Panorama de la recherche

Scénarios de la biodiversité africaine

Anticipation du devenir de la biodiversité et des services écosystémiques & adaptation aux changements globaux

Scénarios of biodiversity change in Africa

Anticipation of the future of biodiversity and ecosystem services & adaptation to global change

Paul Leadley & Christophe Le Page

Atelier régional /// Regional workshop
Scénarios de la biodiversité africaine /// Scénarios of biodiversity change in Africa

25-27 Mars 2013 • Libreville - Gabon • 25-27 March 2013
Diversity of « forward-looking » approaches

• Expectation (revealing plausible futures) versus Desire (defining targets)

• Outlining the future (policy-maker) versus Fostering anticipatory learning to enable adaptive co-management (local community)
Whole planet scenarios

IPBES Terminology

‘Scenarios’
of socioeconomic development

‘Models’
of direct drivers

‘Models’
of biodiversity
And ES

Climate change is projected to increase substantially in importance as a conservation issue over the next several decades.
Climate change as a driver of biodiversity dynamics

IPCC CMIP5 RCP scenario (RCP 8.5 – June, July, August)

Air temperature 2016-2035

No year hotter than hottest year over 1986-2005
Every year hotter than hottest year over 1986-2005

Precipitation (change between 1986-2005 and 2080-2099)

Diffenbaugh & Giorgi 2012
Shifts in species ranges due to climate change leads to projections of substantial species turnover important conservation areas. Example: Important Bird Areas (IBAs)

The IBAs network is projected to provide coverage for most priority bird species even under climate change…

but only if species can disperse across landscapes between IBAs

Hole et al. 2008
Climate change has already caused species ranges to shift on the order of 10 km per decade and this trend is projected to continue throughout the 21st century. Example of the Regal Sunbird (\textit{Nectarinia regia}) currently of Least Concern (IUCN) but with substantial range contraction projected due to climate change. 

\textit{Sekercioglu et al. (2012) and Birdlife International}

• Climate change has already caused substantial range shifts of most animal species studied and these are projected to continue over the coming decades (10’s of km per decade)

• Biodiversity conservation strategies need to account for these projected range shifts. This will require collaboration at international scales

• Conservation strategies must account for habitat suitability of all land use types, since species will move across a wide range of landscapes
Land use change in Africa will be the principal driver of biodiversity change over the next several decades.
Regional scale land cover change is typically anticipated to be the most extensive in Sub-Saharan Africa

Millennium Ecosystem Assessment scenarios - Jetz et al. 2007
Regional scale land cover change is typically projected to be the largest in Sub-Saharan Africa…

with potentially large impacts on biodiversity

Example: Projected number of species of bird extinctions by 2100

Millennium Ecosystem Assessment scenarios - Jetz et al. 2007
Goals set on the basis of science-stakeholder dialogs

New socio-economic development scenarios illustrate ways in which land cover changes can be strongly attenuated, human development goals attained and climate change mitigated.

Backcasting analysis, working back from a sustainable end point to determine actions for today.

Goals set on the basis of science-stakeholder dialogs

Rods from Rio+20
Pathways to achieve global sustainability goals by 2050

PBL Netherlands Environmental Assessment Agency
Global biodiversity and options to prevent biodiversity loss

Global biodiversity

- Trend scenario
- Goal
- Derivation of 2050 goal

Risks from Rio+20
Pathways to achieve global sustainability goals by 2050

- Reduce nature fragmentation
- Reduce infrastructure expansion
- Reduce nitrogen emissions
- Mitigate climate change
- Restore abandoned agricultural lands
- Reduce consumption and waste
- Increase agricultural productivity
- Expand protected areas

- Global Technology pathway
- Decentralised Solutions pathway
- Consumption Change pathway
Anticipatory learning through participatory scenarios planning

Promoting dialogue within multi-stakeholder platforms to enhance the adaptive capacity of grassroot people and the resilience of the socio-ecosystem

Need for adequate tools to generate experience of dealing with change

Suitable use of these learning tools in high poverty contexts with complex livelihood-vulnerability risks (ability to learn by mistakes)

Tschakert and Dietrich, 2010
Participatory simulation of local resource-users decision making processes
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Korup National Park

Bakut

Osselle

Basu

Mbegati

Abat

Bajoh

Bayip-ossing
Participatory simulation of local resource-users decision making processes
Confluence of Futures Studies, Action Research & Resilience

www.resilience2014.org

May 5-9, 2014
Le Corum • Montpellier • France