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CONSERVATION AND ECOSYSTEMS SERVICES IN WEST AFRICA

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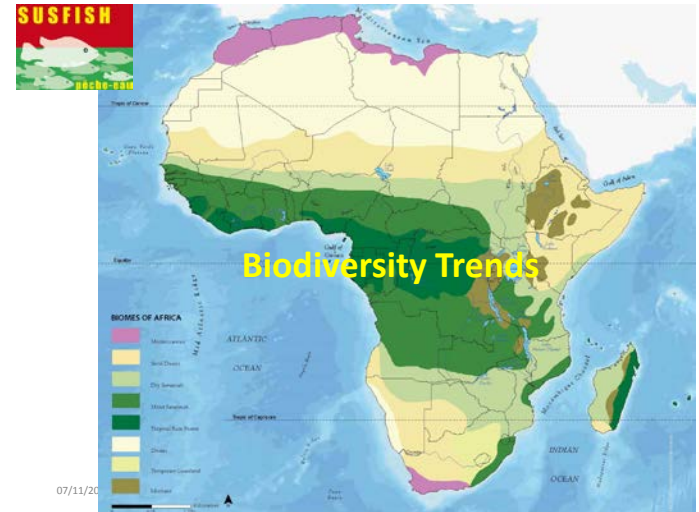
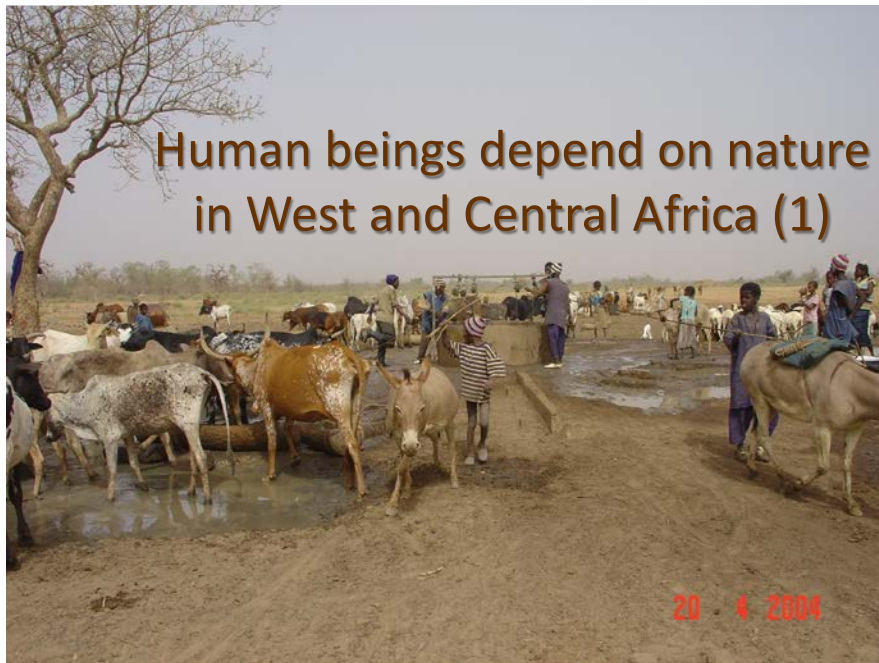
IUCN – West and Central Africa Programme (PACO)

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**Supporting Biodiversity Conservation
efforts in West Africa**

Opportunities for cooperation



07/11/2012

Human beings depend on nature in West and Central Africa



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Health

- **Human diarrhea, malaria, yellow fever and sickle cell anemia** routinely and successfully treated with local plants;
 - sickle cell anemia, treated with a combination of *Fagara xanthoxyloides* and *Calotropis procera* (Nikiema et al, 2010).
 - diarrhea, hemorrhoids, gingivitis, coughs... but also low milk production in young mothers treated with *acacia nilotica* extracts; also used for tanning leather, dye production (Wickens et al. 1995, Lompo, 2005).
- **Several animal diseases treated**
 - Plants such as *Zanthoxylum zanthoxyloides*, *Carica papaya*, *Newbouldia leavis*, and *Morinda lucida* are active against the eggs and larvae of nematodes very frequent in West African small ruminants (Hounzangbe-Adote, 2005)



Food and Energy from sustainable forest management



Energy

- Efficient wood stoves promoted to limit fuelwood consumption
- Use of solar energy encouraged



Food to survive droughts

- *Panicum laetum* Kunth (wild fonio), *Cenchrus biflorus* (cram-cram) are wild cereals harvested particularly during drought years



Income

- Poverty
 - 60% of the population lives with < 1\$/day
 - threshold estimated at 130 €/yr
- Annual income from forest products :
 - €112 to 144 for woodcutters, or
 - 40,17% of total income for women (of which 56% from Non timber forest products)
 - 35,63% for men (26% from NTFP)



Conserving water & fish

To increase food security and provide opportunities for increased production (vegetable gardening, fish, livestock, etc.)

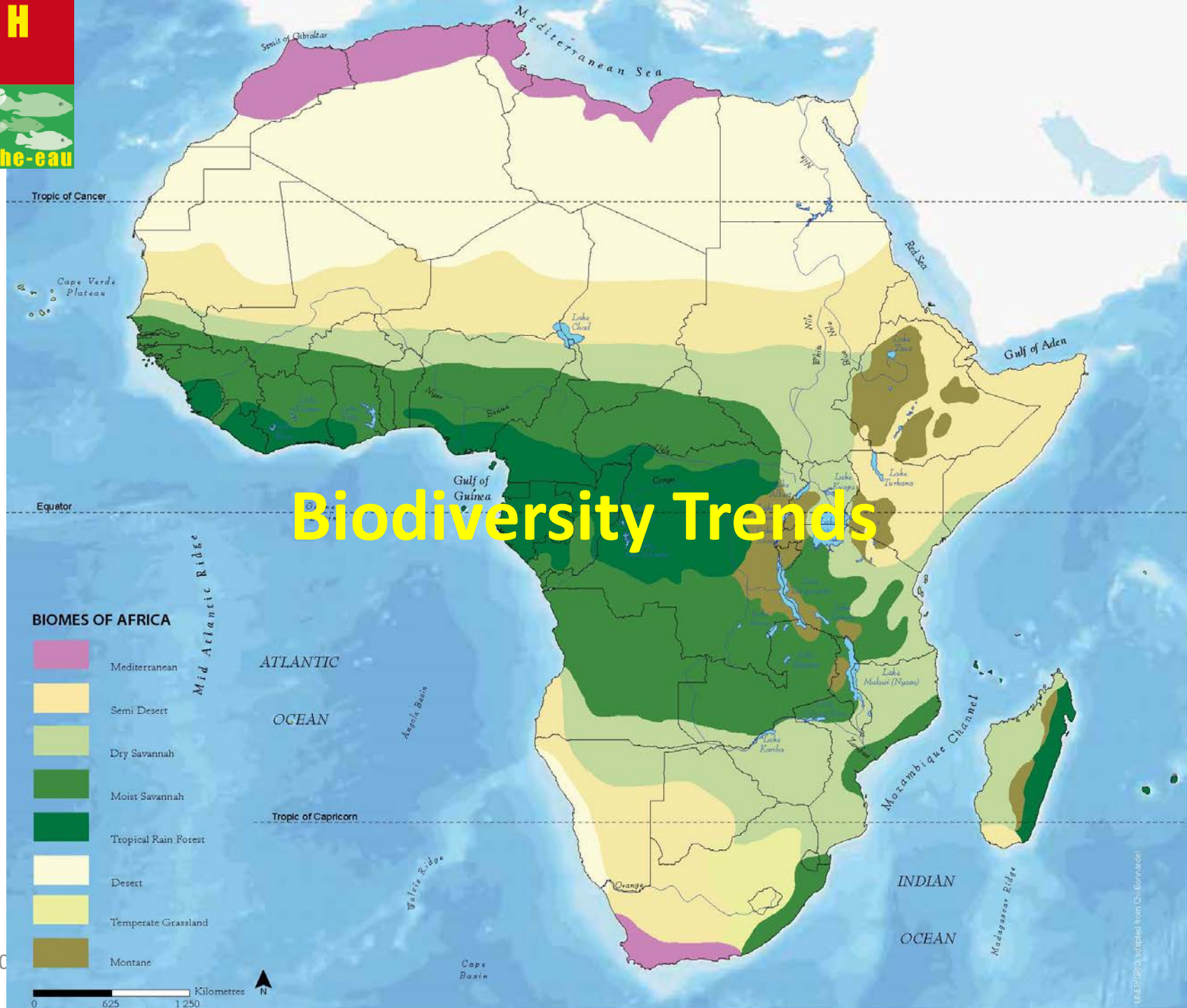


Conserving soil and increasing water infiltration



To secure food production under climate variability and change





Global Trend

Biodiversity is declining

Fragmentation of ecosystems

Deforestation rates vary from 0,05 to 1,5 % annually in West Africa

07/11/2012

Natural Change and Population

Natural change in the environment is continuous and in some cases very dramatic. It has shaped, and continues to shape, life on Earth. Over the past several centuries, the human population has increased at an accelerating pace, so that there are now more than 6 600 million people on the planet. By 2050, that number is expected to reach 9 000 million.

Worldwide, the exploding human population has become a driving force of environmental change on many fronts and at an unprecedented scale. In Africa, a growing population and specific human activities are impacting the air, land, and water, as well as the plants and animals that also call the continent home.

Africa's "Shrinking" Land Base

Increased population increases pressures on the land and its resources. In a hypothetical situation whereby land is shared equally among its population, each individual's share of land would decrease with the increase in population as time passes, putting more pressure on resources.

1970
8.3 ha/person

1990
4.7 ha/person

2005
3.2 ha/person

2050
1.5 ha/person

1950
13.5 ha/person

Changing Population

Africa's population grew 2.32 per cent annually between 2000 and 2005—nearly double the global rate of 1.24 per cent per year (UN 2007). Twenty of the 30 fastest growing countries in the world are in Africa, including Liberia which has the highest annual growth rate of any country in the world at 4.8 per cent (CIA 2007b). The United Nations' Population Division projects that Africa will have the fastest growth rate in the world between 2000 and 2050, twice the rate of any other region during that time (UN 2007). Sub-Saharan Africa is also rapidly urbanizing and is expected to sustain the highest rate of urban growth in the world for several decades (UNFPA 2007).

With more people to feed, Africa must devote more land to agriculture. However, increasing agricultural lands means

Population
■ Global
■ Africa

Source: US Census Bureau, UN 2007, OERI

8000 BC 7000 6000 5000 4000 3000 2000 1000 1 AD 1000 2050

9 000
8 000
7 000
6 000
5 000
4 000
3 000
2 000
1 000
millions



THE STATUS AND DISTRIBUTION OF FRESHWATER BIODIVERSITY IN WESTERN AFRICA

Smith, K.G., Dudgeon, M.D., Nkomo, M. and Dorward, R.F.T.



WESTERN AFRICA



Estimated numbers of extant inland water-dependent species by major taxonomic group

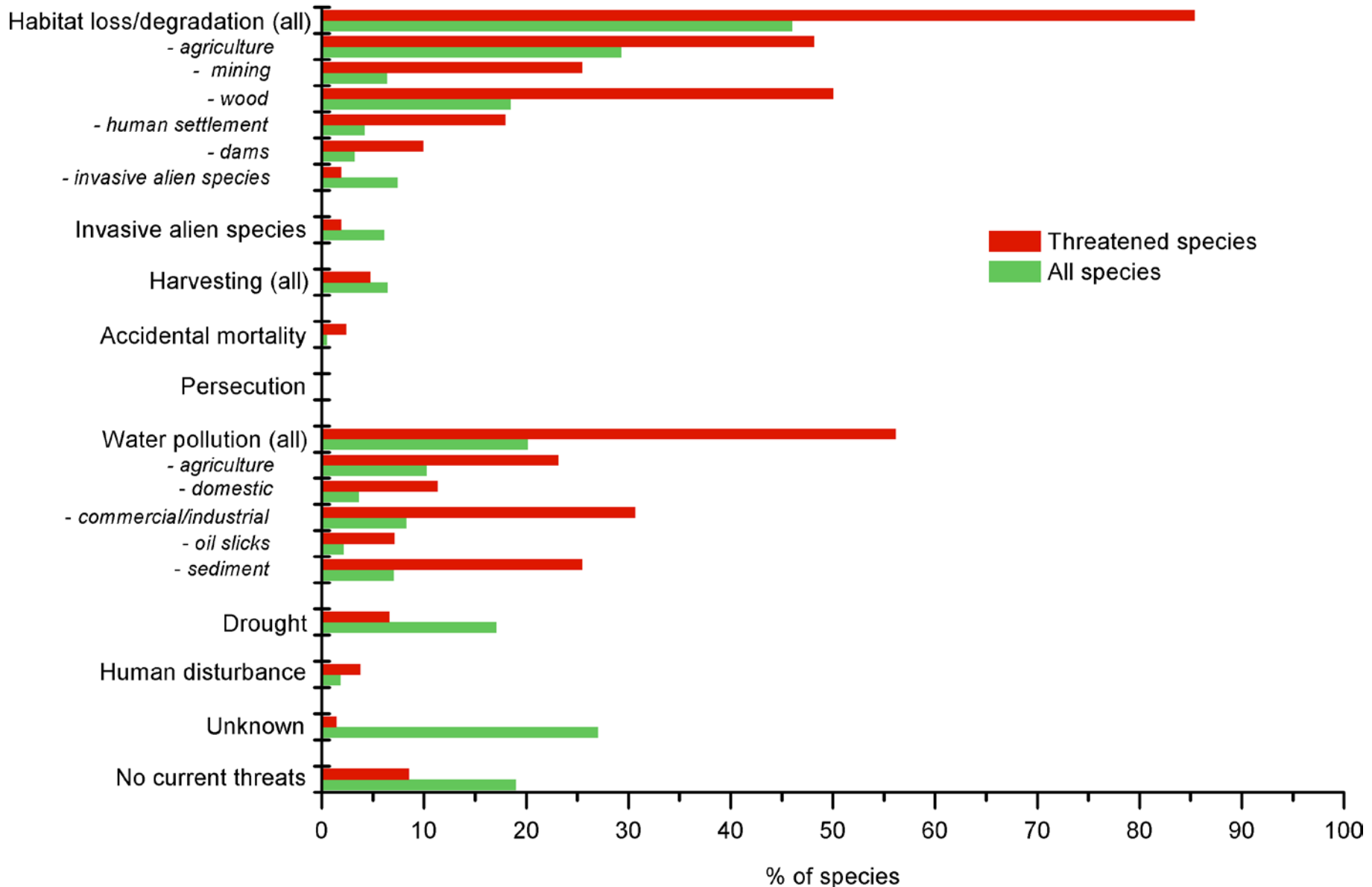
Taxon	Number of described species	Number of species in western Africa	% of global total found in western Africa
Fishes	~15,000	563	4%
Molluscs	~ 5,000	90	2%
Odonates	5,680	287	5%
Crabs	1,446	35	2%
Amphibians	4,231	150	4%
Mammals	145	16	11%
Waterbirds	730	179	25%
Turtles	260	3	1%
Plants	c. 2,614	472	18%

Data sources: Balian *et al.* (2008); IUCN Red List (2008)

The IUCN Red List Category classifications by taxonomic groupings

Taxon	Total	EX	EW	CR	EN	VU	NT	LC	DD
Fishes	521	0%	0%	3%	8%	15%	11%	52%	11%
Odonata	287	0%	0%	2%	2%	5%	1%	76%	14%
Molluscs	90	0%	0%	6%	6%	6%	2%	6%	16%
Crabs	25	0%	0%	8%	16%	16%	0%	40%	<u>20%</u>
Aquatic Plants	472	0%	0%	1%	0%	1%	1%	75%	<u>22%</u>
Total	1,395	0%	0%	2%	4%	8%	5%	<u>66%</u>	16%

Threats to freshwater species in WA



- The inland waters of western Africa support a high diversity of aquatic species with high levels of endemism. Many of these species provide direct benefits to people. The conservation of these species is most important to the livelihoods and economies of the regions' people.
- **More than 14% of species** across the region **are currently threatened** and future levels of threat are expected to rise significantly due to a growing population and the corresponding demand of natural resources.
- **Species information remains very limited** for many species within the region with between 10% (fishes) and 22% (crabs) assessed as Data Deficient.

Burkina Faso (Vascular Plants)

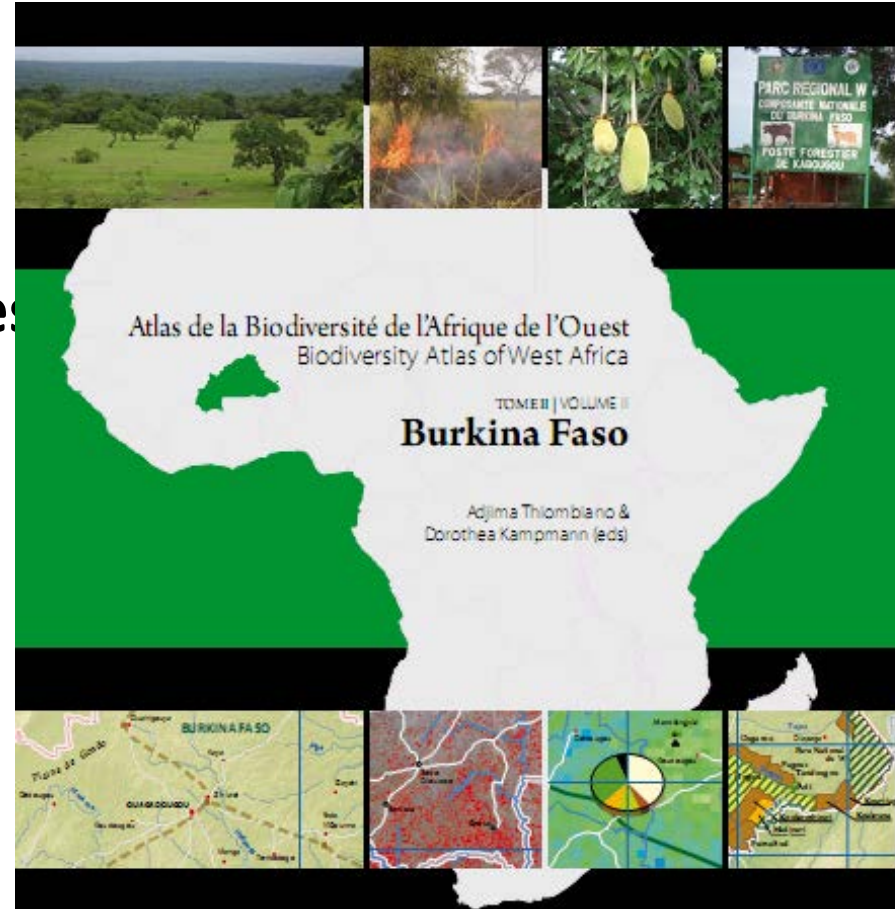
➤ Guinko (1984): **1097 Species**



➤ Lebrun et al. (1991): **1203 Species**



**527 Medicinal Species recorded
(Nacoulma, 1996)**



➤ Thiombiano et Kampmann (2010): **1915 Species**

➔ **712 species described within 20 years**

60 species in Burkina Faso recorded as threatened



International Union for Conservation of Nature

Conserving biodiversity

Pioneering nature's solutions to global challenges

WHY CONSERVE BIODIVERSITY?

Biodiversity is the variety of life on earth.

Biodiversity provides us with:

- Food
- Clean air
- Water
- Energy
- Shelter
- Medicine
- Recreation
- Inspiration



- An estimated **40%** of the **world's economy** is based on the use of **biological resources**.
- **780 million** people lack access to **clean water** and 2.5 billion lack adequate sanitation.
- More than **70,000** plant species are used in traditional and modern **medicine**.
- **Coral reefs** provide coastal protection and other valuable services worth an estimated **US\$ 170** billion a year.



WHY IS BIODIVERSITY AT RISK?

Species extinctions are continuing at about 1,000 times the natural rate, calculated from fossil records.

Threats to biodiversity include:

- Habitat destruction
- Land conversion for agriculture and development
- Climate change
- Pollution
- Spread of invasive species



- **37%** of the more than 65,500 species assessed on the IUCN Red List of Threatened Species face **extinction**.
- 70% of **coral reefs** are **threatened** or destroyed.
- **Deforestation** of tropical rainforests could account for the loss of as many as **100** species a day.
- **50%** of the world's **wetlands** have been lost in the past century alone.



Founded in 1948, IUCN is the world's largest global environmental organization.

- A unique **democratic** Union with more than 1,200 State and NGO Member organizations in 160 countries.
- The leading provider of the **latest knowledge** about biodiversity, with more than 11,000 experts and scientists.
- The only environmental organisation with official **Observer Status** at the **United Nations** General Assembly.





OUR VISION, OUR MISSION

“A just world that values and conserves nature”

Influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.





WHAT WE DO

KNOWLEDGE

We provide the latest **science and knowledge** on ecosystems and biodiversity and their contribution to **human well-being**.

ACTION

We run hundreds of **field projects** around the world to better manage natural environments.

INFLUENCE

We help governments, communities, NGOs and the private sector develop environmental **laws, policies** and **best practice**.



OUR PRIORITIES

Valuing and conserving nature

Science and knowledge about biodiversity, the threats it faces and measures to conserve it guide action on the ground.

We produce:

- The IUCN Red List of Threatened Species™
- The IUCN Red List of Ecosystems
- The World Database of Protected Areas
- A new list of Key Biodiversity Areas



OUR PRIORITIES

Effective and equitable governance of nature's use

We all depend on nature. Healthy nature is essential for the growth and prosperity of our societies.

What we do:

- Demonstrate how better governance of nature's use supports the well-being of people.
- Help to ensure that the benefits of nature are shared equitably.
- Manage ecosystems to improve food security and livelihoods.



OUR PRIORITIES

Nature-based solutions to global challenges

Nature can play a key role in tackling climate change and ensuring food, energy and water security.

What we do:

- Manage river basins to secure food and water supplies.
- Restore forests to help reduce climate change.
- Manage landscapes to empower people to adapt to climate change and conserve nature.
- Manage ecosystems to enable mangroves to provide protection from natural disasters.



Supporting Biodiversity Conservation efforts in West Africa

Opportunities for cooperation





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Adapting approaches to BD Conservation

- Preserving the Key hotspots of BD (PAs, forests and river basins)
- Evolution of conservation paradigms (from military to participatory/joint conservation)
- Integrated management (Multi-disciplinary and multi-sectoral)
- Ecosystem approach (12 principles)
- Ecosystem-based approaches to climate hazards (adaptation, mitigation)
- Effective governance of ecosystems (Equitable access and benefits sharing)
- Payment for ecosystem services (PES) and Greening Economy



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Filling Knowledge Gaps to Decision-making

- Description of Species/taxonomy
- Assessing the conservation status (IUCN Red lists of Species and ecosystems) www.iucnredlist.org
- Managing and sharing knowledge: Global biodiversity information facility (GBIF) www.gbif.org ; World Database on Protected areas (UNEP) www.wdpa.org; Key Biodiversity Areas www.iucn.org/KBAs
- Providing standards and Guidelines: www.iucn.org
- Linking conservation to economy - The Economics of ecosystems and biodiversity (TEEB): www.teebweb.org
- The intergovernmental science policy platform on biodiversity and ecosystems services (IPBES): www.ipbes.net

Thank you



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