→	→
SOUTHERN AFRICA	Terrestrial/Inland waters	↗	↗	↑	↗	↑	↗	↗	↗
	Coastal/Marine	↗	↗	↗	↗	↑	↗	↗	↗
WEST AFRICA	Terrestrial/Inland waters	↑	↑	↑	↗	↗	↑	↗	→
	Coastal/Marine	↑	↗	↗	↗	→	↑	↗	→

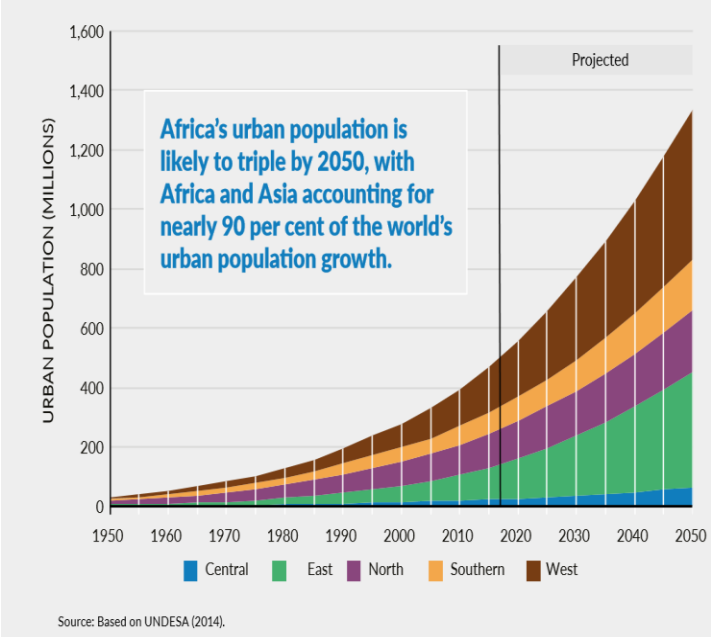
Width of an arrow = Level of agreement for countries sampled

Arrow = Trend of the respective impact of the driver

↑ High Increase ↗ Moderate Increase → Low Increase ↓ Decrease NI = No Information available ↔ Unchanged/Under control

Some 20 per cent of Africa's land surface (6.6 million km^2) is estimated to be degraded because of soil erosion, salinization, pollution and loss of vegetation or soil fertility.

Africa's current population of 1.25 billion is likely to double by 2050, putting severe pressure on the continent's biodiversity and nature's contributions to people, unless appropriate policies and strategies are adopted and effectively implemented.

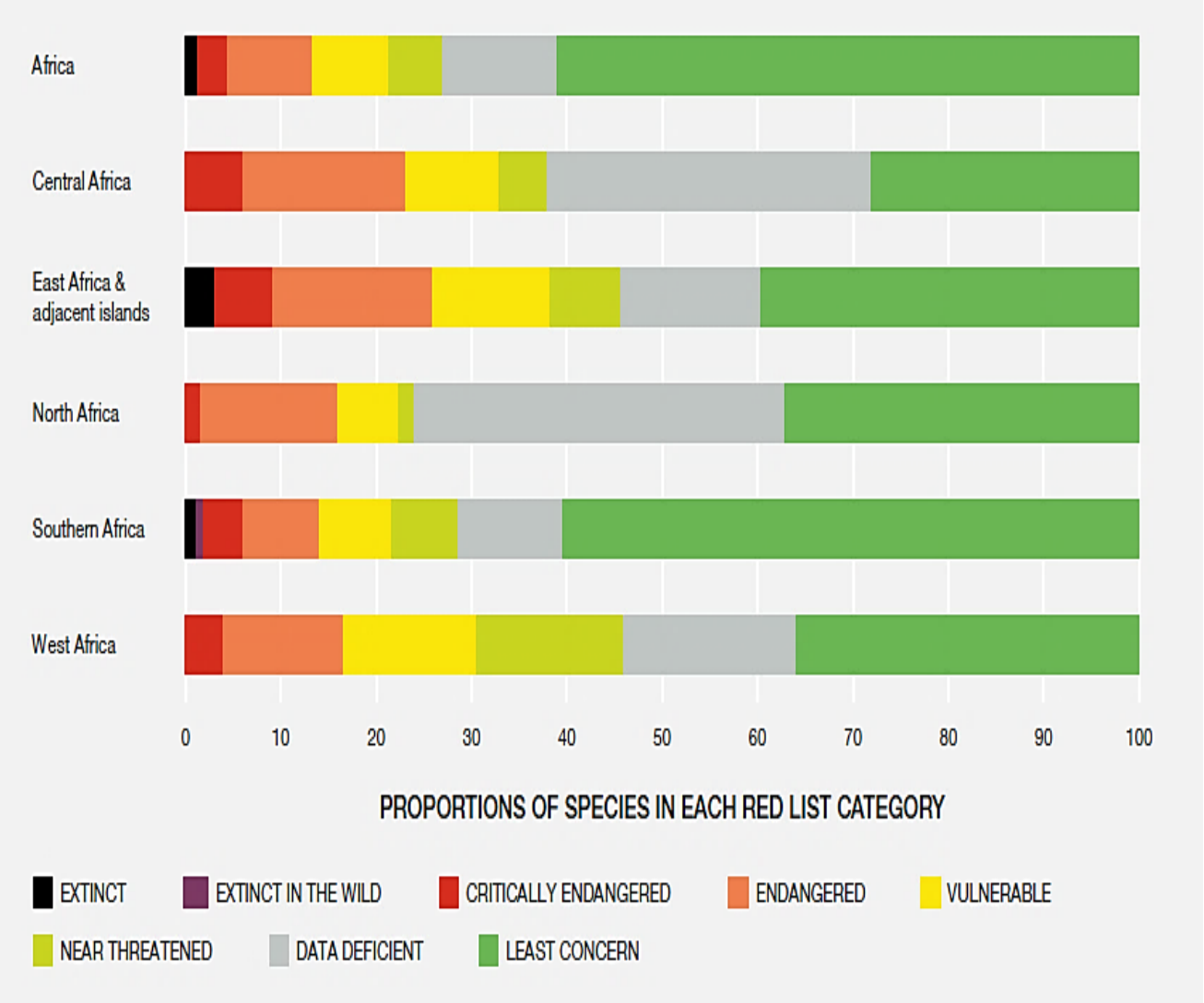


Africa is also one of the most rapidly urbanizing continents. Rapid and

unplanned urbanization puts immense pressure on biodiversity

Africa is extremely vulnerable to the impacts of climate change.

By 2100, climate change could result in the loss of more than half of African bird and mammal species, a 20-30% decline in the productivity of Africa's lakes and significant


Africa
Central Africa
East Africa & adjacent islands
North Africa
Southern Africa
West Africa
0
10
20
30
40
50
60
70
80
90
100
PROPORTIONS OF SPECIES IN EACH RED LIST CATEGORY
EXTINCT
EXTINCT IN THE WILD
CRITICALLY ENDANGERED
ENDANGERED
VULNERABLE
NEAR THREATENED
DATA DEFICIENT
LEAST CONCERN

What about the future?

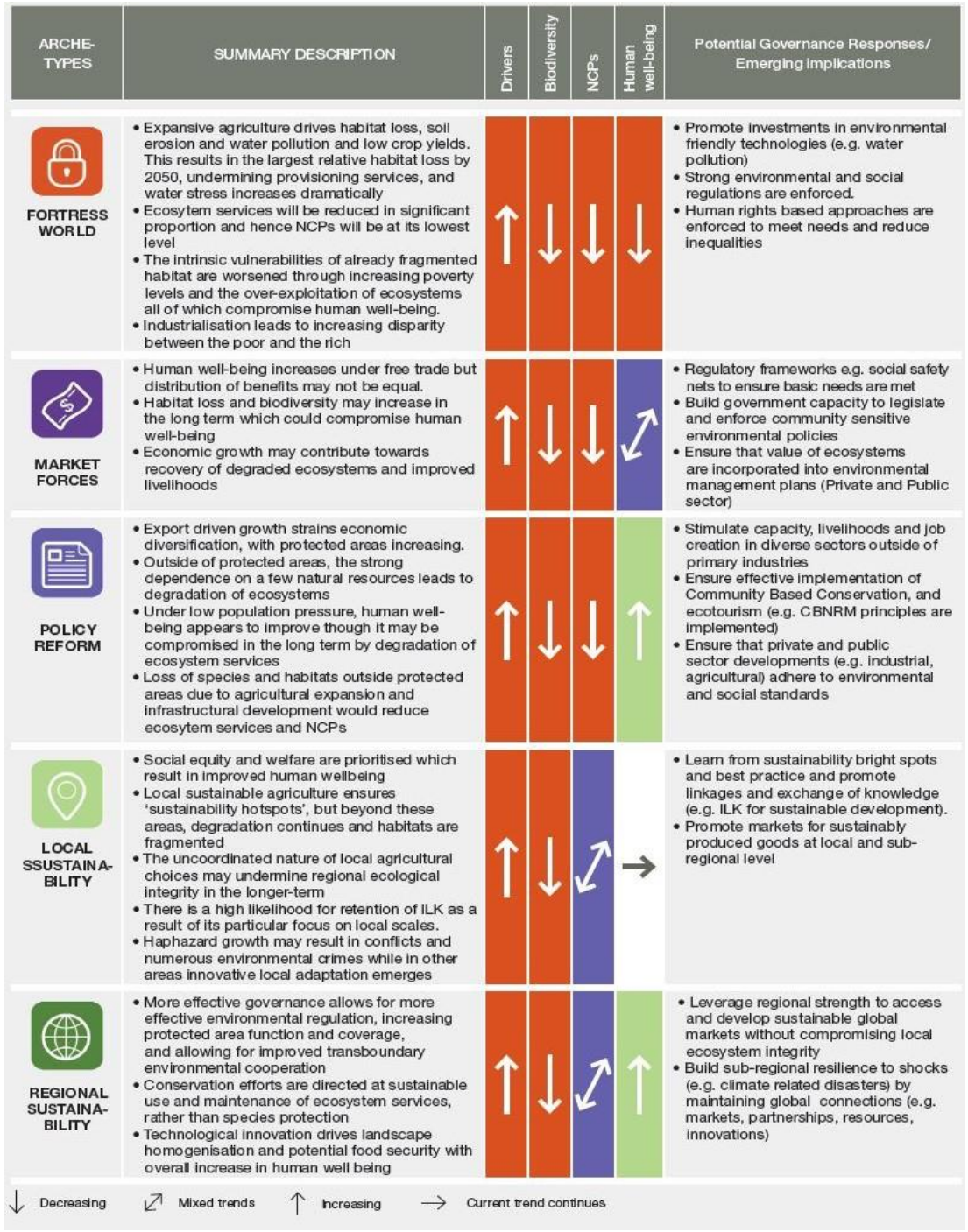
- Under all plausible futures considered; drivers will increase overall
- Significant negative impacts on biodiversity and human well-being
- →

How did the idea of plausible futures work here?

- Scientists → clustered African scenario studies → five archetypes emphasizing market forces, policy reform, security (fortress world), regional sustainability and local sustainability.

- Scenario archetypes → overview of how interactions between nature and society, or between current environmental and developmental conditions; existing driving forces; and optional management interventions could shape possible future trajectories of change across Africa in the coming decades (and the potential implications for nature and nature's contributions to people)

Trends in drivers under a range of plausible futures (& responses)



ARCHE-TYPES	SUMMARY DESCRIPTION	Drivers	Biodiversity	NCPs	Human well-being	Potential Governance Responses/ Emerging implications
FORTRESS WORLD	• Expansive agriculture drives habitat loss, soil erosion and water pollution and low crop yields. This results in the largest relative habitat loss by 2050, undermining provisioning services, and water stress increases dramatically • Ecosytem services will be reduced in significant proportion and hence NCPs will be at its lowest level • The intrinsic vulnerabilities of already fragmented habitat are worsened through increasing poverty levels and the over-exploitation of ecosystems all of which compromise human well-being. • Industrialisation leads to increasing disparity between the poor and the rich	↑	↓	↓	↓	• Promote investments in environmental friendly technologies (e.g. water pollution) • Strong environmental and social regulations are enforced. • Human rights based approaches are enforced to meet needs and reduce inequalities
MARKET FORCES	• Human well-being increases under free trade but distribution of benefits may not be equal. • Habitat loss and biodiversity may increase in the long term which could compromise human well-being • Economic growth may contribute towards recovery of degraded ecosystems and improved livelihoods	↑	↓	↓	⤢	• Regulatory frameworks e.g. social safety nets to ensure basic needs are met • Build government capacity to legislate and enforce community sensitive environmental policies • Ensure that value of ecosystems are incorporated into environmental management plans (Private and Public sector)
POLICY REFORM	• Export driven growth strains economic diversification, with protected areas increasing. • Outside of protected areas, the strong dependence on a few natural resources leads to degradation of ecosystems • Under low population pressure, human well-being appears to improve though it may be compromised in the long term by degradation of ecosystem services • Loss of species and habitats outside protected areas due to agricultural expansion and infrastructural development would reduce ecosytem services and NCPs	↑	↓	↓	↑	• Stimulate capacity, livelihoods and job creation in diverse sectors outside of primary industries • Ensure effective implementation of Community Based Conservation, and ecotourism (e.g. CBNRM principles are implemented) • Ensure that private and public sector developments (e.g. industrial, agricultural) adhere to environmental and social standards
LOCAL SSUSTAINA-BILITY	• Social equity and welfare are prioritised which result in improved human wellbeing • Local sustainable agriculture ensures 'sustainability hotspots', but beyond these areas, degradation continues and habitats are fragmented • The uncoordinated nature of local agricultural choices may undermine regional ecological integrity in the longer-term • There is a high likelihood for retention of ILK as a result of its particular focus on local scales. • Haphazard growth may result in conflicts and numerous environmental crimes while in other areas innovative local adaptation emerges	↑	↓	⤢	→	• Learn from sustainability bright spots and best practice and promote linkages and exchange of knowledge (e.g. ILK for sustainable development). • Promote markets for sustainably produced goods at local and sub-regional level
REGIONAL SUSTAINA-BILITY	• More effective governance allows for more effective environmental regulation, increasing protected area function and coverage, and allowing for improved transboundary environmental cooperation • Conservation efforts are directed at sustainable use and maintenance of ecosystem services, rather than species protection • Technological innovation drives landscape homogenisation and potential food security with overall increase in human well being	↑	↓	⤢	↑	• Leverage regional strength to access and develop sustainable global markets without compromising local ecosystem integrity • Build sub-regional resilience to shocks (e.g. climate related disasters) by maintaining global connections (e.g. markets, partnerships, resources, innovations)

↓ Decreasing ⤢ Mixed trends ↑ Increasing → Current trend continues