

PROTECTED AREAS & CLIMATE CHANGE in Namibia

What is climate change?

Climate change is a change in the average weather or a change in the distribution of weather events from a previous condition. Climate change may be limited to a specific region, or may occur across the whole world.

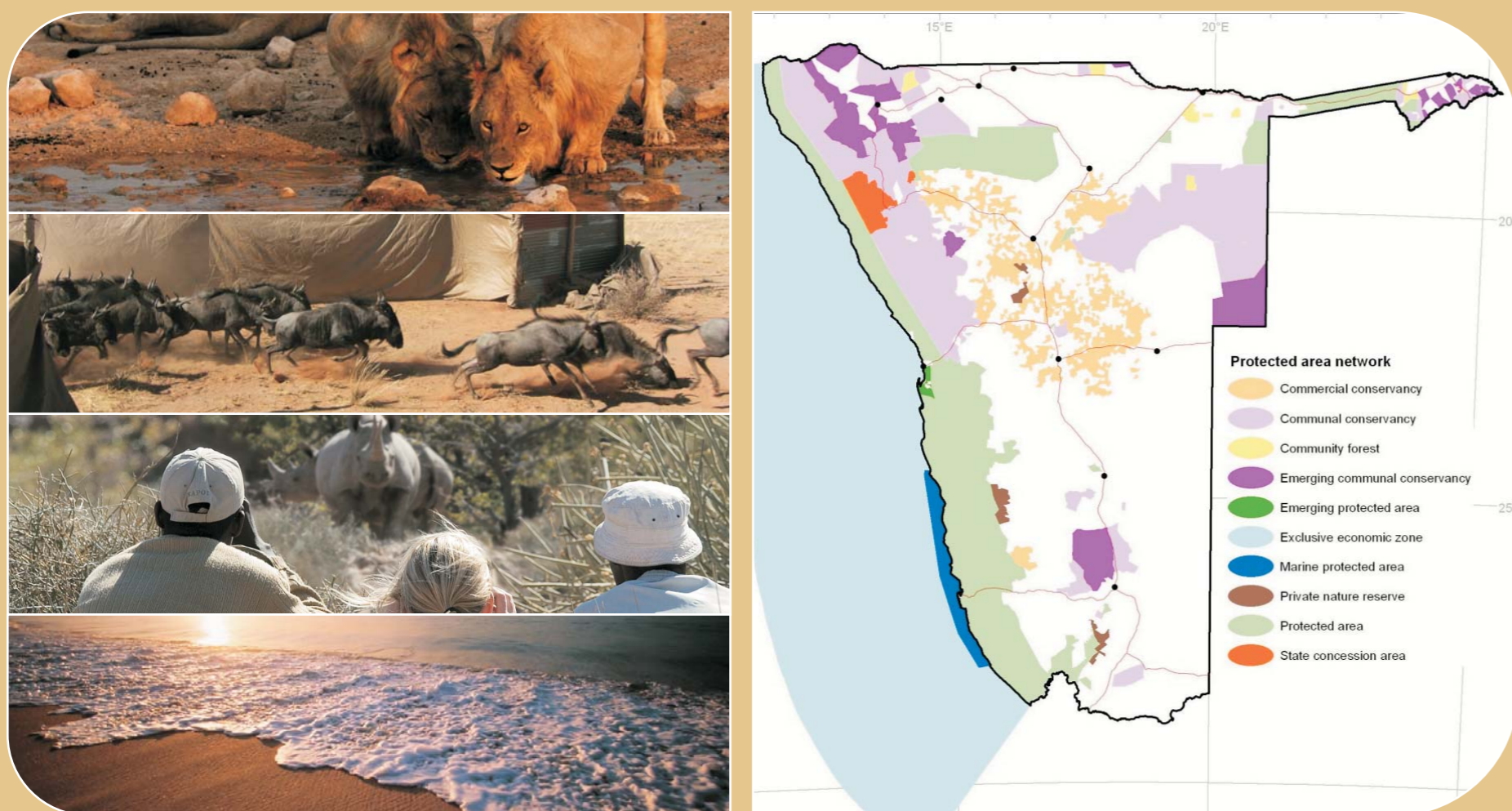
levels due to emissions from fossil fuel combustion, followed by aerosols and cement manufacture. Other factors include inappropriate land use, ozone depletion, animal agriculture and deforestation.

Scientific evidence points to human activity as the likely cause for the rapid increase in global average temperatures over the past several decades. The main causes of human-induced climate change are the increase in greenhouse gasses, mainly carbon dioxide (CO₂)

Namibia contributes minimally to the causes of climate change, but we must find ways to adapt to the changing climatic conditions.

What is Namibia's protected areas network?

Protected areas include state-owned national parks, communal and freehold conservancies, community forests, privately owned nature reserves and tourism concession areas. The PAs covers 45% of the country or over 37 million ha.

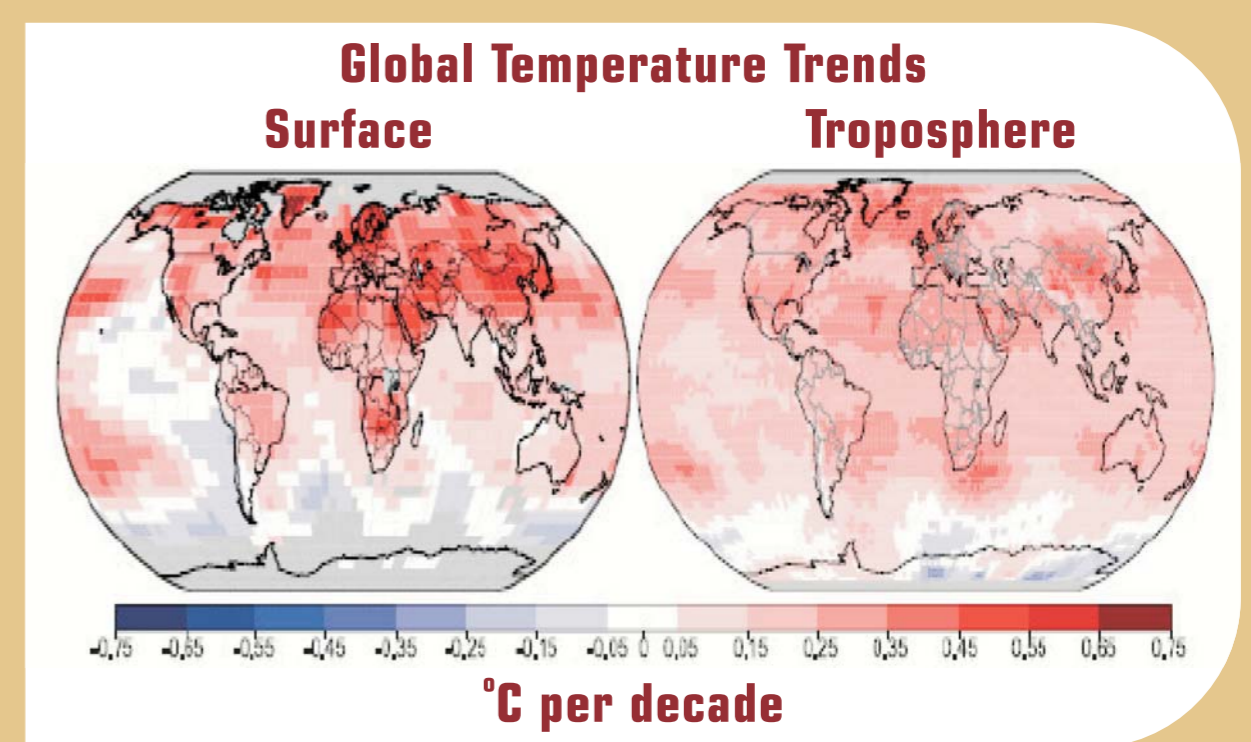


A summary of the Proportional composition (% of total PAS area) of PA categories and ownership types making-up the Namibian PAS.

PA Category	Ownership				Total
	Emerging	Gazetted	Private	State	
Commercial conservancy	0	0	13.4	0	13.4
Communal conservancy	10.1	35.8	0	0	45.8
Community forest	0	1.1	0	0	1.1
Private nature reserve	0	0	1	0	1
State-owned National Parks	0.3	36.6	0	0	36.9
State concession area	0	0	0	1.8	1.8
Total	10.3	73.4	14.5	1.8	100

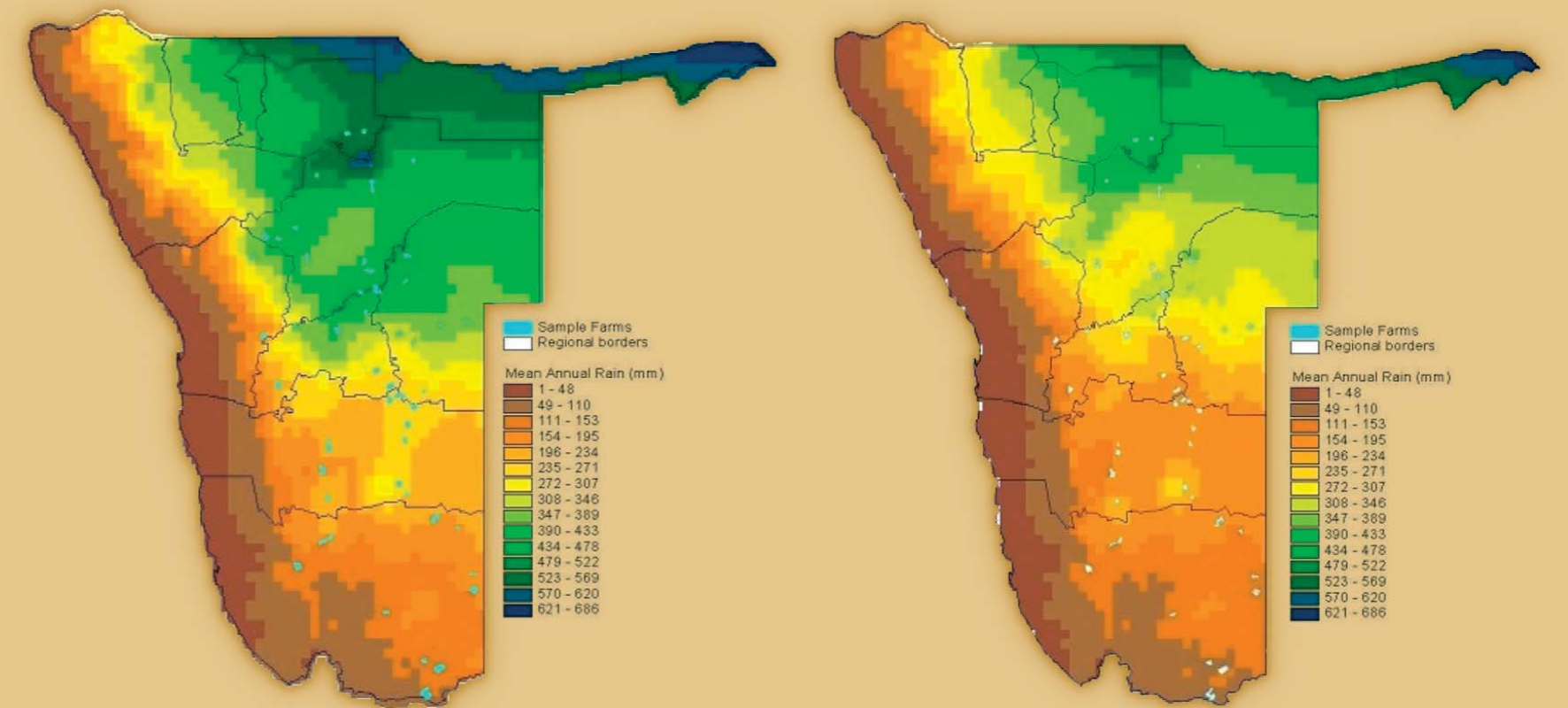
Projected climate change in Namibia

Namibia can expect an increase in temperature and evapo-transpiration at all localities, with the maximum increase in the central interior. Warming is likely to be less along the coast than along the escarpment and inland regions. Some projections are as follows.

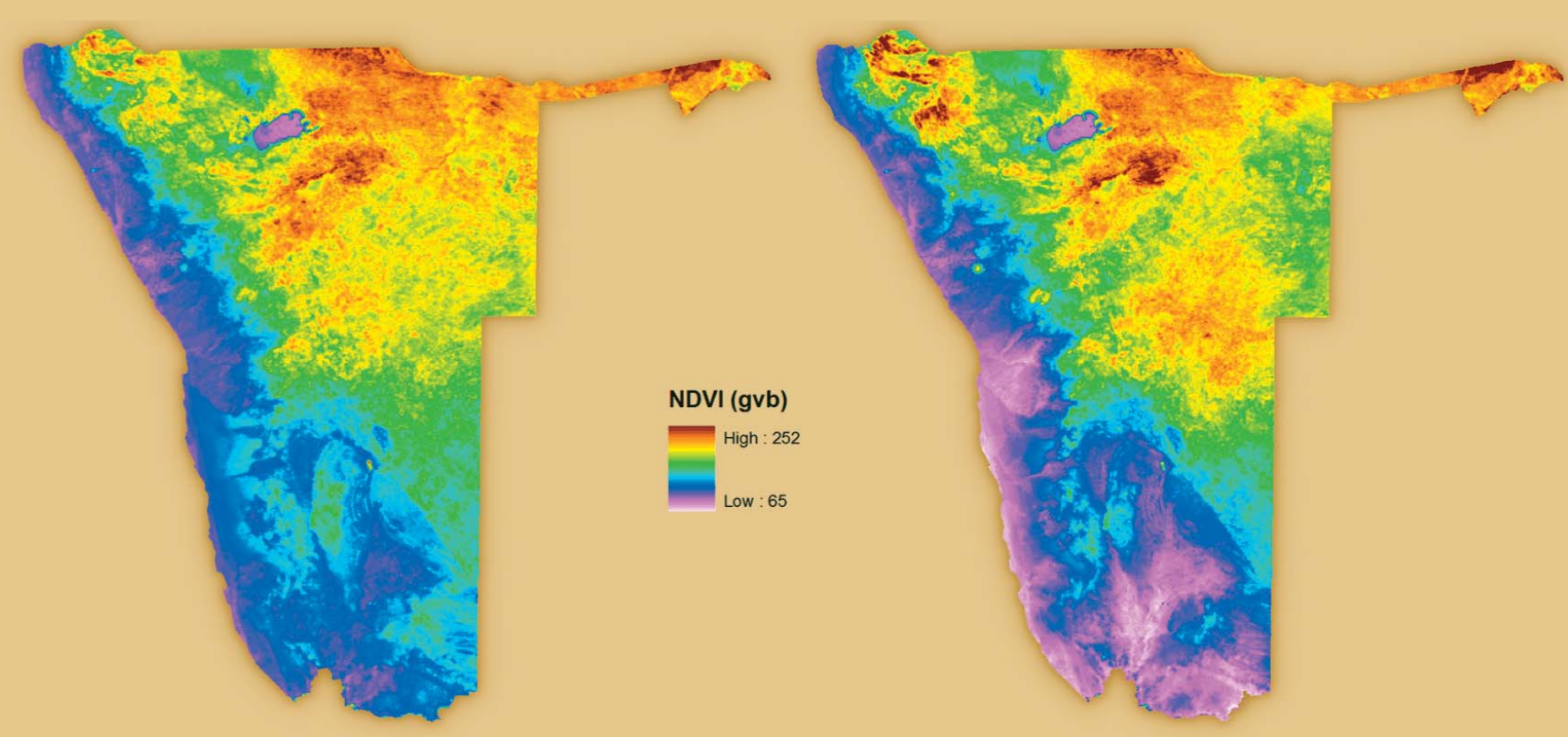


- by 2100 the mean annual temperature increase for the central plateau will be between 2 and 6°C above Namibia's 1961-1990 mean temperature.
- Rising temperatures will cause a corresponding 5% increase in evaporation, and
- an increase in potential evapotranspiration of between 4-5 and 15-16% by the 2060's decade.

Uncertainties in climate forecasts are much greater for rainfall than temperature but Namibia will likely become drier, rainfall variability will increase and extreme events such as droughts and floods are likely to become more frequent and intense.



Current mean annual rainfall across Namibia Predicted 2050



Average plant biomass across Namibia from 1993-2000 Predicted 2100

Impacts of expected Climate Change on wildlife and other living natural resources



Flagship species
Namibia is one of the last refuges of the remarkable black rhinoceros. The range of this species is unlikely to change because of climate change.

Predators & Scavengers
Most predators and scavengers occur in a wide variety of habitats, as their distribution is mainly determined by food availability. As long as food is available and they are not persecuted by humans, their ranges will likely not change much.

Savannah area grazers
Most Namibian grassland game species are arid adapted, and can withstand climate fluctuations. Some may shift eastward as the desert becomes less able to sustain their populations. Maintaining east-west migration corridors are essential for their continued survival.

Woodland area grazers
Specialised grazers are sensitive to climate change, and rare, high value species such as sable, roan and tsessebe are likely to retreat from the western edge of their range to the Kavango and Caprivi regions of north-eastern Namibia.

Marine fish stocks
The Benguela marine system is expected to become more unreliable and less productive as climate change may cause wind and tidal shifts, warmer water and rising sea levels. Namibia's fisheries sector will likely decline as a result.

Fog-dependent wildlife
Climate models cannot currently predict changes in fog occurrence, but if the Benguela becomes a warmer current, fog may be reduced and fog-dependent desert species will be negatively affected.

Livestock
Areas suitable for large stock will decrease substantially but may increase for small stock and wildlife based industries. Current agricultural practices will be less able to support rural people and there may be more wildlife/livestock conflicts.

Cropping
In communal areas there will likely be declining crop production – more years of failure until it is no longer viable to grow rain-fed crops in north-central and western Kavango regions. It is projected that crops will fail more regularly in the Grootfontein area and there will be more pressure on groundwater for irrigation.

Recommendations for adaptations

In order to adequately protect biodiversity and landscapes, Namibia must integrate land and natural resource management. This can easily be done by transforming the current protected areas patchwork into a protected areas network, through partnerships between state-owned parks, communal forests and conservancies, private landowners and tourism operators to work together toward a common goal of open, co-managed landscapes. This network will enable wildlife movements and help people to increasingly use wildlife as the basis for sustainable land use, livelihoods and food security. Wildlife-based industries will become increasingly important in the national economy, and the approach to wildlife should shift from "protection" to "economic production". Protected areas, particularly national parks, hold considerable economic potential to stimulate economic growth without compromising landscape and biodiversity values. A more pro-active approach to using parks as engines for economic development should be implemented.

