

Comment form for 1st Review Phase of the Deliverable 2b) Regional and subregional assessments of biodiversity and ecosystem services for Africa, Chapter 1 'Setting the scene'

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Abdelfattah Badr (AB)
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Diane Douglas (DD)
German IPBES Coordination and national scientists (IPBES)
Gianluca Ragusa (GR)
Intergovernmental Technical Panel on Soils (ITPS)
Josiane Seghieri (JS)
Lochran Traill (LTO)
Majda Amina Aziza (MAA)

Matthew McCartney (MM)
Nakashima - ILK expert (N)
Rainer M Krug (RMK)
Safaa A. Ghoneim (SAG)
Samia Sediri (SS)
Susan Ringrose (SR)
Vincent-Akpu Ijeoma (VAI)
William Olupot (WO)

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
1	German IPBES Coordination office and national scientists (IPBES)	0	General			A half-to-one-page abstract/executive summary related to the background, methodology and key findings would be helpful, particularly for new readers. An abstract is already included in Chapter 6.	Done
2	German IPBES Coordination office and national scientists (IPBES)	0	General			This chapter with 50 pages plus 13 pages references seems rather long, particularly in view of the length of the other chapters or the overall envisaged length of the Africa Assessment.	I suggest that we worry about the length in the SOD & after trading paragraphs with the other chapters. Got a request in that sense from chapter 6
3	German IPBES Coordination office and national scientists (IPBES)	3	41	4	81	Introductory paragraph contains statements without scientific evidence and references.	References have been added, though more specific indications would have been helpful
4	German IPBES Coordination office and national scientists (IPBES)	3	41	5	111	This part should be specified for Africa. Very general issues should not be included in the regional assessment.	Key statement have been "Africanised" while maintaining the introductory character of this introduction
5	Rainer M Krug (RMK)	3	42	3	42	Should be "cannot be overstated" instead of "understated"	Corrected
6	Gianluca Ragusa (GR)	3	53	3	53	Better to say a policy focused at regional assessments, such as the present on for Africa	Corrected

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
7	Gianluca Ragusa (GR)	3	58	3	59	food security, and good quality of life for the people in the regions, and what are the interdependences among them?	Corrected

8	Lochran Traill (LT)	4	72	4	74 It is incorrect to state that human-environment interactions are oldest in Africa. Hominids such as H eerctus occurred across Eurasia too	This is a fallacy. The human-environment interactions we are concerned about are those involving <i>Homo sapiens</i> , whose African origins and length of stay in Africa are now uncontested (as reconfirmed again recently by 3 separated studies of the human genome published in Nature in 2016: Malaspinas, A.-S. et al. Nature http://dx.doi.org/10.1038/nature18299 (2016). Mallick, S. et al. Nature http://dx.doi.org/10.1038/nature18964 (2016). Pagani, L. et al. Nature http://dx.doi.org/10.1038/nature19792 (2016). We are concerned about our own species (twice sapiens and aged "only" about 200,000 years), not all all Homids (of the genus Homo) that have roamed Africa & the planet for 2 million years. five references have been added to the text.
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9	Nakashima - ILK expert (N)	4	74	4	75	<p><i>"A range of examples show mutually beneficial interactions between nature and people, often as a result of indigenous knowledge built up through the generations"</i></p> <p>FOR EXAMPLE:</p> <ul style="list-style-type: none"> - Andersen et al. 2014. "Traditional nomadic tending of trees in the Red Sea Hills" (Egypt and Sudan). The authors described the practices developed over many generations by local dwellers, which contributed to shaping the landscape as it is. They describe the different practices local inhabitants use to tend the trees, and discuss their potential benefits for the longevity of the trees and the preservation of the landscape. - Agidie et al. 2014. "Agroforestry practices and farmers' perception in Koga watershed, upper Blue Nile Basin, Ethiopia". 	Reference added, though details not included (managing for length). Full references needed from reviewer.

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>- Blanco & Carrière 2016. "Sharing local ecological knowledge as a human adaptation strategy to arid environments: evidence from an ethnobotany survey in Morocco". The authors record local ecological knowledge (LEK) relative to plants and plant use in an arid ecosystem. They suggest that LEK is the basis of an adaptation strategy to this kind of ecosystem, and that a system of sharing LEK among members of the community allows the guarantee of the resilience of the community's livelihood in a changing and uncertain ecosystem.</p>	

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						<p>- Chibememe et al. 2014. "Embracing indigenous knowledge systems in the management of dryland ecosystems in the Great Limpopo Transfrontier conservation area: the case of Chibememe and Tshovai communities, Chiredzi, Zimbabwe". The authors argue that traditional communities in Zimbabwe have developed a system of practices based on local knowledge ensuring the sustainable exploitation of resources, and conservation of land and biodiversity. These practices are often embedded in the spiritual and religious worldview.</p> <p>- Hammi et al. 2010. "Can traditional forest management buffer forest depletion? Dynamics of Moroccan High Atlas mountain forests using remote sensing and vegetation analysis." The authors analyze the effect of a local system of forest management (agdal) in the Moroccan Atlas on the preservation for forest areas.</p>	
10	Matthew McCartney (MM)	4	80	4	80	Replace "get rid of" with "eliminate"	Reference added, though details not included (managing for length). Full references needed from reviewer.
11	Andriamahazo Michelle (AM)	4	82	4	86	There should be more explanation and clarification	All figures to be redrawn for quality, using help from a

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						of the figure 1.1: The analytical Conceptual Framework (CF) of IPBES as it sets up the goal basis of the assessment.	specialist in Luis's lab in France. In the meantime, I refer to Khaled to respond to the specific questions regarding figure 1.1. (Highlighted in yellow). Reference added, though details not included (managing for length).
12	Josiane Seghieri (JS)	4	84	4	85	There should be the meaning of the figures on Figure 1.1	
13	Matthew McCartney (MM)	4	84	4	85	Figure 1.1 refers to "ecosystem goods and services". My understanding was that following the MEA the simple term "ecosystem services" is generally used and no distinction is made. Whatever is used, should be consistent throughout the assessment	
14	Matthew McCartney (MM)	4	86	4	86	Figure should be referenced somewhere in the text prior to its occurrence	
15	Abdelfattah Badr (AB)	4	86			Legend of Figure 1.1, delete (CF)	
16	Rainer M Krug (RMK)	4	Figure 1.1	4	Figure 1.1	The caption should explain the graph - what are the numbers, blocks and Arrows?	
17	William Olupot (WO)	5	89	5	89	Specify the number of regional assessments	One of the 4 RA

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18	Matthew McCartney (MM)	5	93	5	95	It is not clear exactly how the review makes use of ILK if it is not written up in peer-reviewed or grey literature	Good question but probably will not apply. Replace « and » with « including » Corrected.
19	Gianluca Ragusa (GR)	5	97	5	97	Analysis, synthesis and critical judgement of information. In my understanding analysis include critical judgement	Corrected
20	Andriamahazo Michelle (AM) (AM)	5	106	5	107	Need more explanation and more details about carbon smart prospects for green-blue transformations in the economy. There should be definition of green blue transformation in the economy	Done. Definition and details added
21	Rainer M Krug (RMK)	5	113	5	113	It should be made clear that BES refers to BIODIVERSITY as well as ECOSYSTEM SERVICES. My initial thought was "BIODIVERSITY SERVICES and ECOSYSTEM SERVICES"	This is already clearly specified in the text. Lines 128-130 of the current, corrected FOD. It will also be in the glossary
22	Samia Sediri (SS)	5	115	5	118	The definition of BES, should include <i>Homo Sapiens</i> as part of biodiversity - refer to (R. Barbault and J. Weber)	This is a point of doctrine with which we tend to agree, but that would risk side-tracking the introductory chapter given that we already have a conceptual framework of BES-Human interactions to stick to

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23	Samia Sediri (SS)	5	122	5	126	Include the <i>Supporting services</i> in the ecosystem services, as mentioned in the Chapter 2, page 28	Not in the IPBES framework anymore. Questions to Chairs: is this to be addressed by the assessment and eventually where?
24	German IPBES Coordination office and national scientists (IPBES)	5	124	5	124	Include "food" as provisioning service.	Done. Included
25	Gianluca Ragusa (GR)	6	132	6	178	In terms of food security they have forgotten lakes, great rivers and wetlands and coastal areas and fishes as well as mineral resources (Africa is a rich continent but unfortunately they don't manage by themselves the resources).	Done. Included
26	Rainer M Krug (RMK)	6	138	6	138	In addition to animals, also mention plants (Protea species, hoodia, etc) to avoid bias for animals	Plants, reptiles, amphibians, birds and invertebrates are already quoted in lines 140-141
27	Rainer M Krug (RMK)	6	139	6	139	"Significantly rich" does not make sense, probably "extraordinarily rich" instead?	replaced by extremely
28	Rainer M Krug (RMK)	6	141	6	151	Apart from mountain and forest ecosystems, there are many other biodiversity hotspots in Africa (deserts, Karoo, Fynbos in South Africa). They are mentioned below, but these lines are too narrow.	rephrased

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29	Lochran Traill (LT)	6	170	6	175	Discussion of the Mediterranean is not relevant	Mostly removed
30	Abdelfattah Badr (AB)	6	175			Leave space between Plant and life	No. Plantlife International is written without space. But reference has been removed anyway
31	Safaa A. Ghoneim (SAG)	6	139 box 1.1	6		I recommend adding a paragraph about the Red sea biodiversity as one of the richest and main hot-spot in Africa.	Paragraph added
32	Rainer M Krug (RMK)	6	Box 1.1	6	Box 1.1	This box is animal biased and mountain biased. The Cape Floristic Region, as a Mega diverse region) deserves at least half a paragraph	Paragraph added
33	Matthew McCartney (MM)	7	184	7	184	add bold text: ".. that are essential for, and improve , our daily lives..."	Added
34	Rainer M Krug (RMK)	7	189	6	191	The role of BES in "spiritual wellbeing, through cultural or religious significance" are in many areas of Africa of paramount importance. In this context, the "They can even" is misleading and should be replaced by "They also" or "In addition, they..."	Modified
35	Rainer M Krug (RMK)	7	191	7	191	I would suggest to replace "can" with "do".	Modified

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36	Matthew McCartney (MM)	7	191	7	191	Myers 2013 is missing from the reference list. Another good reference here is: FINLAYSON, C.M., HORWITZ, P. & WEINSTEIN, P. (eds) Wetlands and human health. Springer.	Reference added
37	Matthew McCartney (MM)	7	199	7	199	Different categories of ES are not as clearly presented in Figure 1.1	We agree. We will look for high quality figure to add it to this section
38	Matthew McCartney (MM)	7	200	7	201	It would be better if presentation in Table 1.1 categorised ESs in the 3 classes mentioned earlier - provisioning, regulating and cultural	See if table 1.1 can be modified accordingly. We agree. We will look for high quality figure to add it to this section
39	William Olupot (WO)	7	212	7	213	sentence should be edited for clarity	Corrected
40	German IPBES Coordination office and national scientists (IPBES)	7	212	7	213	The meaning of this long sentence is not clear.	Corrected
41	Matthew McCartney (MM)	8	216	8	217	Flood mitigation is not really provided by "vegetation". Flood attenuation is a function of many factors including soils, geology, topography etc); how is drought mitigated by vegetation?	This is Kremen's work. Need to double check and add confidence levels if appropriate
42	Abdelfattah Badr (AB)	8	216			Table, header column to the left; name the conceptual framework for ecological studies	Don't understand...

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43	Lochran Traill (LT)	8		8		Table 1.1 - what is an 'ecosystem good'?	Again this is Kremen's work. Ecosystem goods is widely used in the literature. Its definition should be listed in a common glossary for AfRA.
44	Matthew McCartney (MM)	9	225	9	225	It would be very useful to include much more detail of how different countries/sub-regions in Africa did in relation to all MDGs - this could maybe be a box. This would provide a much broader context for this assessment than the current very limited review of the situation which lumps Africa as a single entity and so is not particularly informative	Check the MDG 2015 African report in order to provide a box or table. A table has been adapted from the MDG 2015 report of the AU, but I dont see how it fits in the text. An editorial decision has to be made; considering issues of form and length of chapter
45	German IPBES Coordination office and national scientists (IPBES)	9	225	9	226	A reference about poverty status is needed.	Add reference (possibly MDG 2015 African report or World Bank). Two references added
46	Abdelfattah Badr (AB)	9	226			Add per day to US \$1.25.	Added
47	German IPBES Coordination office and national scientists (IPBES)	9	233	9	233	Unclear formulation: Policy is also human-induced.	Modified
48	Matthew McCartney (MM)	9	243	9	243	Not clear to what "both ways" applies	Modified

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49	German IPBES Coordination office and national scientists (IPBES)	9	257	9	258	The "robust growth" should be attenuated in view of the current moderate growth.	Modified
50	Rainer M Krug (RMK)	10	269	10	269	Please explain figure 1.2	Figure redrawn and better explanations given. A specialist from Luis's lab will work on all the chapter's graphics, including this one, to reach the required quality standards.
51	Andriamahazo Michelle (AM) (AM)	10	272	10	272	Figure 1.2: Basic illustration of key thematic	
52	Andriamahazo Michelle (AM) (AM)	10	272	10	272	Connections [source?]. The source to be given	
53	Andriamahazo Michelle (AM) (AM)	10	272	10	272	There should be further explanation, because it is difficult to understand even with illustration	
54	Abdelfattah Badr (AB)	10	273			Fig 1.2 quality is poor and its legend is not self-explanatory. Source is absent Improve	
55	German IPBES Coordination office and national scientists (IPBES)	10	290			The source of "Basic illustration of key thematic 289 connections" should be given.	

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56	German IPBES Coordination office and national scientists (IPBES)	10	291	15	523	The interdependencies between the key challenges and biodiversity/eco-system services should be elaborated more clearly.	Done
57	German IPBES Coordination office and national scientists (IPBES)	10	291	15	523	The food interface in the food-water-energy-nexus description should appear more prominently.	Done
58	Majda Amina Aziza (MAA)	10	291	26	955	Regarding "setting the scene" available data concerns only specific areas, it is not oriented for east, west, center, north and south Africa, for approach or strategy, like biodiversity state linked to health, urbanization, ecology,	Checked thoroughly section 1.2.1 and provide more general (sub-regional) examples (see also comment in line 63 below). Need to be taken on with SOD
59	Intergovernmental Technical Panel on Soils (ITPS)	10	291	15	523	Section 1.2.1 is too long and need subsections	Subsections added and text more readable now
60	Lochran Traill (LT)	10	292	10	292	On what basis does Africa have 65% of the worlds arable land? I cannot believe that Asia, Europe and the Americas combined account for only 35% of global arable land.	Corrected. The review is right. In fact, Africa is estimated to hold 60% of the world's uncultivated arable land. Africa Progress Panel Report (APR 2014, page 83) and many other reports. The initial analysis was made with 2008 data by the Mckinsey Global Institute (MGI 2010, p 42, with related developments in pp vi, 59 & 61)

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
61	German IPBES Coordination office and national scientists (IPBES)	10	292			Is this really true "Africa has 65 % of the world's arable land"? Add a reference and give more information.	
62	Matthew McCartney (MM)	10	292	15	523	This section on agriculture, natural resources and the food-water-energy nexus is poorly written. It hardly mentions BES and the relevance to the overall assessment is not really articulated. It might be better if this section came after the current section 1.2.2.	This will have to be taken on with the SOD, considering the editorial and substantive changes already made (or to be made, notably in the water segment) and the overall flow of the section. 1.2.1 will more balanced and readable after those changes are made
63	Intergovernmental Technical Panel on Soils (ITPS)	10	292	10	298	Box with no reference	Done
64	Andriamahazo Michelle (AM)	10	294	10	296	Africa's population number to be updated (see lines 533 to 534)	Updated
65	Gianluca Ragusa (GR)	10	314	10	314	Sub-Saharan Africa is a region with an extraordinary number of transboundary river basins and great lakes.	Modified
66	Vincent-Akpu Ijeoma (VAI)	10	324	10	325	list some countries that are located in the high precipitation regions	Done
67	Intergovernmental Technical Panel on Soils (ITPS)	10		Onward		As from Fig 1.2, several figures are very unclear and with no reference	Quality will be addressed for all figures via redrawing by a specialist. 1.3. will be improved through that process

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
68	Matthew McCartney (MM)	11	314	11	333	The discussion on trans-boundary waters is not particularly insightful and the relevance the assessment is not convincing. The comparison of the Nile to the Zambezi is very dubious, particularly as noted the most downstream country in the Zambezi is relatively water rich. The fact that RSA consumes 80% of water in SADC is also not relevant and the comment on "holds potential for conflict" is not helpful	The whole water subsection will be revised to integrate the reviewers comments and to achieve an overall balance. This will have to be done by the top specialists on this subject in chapter 1.
69	Josiane Seghieri (JS)	11	324	11	326	Another example may be added: the Niger river. Its source is just 240 km (150 mi) inland from the Atlantic Ocean, but the river runs directly into the Sahara Desert, then takes a sharp right turn in Mali and heads southeast to the Gulf of Guinea. The water resources of the Niger River are under pressure due to increased water abstraction for irrigation and due to the impact of climate change. The construction of dams for hydropower generation is underway or envisaged in order to alleviate chronic power shortages in the countries of the Niger basin.	Good. Will be integrated in the revision
70	Matthew McCartney (MM)	11	334	11	344	The discussion of climate change impacts on water needs to include something on the fact that it is frequency of extremes (floods and droughts) that might have the greatest impact on society even where rainfall increases overall.	To be integrated

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71	Gianluca Ragusa (GR)	11	352	11	352	Control of the Nile River waters and the construction of a dam	Dam construction is now mentioned
72	Gianluca Ragusa (GR)	11	354	11	354	common property resource and collective action as well as a loss of biodiversity and impacts on populations	integrated
73	William Olupot (WO)	12	370	12	371	consider mentioning recent oil and gas discoveries in eastern Africa	to be considered in SOD
74	German IPBES Coordination office and national scientists (IPBES)	12	375	12	400	Consider the new IRENA report: Africa 2030 Roadmap for a renewable energy future as reference.	to be considered in SOD
75	Matthew McCartney (MM)	12	375	12	407	It is important to note that all methods of energy production, including renewables (and it is not clear if hydropower is defined as such in this report) have impacts on ESs.	Noted now, including the characterization of hydropower as a renewable
76	Rainer M Krug (RMK)	12	390	12	396	Repeats same as previous sentence	Don't understand comment
77	Majda Amina Aziza (MAA)	12	401	12	407	There is also a huge potential of solar energy unexploited,	Mentioned now
78	German IPBES Coordination office and national scientists (IPBES)	12	406	12	407	Examples would be helpful.	Will be considered in SOD

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79	German IPBES Coordination office and national scientists (IPBES)	12	410	12	412	The presentation of the interrelation between food production and the water sector (land degradation, run-off, and groundwater discharge) seems too simplistic.	Will be considered in SOD
80	Rainer M Krug (RMK)	12	410	12	411	There is also the effect of runoff from agricultural lands which contaminates water (insecticides / pesticides)	Will be considered in SOD
81	Vincent-Akpu Ijeoma (VAI)	12	412	13	413	The sentence is not complete and does not convey any meaning	Sentence now completed
82	Josiane Seghieri (JS)	12	Box 1.2:	12	Box 1.2:	the acronym GDP (Gross domestic product) should be explicated	Done
83	German IPBES Coordination office and national scientists (IPBES)	13	415			Repetition "Africa has about 65 % of the world's arable land."	Corrected
84	German IPBES Coordination office and national scientists (IPBES)	13	416	13	418	Is rice really the best example for illustrating the food ex- and import problems for Africa?	rephrased to highlight illustrative nature of rice
85	Vincent-Akpu Ijeoma (VAI)	13	417	13	418	The sentence is not clear	clarified
86	Lochran Traill (LT)	13	418	13		suitable' is misspelled	Corrected

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87	German IPBES Coordination office and national scientists (IPBES)	13	422	13	422	Verification is needed.	Yes
88	Josiane Seghieri (JS)	13	426	13	426	the acronym SDG (Sustainable Development Goals) should be explicated	done
89	Gianluca Ragusa (GR)	13	427	13	427	Biotechnology in the form of GM crops was proposed for years as possible response, despite could be vectors of a loss of biodiversity.	Don't understand comment
90	Lochran Traill (LT)	13	428	13		what is 'bt maize'?	Explained now
91	Lochran Traill (LT)	13	432	13		No such thing as 'indigenous seeds'. All food crops have been artistically selected by humans - and are thereby GM.	This comment is rhetorical and not scientifically founded, genetical engineering is very different from seed selection
92	Abdelfattah Badr (AB)	13	440			Figure 1.3: quality requires improvement	Yes; see other figure related comments
93	Andriamahazo Michelle (AM)	14	461	14	462	There should be definition of Integrated Landscape Management (ILM), as it is one of the most recent initiative and concept	Done
94	German IPBES Coordination office and national scientists (IPBES)	14	462	14	463	Statement about the replacement of chemical fertilizers lacks evidence.	References are being gathered, though not yet included

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95	Nakashima - ILK expert (N)	14	467	14	467	<p>Section 1.2.1. on agriculture; paragraph on developing alternatives to chemical fertilizers...</p> <p>COULD BE ADDED: Sustainable agricultural management based on ILK and local practices:</p> <p>FOR EXAMPLE: Agidie et al. 2014: "Agroforestry practices in general have an important role in the watershed both for food and wood security and the conservation of the environment". / Homegarden agroforestry in Ethiopia: gardens present a mix of agricultural crops and multipurpose trees that contribute to improve biodiversity.</p> <p>AND Growing development of the implementation of Geographical Indications systems: potential to protect local economies, and promote local knowledge and practices (Cormier-Salem et al. 2010; Roussel & Verdeaux 2007). <-- Also in section 6.3.3.</p>	Done. Integrated
96	Vincent-Akpu ljeoma (VAI)	14	470	14	473	The sentence require a reference	Done
97	Josiane Seghieri (JS)	14	476	14	476	the acronym GDP (Gross domestic product) should be explicated	Done
98	Nakashima - ILK expert (N)	14	477	14	480	<i>"Pastoralism has immense potential for reducing poverty, generating economic growth, managing the environment, promoting sustainable development, and building climate resilience."</i>	Integrated

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						<p>ADD that pastoralism has this potential notably because it relies on ILK built through generations of practice and living in specific environments. Pastoralism has been a livelihood in many areas since millennia and, through these practices, has contributed to shape present ecosystems." FOR EXAMPLE:</p> <p>- Dalle et al. 2005: (p2) "This indigenous knowledge for sustainable resource management is acquired through observations over centuries and practical exercises in their ecosystem. The IEK of Borana pastoralists is reflected in their knowledge of traditional range and water management strategies, rangeland condition, plant species and their uses, animals and climate, among others."</p>	
99	German IPBES Coordination office and national scientists	14	481	14	486	This paragraph does not really fit in the whole context; e.g. some challenges (food prices, financial crises et.) do not only affect pastoralists.	Yes, but they <i>do affect pastoralists</i> , which is the only point here
100	Matthew McCartney (MM)	14	487	14	492	This discussion of the forests and woodlands indicates the need for a much broader discussion of biomes/ecosystems throughout Africa. This is an important part of the scene setting that appears to be missing. The distinction between sub-Saharan Africa and North Africa also needs to be clarified at some point early in the report	Chapter 1 should also define the sub-regions and Units of Analysis (or "biomes" but do not use the term) that will be used in the other chapters.

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101	German IPBES Coordination office and national scientists (IPBES)	14	497	14	505	Paragraph is not clear, seems contradictory (primary forest activities vs. diversified pool) and lacks scientific neutrality.	Reviewer did not understand the difference between primary forest activities (logging, fuelwood) and the very diverse pool of NTFPs. We have tried to address it through some rephrasing. We also made the statements more "neutral"
102	German IPBES Coordination office and national scientists (IPBES)	15	519	15	523	Here, the text is rather prescriptive and lacks scientific evidence	Corrected

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
103	Josiane Seghieri (JS)	15	519	15	523	Agroforestry systems should be mentioned as such : a land use management system in which trees or shrubs are grown around or among crops or pastureland. Agroforestry parklands, made of multipurpose trees scattered in food crop fields, are secular agricultural systems the most widespread in sub-Saharan Africa (Boffa 2000, Garrity et al. 2010). Trees and shrubs being neither planted nor cultivated, they are semi-domestic woody species whose stand conditions and states show a very uneven pattern of which variation factors are still very little known. A remarkable example is the commonly known as the shea tree (karité in French), <i>Vitellaria paradoxa</i> C.F. Gaertn. It is probably the most economically and culturally important tree species in all the Sudanian belt (Boffa 2015). This region is the sole ecoegion supplying the increasing international market with shea products (chocolate and cosmetic industries) although its proarects is still traditional and its still rowth on a small scale.	Fully included now
104	Abdelfattah Badr (AB)	15	524			Consider revising the subtitle - Population, poverty and health	We prefer to keep it as it is
105	Rainer M Krug (RMK)	15	524	15	524	Make it clear that you are talking about human population	Added
106	Intergovernmental Technical Panel on Soils (ITPS)	15	524	25	955	Section 1.2.2 is too long and need subsections	Chimère will review structure of section 1.2.2 (maybe not relevant anymore?)

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
107	Andriamahazo Michelle (AM)	15	533	15	534	It is mentioned that as of mid-2015, Africa's population totalled 1.2 billion and represented 16% of world population. (United Nations, 2015a)	What is the point? Do this relate to the comment on line 65 above?
108	Rainer M Krug (RMK)	15	547	15	552	I am missing a paragraph of the problems arising from the projected population growth: ranging from increased land requirements and resulting transformation, energy requirements, water requirements, food requirements, resulting BES loss, potential for increasing poverty and last but not least (if the larger population does not fall into poverty) higher carbon footprint caused by increasing energy consumption and wealth?	<p>we added three references as follows : Bernstein, S. (2005). The Changing Discourse on Population and Development: Toward a New Political Demography. <i>Studies in Family Planning</i>, 36(2), 127–132. http://doi.org/10.1111/j.1728-4465.2005.00050.x</p> <p>Brashares, J. S., Arcese, P., & Sam, M. K. (2001). Human demography and reserve size predict wildlife extinction in West Africa. <i>Proceedings. Biological Sciences / The Royal Society</i>, 268(1484), 2473–2478. http://doi.org/10.1098/rspb.2001.1815</p> <p>Cincotta, R. P., Wisnewski, J., & Engelman, R. (2000). Human population in the biodiversity hotspots. <i>Nature</i>, 404(6781), 990–992. http://doi.org/10.1038/35010105</p>

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
							Williams, J. N. (2012). Humans and biodiversity: population and demographic trends in the hotspots. <i>Population and Environment</i> , 34(4), 510–523. http://doi.org/10.1007/s11111-012-0175-3
109	Lochran Traill (LT)	15	547	15		This is an ignorant statement "human population growth is the reason biodiversity is in decline".	Yes, the steer to provide a positive outlook has been far too strong - I agree. Positive statements need to be tempered with recognition of the very real challenges in many areas.
110	Andriamahazo Michelle (AM)	15	549	15	551	There should be definition of 'demographic dividend' with much more favourable ratios between working and non-working aged people compared to some other parts of the world	Reference added. Note that the important point is the opportunity for people of working age compared to dependents (Canning et al discuss this at length and also some of the challenges to realising the potential benefits)

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
111	German IPBES Coordination office and national scientists (IPBES)	16	553	15	563	This section seem policy prescriptive and does not contain scientific results.	We added some more evidence for this view but shouldn't the requested scientific results come from the assessment that is being introduced? Furhter, the two comments here seem to be asking for different things too. Is the steer to provide less about policy or more about policy (second comment is about recommendations)?
112	Majda Amina Aziza (MAA)	16	560	16	563	Is it possible to propose some recommendations related to developed countries to face these challenges?	
113	Majda Amina Aziza (MAA)	16	572	16	575	Is it possible to add some examples of sub-regions or countries not currently considered to be water scarce?	We do not see what is the added value of adding regions or countries?
114	Matthew McCartney (MM)	16	572	16	573	The existence of extreme water scarcity within water stressed countries was not "shown earlier" as claimed. This important point was not discussed	Addressed
115	Gianluca Ragusa (GR)	16	578	16	578	"Highly populated agricultural productive zones can, however..."	Deleted
116	Andriamahazo Michelle (AM)	16	585	16	587	Reference to be completed (UNEP, ?????)	Reference removed
117	Abdelfattah Badr (AB)	16	587			Add year of publication for UNEP	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
118	Matthew McCartney (MM)	16	588	16	590	It is not clear what the Zambian example of level of human impact changing from 3.7% to 99.0% is	We check the reference and modify the sentence to be clearer.
119	Lochran Traill (LT)	16	589	16		How is 'human impact' estimated here?	Encroachment = land cultivated or cleared. Human impact = that area + 2km buffer.
120	Majda Amina Aziza (MAA)	16	590	16	594	Is it possible to add some examples of origin and source of Invasive species?	Why we add these examples here? There is a section with detailed information about this topic.
121	German IPBES Coordination office and national scientists (IPBES)	16	590	16	594	A clear presentation of the causality and relevant example/verification is needed.	We check the reference and modify the sentence to be clearer.
122	Majda Amina Aziza (MAA)	17	601	17	601	Fig 1.4 : what about water scarcity in countries not included in Sub-Saharan Africa?	Can figure 1.4 be replaced with a figure showing water scarcity in all of Africa?
123	Abdelfattah Badr (AB)	17	601			Figure 1.4: quality requires improvement, the data on North Africa may be added to the figure	
124	Rainer M Krug (RMK)	17	608	17	608	Mention the existing expected megacities so that they can be put into context to e.g. Figure 1.4	We afraid if we add text about megacities, this will lead to long text. We concerned about adding more text. Non-essential comment to address?

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
125	Matthew McCartney (MM)	17	608	17	610	It would be useful to name the megacities and those with population between 5 and 10 million	
126	Matthew McCartney (MM)	17	624	17	625	It would be useful to know where the urban to rural migration is happening and what is driving this	Clarify and add precisions. Give reference where (ref) is indicated in line 624
127	Abdelfattah Badr (AB)	18	652			Figure 1.5 quality requires improvement, the scale 1 to 100 is too short to indicate variation	Done
128	Lochran Traill (LT)	18	Fig. 1.5	18		Fig. 1.5 very difficult to infer - and not at an adequate resolution.	
129	German IPBES Coordination office and national scientists (IPBES)	19	694	19	697	The information needs to be aligned with statement on p. 9, L: 225-226.	It seems to me that both statements are similar. Page 19 gives more details.
130	Lochran Traill (LT)	19	702	19		What is 'data ref'?	It is removed as it seems a typing mistake
131	Abdelfattah Badr (AB)	19	721			Who is the author(s) and the publisher of the Human Development Report, 2014	Reference changed to UNDP 2015
132	Samia Sediri (SS)	20	723	20		Figure 1.6: There should be a legend of the map	We agree. We will look for high quality figure to add it to this section
133	Abdelfattah Badr (AB)	20	724			Figure 1.6 quality requires improvement and the colours on the map requires explanation	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
134	Vincent-Akpu Ijeoma (VAI)	20	724	20	725	There is no legend to describe the colours	
135	German IPBES Coordination office and national scientists (IPBES)	20	727	20	728	This sentence is not clear.	Done - meaning lost at editing stage
136	Matthew McCartney (MM)	20	733	20	734	Should be consistent in use of terminology. "Nature's benefits" should be changed to "ecosystem services"	We keep it as it is to avoid changing what is mentioned in the related reference (Fisher et al., 2013).
137	German IPBES Coordination office and national scientists (IPBES)	20	742	22	853	The connection between ES and poverty, health etc. is not well presented here.	Agreed, and we rephrased this part
138	Matthew McCartney (MM)	21	765	21	765	Replace "entangle" with "disentangle"	OK, replaced
139	Rainer M Krug (RMK)	21	784	21	785	illogical usage of Continent and Africa	Sentence checked and adjusted to be more clearer
140	Matthew McCartney (MM)	21	791	22	812	The section on human health needs: i) some brief discussion of the links between the environment and vector borne diseases. It is important to note that many diseases can be perceived as "diservices" of the environment.; ii) something on HIV/AIDS pandemic and what this means for the continent and population	Agreed - will look at for next iteration

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
141	Lochran Traill (LT)	21	797	21		Reference?	added reference: Whitmee, S., Haines, A., Beyrer, C., Boltz, F., Capon, A. G., de Souza Dias, B. F., ... Yach, D. (2015). Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health. The Lancet, 386(10007), 1973-2028. http://doi.org/10.1016/S0140-6736(15)60901-1
142	Gianluca Ragusa (GR)	21	801	21	803	There have also been improvements in responses	OK, done
143	Vincent-Akpu Ijeoma (VAI)	22	829	22	829	Put "agricultural practice" instead agriculturalagriculture	OK, replaced
144	Gianluca Ragusa (GR)	22	838	22	840	massive wildlife declines on land are also being witnessed, Not to be cited. The data for Africa are different, lack of data collection, great losses post-capture, fish supply in several regions coming mainly from inland fishery (eg. 86% in IGAD region) and now from aquaculture.	We do not understand what is needed from this comments and so we keep the original text as it is
145	Vincent-Akpu Ijeoma (VAI)	22	850	24	884	Repeated sentence; sentences on line 850-853 should be discuss with sentences on 882-884	Deleted
146	Abdelfattah Badr (AB)	22	853			Add the missing reference	Deleted

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
147	German IPBES Coordination office and national scientists (IPBES)	24	857	24	894	The content relates poorly to scientific findings.	These paragraphs deleted
148	Vincent-Akpu Ijeoma (VAI)	24	876	24	879	Flooding and drought are not caused by political and social issues. There is no link in the sentences.	Ok, we deleted sentence
149	Vincent-Akpu Ijeoma (VAI)	25	903	25	904	It is a one sentence paragraph	Ok, we deleted sentence
150	German IPBES Coordination office and national scientists (IPBES)	25	905	25	905	"Human encroachment" has a negative connotation.	OK, replaced
151	Andriamahazo Michelle (AM)	25	908	25	941	Box 1.3 to be up dated because Madagascar has ratified the Nagoya Protocol on ABS in 2014 and both ITPGRFA and NP/ABS have each draft law for the implementation of these 02 international instruments in Madagascar. Recently in month of June, regulations have been drafted as interim measures.	OK, updates are inserted and old information deleted
152	German IPBES Coordination office and national scientists (IPBES)	25	919	25	922	Here, an option for further research is given.	Ok, done

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
153	Nakashima - ILK expert (N)	25	941	25	950	<p><i>"sustainable management of traditional medicinal plant resources is important, not only due to their value as a potential source of new drugs, but due to the reliance on traditional medicinal plants for the health. A significant proportion of people in Africa consult traditional medical practitioners (TMPs) for healthcare (ref) (...)"</i>.</p> <p>--> ADD references and examples to strengthen the proposition AND precise that use of traditional medicinal plants relies on ILK developed and transmitted over generations. Also ADD that trade in medicinal herbs can be a major economic activity supporting local communities.</p> <p>FOR EXAMPLE:</p>	OK, we added sentences to cover the comments required. Two examples from Egypt and Mali were added and two new references were added as well.

					<p>- Halmy 2016 (Egypt): the paper reports that 72% of the species studied were used for medicinal purposes in Egypt's desert systems; collecting medicinal plants is used as a source of income as well as for personal use; "Native plants used for medicinal purposes in the desert provide a source of income for the local communities. Collection of medicinal herbs and the trade in medicinal herbs have been considered one of the major economic activities supporting these communities."; "Folk medicine in the desert communities depends mainly on the use of native plants in treating most of the diseases and ailments. The local inhabitants maintained that they use plants in medical treatments because they think that depending on plants for medication is safer than prescribed medications. The other reason is that therapy using medicinal plants is significantly cheaper than prescribed medications. Moreover, they can get the medicinal plants very easily either from herbalist shops available in their vicinity or they can get them from the natural habitats surrounding them". (Marwa Waseem A. Halmy (2016). <i>Traditional knowledge associated with desert ecosystems in Egypt</i> in Marie Roué, Alfred Oteng-Yeboah, Peris Kariuki and Yao Adou (eds.), <i>Indigenous and local knowledge of biodiversity and ecosystems services in Africa: Contributions to an IPBES regional assessment</i>. UNESCO: Paris.)</p>	
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Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<ul style="list-style-type: none"> - Blanco & Carrière 2016 (Morocco): In local communities of semi-nomadic herders, plants are used notably for traditional medicines. - Bobo et al. 2014 (Cameroon): In communities in Cameroon living around forest areas, wildlife is used for traditional medicines. - Chibememe et al. 2014 (Zimbabwe) - Dalle et al. 2005 (Ethiopia): Borana pastoralists from Ethiopia use plants for their medicinal value, among others. - Dembélé et al. 2015 (Mali): (p. 1) "In the Sahelian countries, the majority of people live in rural areas and depend mainly on natural resources and income generation. Wild plants play important social, cultural, aesthetic and ethical roles for rural communities, as local people depend on them for food, traditional medicine, construction, handicrafts, cosmetics, forage and revenues". - Dixon 2008: (Ethiopia): In Ethiopia, people living around the wetlands collect medicinal plants - Gebauer et al. 2016: in the arid and semi-arid areas of sub-Saharan Africa, the baobab provides, on top of foodstuff and other material, natural medicine. 	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>- Golden 2014 (Madagascar): Local people in Madagascar harvest wildlife for ethnobotanical and ethnozoological medicines</p> <p>- Paré et al. 2010 (Burkina Faso): In a dry forest of Burkina Faso, 90% of 82 identified species were used for medicinal purposes</p> <p>- Pourchez 2014 (Reunion, Mauritius, Rodrigues islands): the author describes the knowledge held by women related to health prevention, birth issues, and preparation of remedies or herbal teas. The author describes how the knowledge is passed on and share among women. She shows that this type of knowledge involves a knowledge of local plants and their properties, which makes of women knowledgeable interlocutors regarding this topic: (p74) "At the Reunion, women frequently know about thirty plants of common use, with uses as much preventive than curative. Even if the way of using them is relatively less known by the younger ones than by the elders, the knowledge of these plants, of their effects and the possible preparations represent in most families a common base of medicinal folk culture."</p>	
154	Lochran Traill (LT)	25	944	25		Reference?	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
155	Matthew McCartney (MM)	26	976	31	1151	I am surprised that there is nothing on traditional (pre-colonial) management of natural resources. These are important in some places (e.g. Tanzania) where the complex nature of livelihoods and their relationship to linked systems of natural resources make it difficult to identify and define authority structures that can take overall responsibility for resource use and management. Authority is not simply vested in government structures (which are themselves fragmented) but, in common with other African countries, dual legal systems incorporating customary and modern arrangements exercise jurisdiction over natural resource use. Given its acknowledged importance there also needs to be some discussion on water management and how this has changed in recent years.	We add small section about pre-colonial management of natural resources in Africa and two references were added too.
156	Abdelfattah Badr (AB)	27	990			Figure 1.7 is not coherent and its legend is not clear; it may be split into two figures or simplified	We agree. We will look for high quality figure to add it to this section
157	Andriamahazo Michelle (AM)	27	1007	27	1024	Figure 1.8: ESG research & analysis framework, source to be completed	We agree. We will look for high quality figure to add it to this section
158	Abdelfattah Badr (AB)	27	1023			Figure 1.8 legend is not clear, the source is not mentioned	We agree. We will look for high quality figure to add it to this section

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
159	Lochran Traill (LT)	27	Fig. 1.7	27		Fig. 1.7 very difficult to infer - and poor resolution.	We agree. We will look for high quality figure to add it to this section
160	German IPBES Coordination office and national scientists (IPBES)	27				The link between Figures 1.7. and 1.8. and the text is not clear, argumentation should be given in the text.	OK, done
161	German IPBES Coordination office and national scientists (IPBES)	28	1025	28	1051	Historic background needs clearer links to the assessment.	It is not clear to CLAs what is the comment here and clarification is needed.
162	Gianluca Ragusa (GR)	28	1041	28	1042	and several other countries all have now	Yes, but we give some examples and there is no a need to mentioned all countries.
163	William Olupot (WO)	29	1070	29	170	complete sentence in line 6 that states "This experience has..."	Ok, this was not a beginning of sentence. It was typing mistake.
164	Andriamahazo Michelle (AM)	29	1070	29	1071	Box 1.4: Community Based Natural Resource Management (CBNRM). 'GELOSE' should be more described	we are not agree because we lead to add more text and we have limitations related to the amount of text in each chapter

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
165	Majda Amina Aziza (MAA)	29	1079	30	1113	Fig 1.10 : protected areas in north Africa are missing.	The reference used was concentrated on sub-Saharan African countries and north Africa region with not included in the study. This could be gap in knowledge as there is now analysis for PAs and their governance in whole Africa.
166	Nakashima - ILK expert (N)	29	box 1.4	29	box 1.4	Box on Community Based Natural Resource Management. POSSIBLE EXAMPLE TO ADD: - Phutego & Chanda 2004: example of protected area in Botswana where Community based natural resource management was implemented, relying on participatory methods and local people's knowledge on natural resources. They recall how, after being deprived from their rights on the land, local inhabitants are being recognized as holders of a valuable knowledge that can be useful in the management of natural resources. They present examples of how this knowledge has been integrated in the management plans for the area.	we are not agree because we lead to add more text and we have limitations related to the amount of text in each chapter

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
167	Josiane Seghieri (JS)	29	Box 1.4: 5° line of the text	29	Box 1.4: 5° line of the text	« This experience has. » should be deleted	OK, deleted
168	German IPBES Coordination office and national scientists (IPBES)	30	1088			The quality of Figure 1.9 is too low.	We agree. We will look for high quality figure to add it to this section
169	Abdelfattah Badr (AB)	30	1088			Figure 1.9 and its legend need improvement and illustration should include the whole of Africa	The reference used was concentrated on sub-Saharan African countries and north Africa region with not included in the study. This could be gap in knowledge as there is now analysis for PAs and their governance in whole Africa.
170	Abdelfattah Badr (AB)	30	1103			A reference is missing	OK done
171	Abdelfattah Badr (AB)	30	1110			Figure 1.10 legend is not clear, the figure quality may be improved and illustration should include the whole of Africa	The same as our observation for comments on 166 & 170
172	Lochran Traill (LT)	30	Fig. 1.9	30		Fig 1.9 at poor resolution and the reference is incorrectly cited in the text.	The same as our observation for comments on 166 & 171
173	Abdelfattah Badr (AB)	31	1133			Write as Milder, et al, 2014; Scherr, et al. 2013).	OK, done

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
174	Vincent-Akpu Ijeoma (VAI)	33	1225	33	1225	Spelling of continent	Ok, done
175	Josiane Seghieri (JS)	33	1225	33	1225	Replace "the continent" by "the continent"	Ok, done
176	German IPBES Coordination office and national scientists (IPBES)	34	1267	34	1324	The part contains policy issues rather than scientific results.	Just the language to adjust. Already evidence-based
177	Matthew McCartney (MM)	35	1325	37	1421	It should be noted somewhere that BES can be particularly important in conflict areas, since typically conflict disrupts normal economic activities and BES often contribute significantly to coping strategies. It is also important to acknowledge that not all conflict has reduced pressure on certain biodiversity rich areas. For example the lack of construction of the Jongeli canal in the Sudd is at least in part a consequence of the conflict in South Sudan.	We disagree.
178	German IPBES Coordination office and national scientists (IPBES)	35	1326	35	1337	Does this simplistic chain of argumentation address the problem adequately?	Comment is just a judgement with no argumentation. Isolate one theory/hypothesis from the overall presentation of the literature. very unhelpful.
179	Josiane Seghieri (JS)	35	1346	35	1346	Replace "risk driven by" with "risk driven by"	OK, done
180	Josiane Seghieri (JS)	36	1362	36	1362	Replace in Table by instable	OK, done

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
181	Josiane Seghieri (JS)	36	1370	36	1370	the acronym RUF (Revolutionary United Front ?) should be explicated	OK, done
182	German IPBES Coordination office and national scientists (IPBES)	36	1393	38	1488	The linguistic style need to be revised; some expressions are unclear e.g. "perverse".	OK, done
183	Abdelfattah Badr (AB)	36	1371-1392			ISS 2012 = Incomplete reference information in the references list	OK, done
184	Josiane Seghieri (JS)	37	1424	37	1424	the acronym CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) should be explicated	OK, done
185	Abdelfattah Badr (AB)	37	1444			A reference is missing, the link is not found	OK, done
186	Josiane Seghieri (JS)	38	1450	38	1450	"but with the potential is clear" should be replaced by "but the potential is clear"	OK, done
187	Intergovernmental Technical Panel on Soils (ITPS)	38	1464	38	1464	It seems as something is missing in this sentence	OK, done
188	Matthew McCartney (MM)	38	1470	38	1470	The term "West-South opposition" needs to be explained	Ok, we replaced with north-south
189	Rainer M Krug (RMK)	38	1481	38	1481	Not only African countries - most countries with land-borders do not have the capacity to manage these.	Maybe but the focus is on Africa and we lack time and data to address the global status of trade-related disease and pest

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
190	Nakashima - ILK expert (N)	39	1490	39		<p>section on Habitats degradation and restoration:</p> <p>ADD nuance about the concept of degradation: Land degradation is a western scientific conception, based on the idea that ecosystems tend to reach a stable stage that can be disturbed by local use of resources. But the rise of the disequilibrium conception in ecology, combined with works of archeologists and anthropologists who described the practices of local populations related to the environment, made it possible to consider these practices as parts of the natural functioning of ecosystems, and factors that contributed to their present state. Regarding deforestation, analyses of forest history in Africa, notably by Fairhead and Leach (1995, 1997; Leach & Fairhead 2000a,b), have shown that the idea of an original pristine forest degraded by local inhabitants was born from the narratives of the Western conception of a wilderness, but did not in fact correspond to reality. They show that the process of degradation currently observable has in fact been triggered by "institutional breakdown" (Fairhead and Leach 1995). If some ecosystems are indeed changing towards a different type, the conception of "degraded", and the causes of perceived degradation, should be</p>	OK, partially done because of the text limitations

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>considered with caution. Moreover, what is seen as degraded for one can be seen differently by another. However, in some cases, the perceived state of degradation is detrimental both from an ecological point of view (biodiversity etc.) and from a local perspective, and is therefore legitimate to address.</p> <p>FOR EXAMPLE:- Andersen et al. 2014. (Egypt and Sudan): the authors argue that, unlike the usual conception of scientists, considering that resource use of nomadic populations in arid areas like the Red Sea Hills led to land degradation, the practices developed over many generations by local dwellers contributed to shaping the landscape as it is. They describe the different practices local inhabitants use to tend the trees, and discuss their potential benefits for the longevity of the trees and the preservation of the landscape. (p36) "During the droughts of the 70s and 80s nomads and pastoralists in African drylands were accused of overexploiting and misusing natural resources in a fragile environment (Lamprey, 1983). Their "inappropriate" land use allegedly caused desertification (Davis, 2005; Herrmann and Hutchinson 2005). Subsequently a better understanding of</p>	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>human influence and dryland ecology has emerged (Homewood and Randall, 2008; Niamir-FULLER, 1999; Vetter, 2005; Westoby et al., 1989). Drylands have been acknowledged to be cultural landscapes of human-environment systems, both concepts recognizing the importance of human influence and the long-term accumulated ecological knowledge inherent in land-use systems (Andersen 2012; Krzywinski and Pierce, 2001; Reynolds et al., 2007)." (p42): "The popular notion that overgrazing is an inherent problem for dryland pastoralism has been challenged under the disequilibrium paradigm (Homewood and Randall, 2008; Niamir-Fuller, 1999). Nevertheless, overgrazing may still be a problem for the establishment of recruits when nomadic movement is restricted or ceases (Wiegand et al., 2004)."</p> <p>- Bollig & Schulte 1999 (Kenya and Namibia): the authors argue that, contrarily to the widespread view stating that african grasslands ecosystems are being degraded because of overgrazing by domestic herds, the herders and pastoralism have contributed to shaping these ecosystems.</p> <p>- Thomas & Twyman 2004 (Namibia, Botswana, South Africa) (p215): in a study of</p>	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>scientific and local understandings of vegetation dynamics in the Kalahari: "We urge caution in the application of the term degradation, an a more widespread recognition of the multifaceted dimensions, including benefits, of change within scientifically recognized variability of non-equilibrium rangelands". (p229): "The simple interpretation of degradation that 'scientific' views have often attached to the occurrence of bush encroachment and grass species changes in the Kalahari can belie the complex interpretations and utilities that land users can attach to dimensions of these changes, as our case sturies demonstrate". (p229) "The view of dryland environments as variable and diverse means that conventional notions of 'overgrazing' and 'carrying capacity' are problematic as there is no 'normal' baseline ecological state from which to measure these concepts, a view clearly shared by land users involved in this research. Descriptions of areas on the verge of 'collapse' are the antithesis of a non-equilibrium perspective, which sees a wide range of variation as integral to the functioning of dryland ecosystems (Behnke et al., 1993). These new 'scientific' approaches therefore challenge conventional notions of rangeland change that have often</p>	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>underpinned land degradation and desertification policy."</p> <p>- Hammi et al. 2010 (Morocco): (p1863) "Overlapping with the agdal [type of local land tenure system] management are the state forestry policies in Morocco, which were conceived during the French protectorate period (1912–1956). They were essentially based on “declensionist” narratives of the decline of a previously fertile landscape by centuries of deforestation and overgrazing by Arab nomads and later by the Berber indigenous (Davis, 2005). However, recent paleoecological studies have questioned the rates of deforestation in Africa (Fairhead and Leach, 1996). The strategy adopted afterwards by the forest department to reconstitute the assumed degraded lands consisted of restricting access to “forest lands”—including all forested areas and rangelands outside irrigated farmlands."</p> <p>- Little 1996 (Kenya and Tanzania): (p37) "East Africa possesses a rich historical and archaeological record documenting the significant influences of patoral land use on savanna habitat (Gifford-Gonzalez, 1994; Robertshaw, 1990; Sutton, 1993). These data cover a range of sites in Kenya and Tanzania</p>	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>and a historical depth dating to at least 3,000 BP (Galaty, 1993; Robertshaw, 1989). They strongly suggest that the savanna eco-systems of East Africa, which support the richest variety and density of large mammals in the world, have been strongly shaped by human activity and are not the 'wilderness' areas so often considered by early explorers and naturalists (see Thompson, 1885)."</p> <p>- SEE ALSO Fairhead & Scoones 2005: Local knowledge and the social shaping of soil investments: critical perspectives on the assessment of soil degradation in Africa</p>	
191	Vincent-Akpu Ijeoma (VAI)	39	1496	39	1498	Overfishing is not associated with land use changes	OK, done
192	Vincent-Akpu Ijeoma (VAI)	39	1497	39	1498	Spelling of potable	OK, done
193	Josiane Seghieri (JS)	39	1497	39	1497	Replace poTable with potable	OK, done
194	Intergovernmental Technical Panel on Soils (ITPS)	39	1497	39	1497	Typo error on Potable	OK, done
195	Majda Amina Aziza (MAA)	39	1498	39	1502	Desertification is a crucial problem that threatens biodiversity, in some areas in Africa, may be this point should be developed.	OK, done

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
196	Intergovernmental Technical Panel on Soils (ITPS)	39	1511	39	1513	Please, rephrase this sentence as suggested	It is expected that the interrelation between land degradation and climate change may lead to an expansion of degraded land in the future
197	German IPBES Coordination office and national scientists (IPBES)	39	1513	39	1514	Is the name "land degradation strategy" correct?	No... A strategy against land deg.
198	Vincent-Akpu Ijeoma (VAI)	39	1513	39	1517	They could elaborate on the degradation strategy	
199	Intergovernmental Technical Panel on Soils (ITPS)	39	1514	39	1514	May be also rephrase this as suggested	Ok, done
200	Safaa A. Ghoneim (SAG)	39	1518	42	1566	several researches have recorded the Impacts of Climate change on Africa's northern coast, including flooding the coastal cities and Deltas (See El-Raye, 20??), eliminating coastal lagoons and wetlands (see Ghoneim, 2003)	El-Raye reference could not be found. Sentence and other references added
201	Lochran Traill (LT)	39	1522	39	1522	Insert reference	Reference to AMCEN (2011) already given
202	Majda Amina Aziza (MAA)	39	1529	39	1531	Concerning challenges affecting ecosystems on Africa based upon the IPCC report, what about desertification? It is also an impact of climate change and has an impact on biodiversity,	Phrase and references added

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
203	Josiane Seghieri (JS)	39	1529	39	1529	Replace "Major challenges" with "Major challenges" (space after the full stop)	Corrected
204	Nakashima - ILK expert (N)	39	1549	39	1551	<p>section on climate change: MENTION that indigenous and local communities, through their livelihoods highly depending on environmental conditions, have developed detailed knowledge of climate phenomena and influences, through repeated observations transmitted over generations. This allowed them to develop adaptive capacities to deal with climate variations. FOR EXAMPLE:</p>	<p>The suggested sentence and the references have been integrated. The correct references are Gemedo-Dalle et al. (2006) and Nielsen & Reenberg (2010)</p>

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>- Dalle et al. 2005 (p.2): "This indigenous knowledge for sustainable resource management is acquired through observations over centuries and practical exercises in their ecosystem. The IEK (Indigenous Environmental Knowledge) of Borana pastoralists is reflected in their knowledge of traditional range and water management strategies, rangeland condition, plant species and their uses, animals and climate, among others".</p> <p>- Nielsen & Reeberg 2010. The authors describe the adaptation strategies of communities in the Sahel, which are abandoning farming because of low yields due to increasing droughts, and diversifying their sources of incomes. The authors argue that such communities have already passed the adaptation to climate change, of which villagers have clearly identified the effects since several decades</p>	
205	Majda Amina Aziza (MAA)	40	1534	40	1534	Is the impact of climate change, illustrated in the figure 1.11, dealing with the present situation, or a projection in the future?	As indicated in the legends, fig. 1.11 is the current situation and 1.12 give the future trends

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
206	Abdelfattah Badr (AB)	40	1534			Figure 1.11 need quality and content improvement to include Impacts of climate change in North Africa, the legend in not self explanatory and the source: CDKN, 2014 is not found.	Figures will be redrawn for SOD. Legend has been modified. CDKN added to the reference list
207	Intergovernmental Technical Panel on Soils (ITPS)	40	1540		1566	Section 1.3.2. (Climate change). The challenge of water in Africa is not only related to water provision but also to efficient use of available water. There are some areas in Africa with excess of water that is not efficiently use. This aspect and many other related issues have not been well elaborated here as related to challenges identified as food-energy-water-livelihoods nexus.	Requires extended bibliographic search. Will be addressed in SOD
208	German IPBES Coordination office and national scientists (IPBES)	40		41		Figures 1.11 and 1.12 are not comprehensible.	Figures will be redrawn in SOD
209	Abdelfattah Badr (AB)	41	1537			Figure 1.12 requires improvements of quality and contents, based on one sources source: CDKN, 2014].	Figures will be redrawn for SOD

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
210	Abdelfattah Badr (AB)	41	1538			The part of the figure presented as a table may be presented as a separate table.; conflicting expectations of trends of climate change is confusing ; dependence on a single source CDKN 2014 for most data may be reconsidered	The "table" is the legend for symbols of the figure and cannot be given separately. Figures 1.11 and 1.12 are from CDKN 2014 and is given here "as is". It summarizes the views of the IPCC 5th report. The legends have been changed to indicate that.
211	Safaa A. Ghoneim (SAG)	42	1567			Before this point I recommend adding a new one about: African Wetlands, and particularly the coastal wetlands, as they are amongst the most critical ecosystems to be considered because of the ecosystem services they are providing (including flood control...) and the challenges they are facing (as they could be considered the first defence line for sea level rise..... see (Ghoneim, 2014)	Text changed and figure and reference added
212	Josiane Seghieri (JS)	42	1567	44	1639	There should be more examples among plants and animals linked to losses in ES, not focused on health and diseases	Text changed and figure and reference added

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
213	Matthew McCartney (MM)	42	1567	44	1655	Beyond biological control it would be useful to mention other approaches to managing invasives, particularly in instances where it is done to restore BES. For example, mechanical removal of water hyacinth from lakes and reservoirs and the Working For Water Program in South Africa which is intended to protect the country's water resources from non-indigenous trees.	Text changed and figure and reference added
214	German IPBES Coordination office and national scientists (IPBES)	42	1567	43	1655	This paragraph lacks clear evidence and contains policy issues.	Text changed and figure and reference added

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
215	Rainer M Krug (RMK)	42	1567	44	1655	<p>This section could be expanded as invasive species (plant and animals, and if pathogens are included even more) impact on all roles provided by ecosystems to humans: food security, climatic buffer (flooding can be increased by invasive species damaging natural river functioning, erosion), water (evaporation through invasive trees (Working For Water in SA), food safety (erosion), safety in urban environments, (areas invaded by thick stands of invasive trees (acacias) are in e.g. Cape Town a perfect hiding place for criminals - restoration increases safety), economic stability; On the other hand, invasive trees are used for fire wood, carpentry. I would suggest to look into the Working for Water program in South Africa (see https://www.environment.gov.za/projectsprogrammes/wfw as a starting point) and the Working on Fire (http://workingonfire.org/) which combine alien management / clearing with social alleviation / job creation.</p>	Text changed and figure and reference added

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
216	Josiane Seghieri (JS)	43	1588	43	1588	Replace habiTable by habitable	Corrected
217	Vincent-Akpu Ijeoma (VAI)	43	1588	43	1589	Spelling of habitable due	Corrected
218	Lochran Traill (LT)	43	1588	43		habiTable ddue'?	Corrected
219	Abdelfattah Badr (AB)	43	1593			A reference is missing	Reference added
220	Lochran Traill (LT)	43	1593	43		Reference?	Reference added
221	German IPBES Coordination office and national scientists (IPBES)	43	1594	43	1604	Foot and mouth outbreak in UK and Ebola seem awkward examples.	Examples changed
222	Rainer M Krug (RMK)	43	1596	43	1604	In the widest sense, it is possible to classify these (particularly F&M diseases in UK) as invasives, but I would advise to look at other examples (Water hyacinth, invasive trees (hakea sericea) in South Africa, eradication costs for rodents on islands, ...). Invasive tree eradication is South Africa (Working for Water)).	Examples changed

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
223	Rainer M Krug (RMK)	43	1612	43	1621	<p>I am missing the mentioning of approaches which can help address this problem. One example is the "CIB DST-NRF Centre of Excellence for Invasion Biology" (http://academic.sun.ac.za/cib/) : From their website: The C-I-B is an inter-institutional Centre of Excellence established in 2004 within the DST-NRF Centres of Excellence Programme. Its members undertake research on the biodiversity consequences of biological invasions, largely through post-graduate student training. The principal aims of the Centre's work are to reduce the rates and impacts of biological invasions by furthering scientific understanding and predictive capability, and by developing research capacity.</p> <p>The C-I-B has its physical home at the University of Stellenbosch, but comprises a network of senior researchers and their associated postdoctoral associates and graduate students throughout South Africa.</p>	Text added
224	German IPBES Coordination office and national scientists (IPBES)	44	1634	44	1636	The sentence is unclear and may be separated in two.	Cant figure out which sentence is concerned.
225	Josiane Seghieri (JS)	44	1635	44	1636	It should be explicit in which way food security is affected	Sentence and reference added

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
226	Matthew McCartney (MM)	44	1664	44	1677	It is rather surprising that there is almost nothing in this chapter on the SDGs (just brief mention in on page 13 and in Box 1.8). This might be one place to mention them since they represent a global commitment to move towards a more sustainable world. What are the implications of the SDGs for Africa. How can the aspirations that they represent be realised and the wide range of objectives be appropriately balanced?	A phrase and a reference were added here
227	Vincent-Akpu ljeoma (VAI)	44	1668	44	1670	The word inevitable	Corrected
228	Josiane Seghieri (JS)	44	1669	44	1669	Replace inevitable by inevitable	Corrected
229	Majda Amina Aziza (MAA)	45	1680	45	1683	May be emissions and pollution reduction can be placed in a special context for Africa, since it is not considered as a polluting area yet,	I (LT) do not agree. Africa is considered as polluted in many aspects. Nothing changed
230	Vincent-Akpu ljeoma (VAI)	45	1686	45	1686	Joining two words approach requires; It is a one sentence paragraph	The 2 words are separated and the phrase joined to the previous paragraph
231	Josiane Seghieri (JS)	45	1686	45	1688	« an approach [space] requires », and a full stop is missing at the end of the sentence	The 2 words are separated and the phrase joined to the previous paragraph

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
232	German IPBES Coordination office and national scientists (IPBES)	45	1686	45	1688	This passage is unclear.	The joining of the sentence to the previous paragraph, should make it more clear\$
233	German IPBES Coordination office and national scientists (IPBES)	45	1694	45	1695	The passage on the WAVES initiative needs more background information.	AIM 2013-2050 already mentioned. Nothing changed
234	Gianluca Ragusa (GR)	45	1702	45	1702	Integrated Maritime Strategy and more recently African fisheries and aquaculture policy	Fisheries information added.
235	German IPBES Coordination office and national scientists (IPBES)	45	1718	46	1728	Here were policy recommendations given.	I dont understand what is expected here...
236	Nakashima - ILK expert (N)	46	1729	46	1765	ADD CBD article 8j in section 1.3.5. Indigenous and Local Knowledge "Each contracting Party shall, as far as possible and as appropriate:	OK, added

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						Subject to national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge innovations and practices." (https://www.cbd.int/traditional/)	
237	Nakashima - ILK expert (N)	46	1729	46	1765	ADD CBD article 8j in section 1.3.5. Indigenous and Local Knowledge "Each contracting Party shall, as far as possible and as appropriate:	OK, added

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						Subject to national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge innovations and practices." (https://www.cbd.int/traditional/)	
238	Nakashima - ILK expert (N)	46	1763	46	1764	" <i>yet traditional, culturally motivated species exploitation can nonethelss aid conservation (McPherson et al., 2016).</i> " ADD references and examples to give weight to the statement, reinforcing the fact that local practices based on local or indigenous knowledge can contribute to conservation, especially practices related to religious restrictions to sacred sites. FOR EXAMPLE:	Examples added as new box. Boxes need renumbering and references to be added to the list

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>- Gadgil et al. 1993: (p154)"Four kinds of indigenous conservation practices are of particular relevance. They include: (a) total protection to many individual biological communities including pools along river courses, ponds, meadows and forests. (...) sacred groves (...). (b) all individuals of certain species of plants and animals may be afforded total protection. (...). (c) certain particularly vulnerable stages in the life history of an organism may be given special protection. (...) (d) Major events of resource harvest are often carried out as a group effort. (...) This in turn may have helped in continually adjusting resource harvest practices so as to sustain yields and conserve diversity."</p> <p>- Baco et al. 2007: Local farmers' knowledge contributes to the conservation of agrobiodiversity in Benin through agricultural and social practices.</p> <p>- Bobo et al. 2014. Wildlife use and the role of taboos in the conservation of wildlife around the Nkwende Hills Forest Reserve, South-West Cameroon</p>	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>- Chibememe et al. 2014 (Zimbabwe): (p193) "Dudley, Higgins-Zogob, and Mansourian (2005) believe these traditional systems such as sacred sites are probably the oldest method of habitat protection on the planet and still form a large and mainly unrecognised network of sanctuaries around the world". "The Sangwe community, like many traditional communities in Zimbabwe, still uses some pre-colonial systems of managing biodiversity through IKS (Indigenous Knowledge Systems) based on their cultural values, customary laws, innovations and spiritual and religious practices. Much of the IKS contain strategies critical for managing forest, water and wildlife resources." - Golden 2014: (p262) (Madagascar)</p>	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>- Virtanen 2002. (Mozambique): (p227):"On the basis of a case study from Mozambique the paper concludes that traditionally protected forests do have a practical conservation value, especially as fire refuges and in the preservation of metapopulations of endangered species. However, it is also important to recall their spiritual aspect, which is crucial for continuing appreciation and upholding".</p>	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>- Campbell 2005 (Ghana): (p3) "Described as "sacred places where trees and plants were allowed to grow undisturbed" (Nayar, 1987: 4), and some even as "priceless treasures of great ecological, biological, cultural and historical value" (Chandran & Gadgil, 1998:3), sacred groves have been documented in Indonesia and Senegal (MAB, 1995); Cote d'ivoire (Sanogo, 1983; Koagne, 1986); Cameroon (Fisiy, 1994); Japan, Turkey, Syria, India and Nigeria (Tiwari et al., 1998); and Ghana (Ntimoah-Baidu et al.,1992; Decher, 1997)."</p> <p>- Savadogo et al. 2011 (Burkina Faso): (p1640) "Places of worship, here sacred woods, are reservoirs of biological and cultural diversity (Juhé-Beaulaton, 2010), and represent also a facteur of perpetuation of the rural society (Ballarin, 2006; Cousin and Martineau, 2009; Matthieu, 2010). It is in this perspective that the Convention on Biological Diversity adopted at the Rio summit in 1992 recognized the necessity to protect sacred woods and to encourage the utilization of biological resources according to cultural practices and traditional rules.</p>	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
239	Nakashima - ILK expert (N)	47	1787	47	1791	<p><i>"The inclusion of ILK is not only a matter of equity but also a source of knowledge that we can no longer afford to ignore (Diaz et al., 2015)."</i></p> <p>DEVELOP on how ILK has been addressed by science and institutions so far, how it is used, what implications there are in using it, and precautions to take regarding preservation of the integrity of the knowledge accessed (notably, ILK refers to forms of knowledge that are embedded in social and cultural systems and which make sense only if related to these systems, and their extraction from this context should be made with caution. Validation by science is not necessarily relevant since ILK and scientific knowledge are built on different grounds and both make sense in their own systems of reference. However, both systems can be complementary and inform each other. SEE:</p>	

					<p>- Nakashima & Roué 2002 (p1): "For the time being, the scientific and the development communities views indigenous knowldege first and foremots as a resource to be appropriated and exploited. Integration with (or more accurately into) science implies the application of a validation process based on scientific criteria that purportedly separates he useful from the useless, ojective from subjective, indigenous 'science' from indigenous 'beliefs'. Through this process, knowledge corresponding with the paradigm of Western science is extracted, and the rest is rejected. While this cognitive mining may be profitable to science, it threatens indigenous knowledge systems with dismemberment and dispossession". (p5): "While scientists and development agencies are only beginning to acknowledge their significance, their enduring role as the mainstay of local food production and health care in the developing world cannot be questioned. In sub-Saharan Africa, for example, local knowledge guides the decisions and practices of small-scale farmers who represent 70-90% of agricultural producers and more than 60% of the population. Artisanal fishers, who represent more than 90% of the fisheries work force world-wide, rely on their own knowledge and skills to locate fish, navigate safely at sea and bring home the catch. Similarly, it is estimated that some 80% of the world's population fulfills their primary health needs through the</p>	
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					<p>use of traditional medicine." (p5):"Since the 1993 UN Conference on Environment and Development, and in particular the coming into force of the Convention on Biological Diversity, increasing attention has been drawn to the contributions that indigenous knowledge can make to global biodiversity conservation objectives. This emerging role for indigenous knowledge holders has flowed quite naturally from the recognition that most remaining regions of the world that are biodiversity rich are also homelands for traditional and indigenous peoples."</p> <p>(p5):"Inventories of local biodiversity can also benefit from knowledge encoded in local languages in the form of indigenous categories of natural objects. Finally, as indigenous peoples retain within their knowledge systems an inter-generational memory of fluctuations, trends and exceptional events in relation to the local environment, they can contribute importantly to understanding processes of change, whether these might be long-term, global transformation processes or circumscribed local events. The invaluable contribution of indigenous knowledge to environmental and social impact assessment processes, for example, has been convincingly demonstrated."</p>	
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Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>- Thomas & Twyman 2004: (p215-216) "This paper explores differences in scientific and local land-user views of vegetation state and dynamics using case studies from the Kalahari region of Southern Africa. We argue that simply juxtaposing one form of 'knowledge' against another as a test of validity is unhelpful and does not enhance our understandings of complex dryland social and environmental systems. However, by accepting that all forms of 'knowledge' are hybrid, and that one form of knowledge should not be privileged over another, we argue that this approach provides a relevant platform or framework for better understanding the dynamics of vegetation change in drylands, as well as enhancing our understanding of sustainability and the persistence of change within rangelands."</p> <p>- Sulieman et al. 2012: (p234) "In recent years, the local knowledge and the perception of rural people in the Sahel was increasingly used to understand the extent of vegetation changes (Lykke, 2000; Wezel & Haigis, 2000; Lykke, Kristensen & Ganaba, 2004)."</p>	

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
240	Matthew McCartney (MM)	48	1819	48	1819	It is not at all clear how the "team's degree of confidence about conclusions" is determined. Who is "the team" and how do they go about deciding degree of confidence? Is there a systematic procedure for this? Of course there should be.	Rephrased to better stick to what has been done (not much) on this issue. We need urgent help on how to address uncertainties!
241	Josiane Seghieri (JS)	48	1823	48	1823	Add a « n » at the end of « informatio »	Corrected
242	German IPBES Coordination office and national scientists (IPBES)	49	Box 1.8			The objective of this is unclear.	Corrected
243	German IPBES Coordination office and national scientists (IPBES)	49	Box 1.9			The content of this box seems redundant since containing very general definition.	Corrected
244	Gianluca Ragusa (GR)	49	Box 1.9:	49	Box 1.9:	There is not a gender perspective, particularly important in trade in African countries (eg fishermen fish and women transform and trade).	
245	Safaa A. Ghoneim (SAG)	50	1868	63	2510	Some references focusing more on the Ecosystem Services and challenges of climate change in Africa could be added here, I may suggest:	Could not include them properly in the text. So they were not added to the list

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
						<p>Filho, Walter, 2011, Leal Experience of climate change adaptation in Africa, Springer</p> <p>Kimani, S.M., Kamau, E.O., Onugo, P.O., 2011, Conflicting Policies promoting climate change resilience</p> <p>Safaa A. Ghoneim, 2012 An Ecosystem approach and an ecosystem service assessment technique for planning and management of coastal wetlands, PhD, University of Liverpool.</p> <p>2008, Maria Snoussi, Vulnerability assessment of the impact of sea-level rise and flooding on the Moroccan coast: The case of the Mediterranean eastern zone, Estuarine, Coastal and Shelf Science, Volume 77, Issue 2, 10</p>	
246	Josiane Seghieri (JS)	55	2121	55	2121	Replace equitable by equitable	replaced
247	Josiane Seghieri (JS)	57	2209	57	2209	Replace attributable by attributable	replaced
248	Josiane Seghieri (JS)	13 and 18	418 and 665	13 and 18	418 and 665	Replace suitable by suitable	replaced
249	Abdelfattah Badr (AB)	50-63	1868			The references list needs careful revision to complete missing information	Work in progress

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
250	Susan Ringrose (SR)		221			Africa is a whole very diverse continent - not a small region..	Don't understand what is expected here
251	Susan Ringrose (SR)		329		337	Problems of water supply also have the dimension of the lack of funds/capacity (political will) to deal with water storages	
252	Susan Ringrose (SR)		415		426	Various estimates have been place on Africa's 'available' arable land and definitions are required. These vary a lot throughout the continent but 65% of global total seems a bit high - Roxburgh et al., 2010 indicate around 60%. A major concern includes 'land grab' issues especially now from Arab countries in search of food security. Check references and indicate which countries most affected plus ensuing local problems.	The reference to Roxburgh et al (2010) could not be found. Nothing changed
253	Susan Ringrose (SR)		418			Need to explain why less use is made of resistant seeds/fertilizer than other parts of the world - and regional disparities around this issue	Chapter 1 is not the place to discuss the issue of less use of fertilizers. The regional disparities will be discussed in SOD
254	Susan Ringrose (SR)		460			Permaculture may be important here	Don't understand what is expected here
255	Susan Ringrose (SR)		480			Problems with pastoralism include high mortality rates (especially during drought) and lack of adequate market infrastructure. Cultural issues are also very important	To be addressed in SOD
256	Susan Ringrose (SR)		551		558	Could be a convergence between rural high rates of unemployment and CBNRM	Don't understand. Nothing changed

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
257	Susan Ringrose (SR)		589			Level of human impact on habitat fragmentation needs much greater clarification - indicate basis/reference for the 3.7% in 1970 and 99% in 2010 assertion and what this actually means on the ground..	The reference is already provided. No change made
258	Susan Ringrose (SR)		600			Figure 1.4 Water stress map is entirely unrealistic - many countries shown as being sufficient are seriously stressed - suggest you find a better updated map	The map is a projection (legend modified). It is not unrealistic, it is very similar to that of UNEP (2008) provided as alternate figure 1.4
259	Susan Ringrose (SR)		684			Knowledge of numbers/densities tends to be erratic with varying consistency - check the accuracy levels of the various national censuses.	Can't see which numbers are erratic. Nothing changed
260	Susan Ringrose (SR)		715		722	Variations in the Multidimensional Poverty Index across such a diverse continent is not surprising. Infact this entire section (and earlier water section) would be better shown as tabular data which would point out differences between regions within Africa. it is important to point how how and why these differences occur.	A tabular view may be added in SOD to show regional differences
261	Susan Ringrose (SR)		730		733	Arguably the urban poor are more impoverished than the rural poor - who have more natural resources at their disposal	Do not agree. Nothing changed

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
262	Susan Ringrose (SR)		766		788	Excessive generalisation which hides the real issues. This section needs explicit diagrams and specific examples	Chapter 1 is not the place for too many examples. No change made
263	Susan Ringrose (SR)		818		830	Would be useful to have specific examples here - what is the result of overcrowding and non-existent sanitation?? Is this situation consistently the same throughout all of Africa?	Sanitation is mentioned above in section 1.2. I do not understand what is requested here. No change made
264	Susan Ringrose (SR)		826			Kindly note that not all of Africa is in civil strife where ecosystem services are being or have been annihilated. Recovery stories include Mozambique and Angola where e.g. HEP development may in turn contribute to a decline in ES with related health concerns	There is no phrase indicating that. No change made
265	Susan Ringrose (SR)		845			Both overfishing and mineral wealth are subject to over-exploitation - though much of this is externally induced. A distinction needs to be made between internal African issues and external issues	A mention has been added
266	Susan Ringrose (SR)		847		853	You need more tangible evidence of the links between environmental issues and water borne diseases	An explanatory phrase and a reference were added
267	Susan Ringrose (SR)		853			Explain why neglected tropical diseases are likely to increase - what is a likely scientific basis for this statement?	An explanatory phrase and a reference were added

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268	Susan Ringrose (SR)		855			Table 1.2 These are not direct (and indirect) responsibilities only recommendations - with no specific agency taking responsibility	Can't see what is requested here. No change made
269	Susan Ringrose (SR)		864			African examples needed - human alteration of earth systems leading to human health problems is probably more a western problem	No change here. Chapter 1 is not the place for such examples
270	Susan Ringrose (SR)		868		869	Clarify. What exactly are mortality impacts produced by household energy??	Clarification added
271	Susan Ringrose (SR)		870			The Okavango is a good example - it is biodiversity rich but lies in an area of extreme poverty - due to remoteness	Can't see how this fits in this chapter. No change made.
272	Susan Ringrose (SR)		904			While plan 'uptake' is important -much more important to know how the plans were rolled out/implemented and whether or not they were effective	Do not understand. No change made
273	Susan Ringrose (SR)		1072			Need a map showing Protected Areas in east, southern, western, northern and central Africa - and their relevant status (all on web)	Fig. 1.9 will be replaced in SOD
274	Susan Ringrose (SR)		1182			Check whether this has changed since 1998 in Namibia - now around 50% land under customary care	No reason to indicate the present situation in Namibia here. What is described in this sentence is the situation "until the late 1990s". The evolution of the situation is given in the text that follows. No change made

Comment #	Reviewer Name	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	How Addressed?
275	Susan Ringrose (SR)		1225			Needed here is a summary of the relevant innumerable policies and an indication as to which are more effective on the ground	I disagree. Chapter 1 is not the place to give such information. No change made
276	Susan Ringrose (SR)		1338		1348	Clarify here how ecosystem services and natural resources are at the heart of conflict generation (with examples)	It is not written here that ES and natural resources "are at the heart of conflict generation" but instead that "resources are at the heart of this concerning combination". The combination is described in the previous chapter. No change made here.
277	Susan Ringrose (SR)		1356			Need to include the aftermath of the 'assumed' colonial legacy	A reference to this point was added
278	Susan Ringrose (SR)		1459			Need to separate out legal trade under CITES and illegal trade - and how to mitigate the growing illegal sector	The reference to CITES in this specific chapter does not appear pertinent. This chapter is setting the scene on trade agreements, not discussing this point. Nothing changed.
279	Susan Ringrose (SR)		1511			How much of the 45% land area here indicated as being subject to degradation is in reality natural desert/semi-desert?	Over 25% of Africa's land is actually desert. But this precision is not pertinent here since the important is that a larger percentage is at risk of desertification, be it desert or non-desert land. The source reference has been added.

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280	Susan Ringrose (SR)		1529		1530	Need to emphasise link between range degradation and its impact on the agricultural sector - especially pastoralism	I do not understand (LT)
281	Susan Ringrose (SR)		1537		1566	Include here the role played by the growing tourism sector in protecting/promoting ES despite climate change	Do not agree. Nothing changed
282	Susan Ringrose (SR)		1576			Most if not all introduced species are potentially 'invasive' - be clear that this includes plants, animals, insects and birds	Insects and birds are animals. The phrase added quotes animals, vegetables and microorganisms
283	Susan Ringrose (SR)		1605		1621	Indicate where exactly invasive species are a problem and what impact these have on ES, hence on poverty alleviation	It is not possible to be more specific. "Where exactly" are to many places ! Nothing changed
284	Susan Ringrose (SR)		1622			Need maps to show high biodiversity areas and their degree of protection (or otherwise).	integrate
285	Susan Ringrose (SR)		1693		1701	This needs following up by indicating how various countries achieved this re-focussing on natural capital through the WAVES mechanisms	author WAVES parag
286	Susan Ringrose (SR)		1832			Are a number of international basin commissions (e.g. OKACOM, Limpopo Commission, etc) working out shared water issues. Show how these attempt to affect international plans for ES implementation	Water group to address

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287	Susan Ringrose (SR)		238 onwards			This entire section needs many more regional maps to show the distribution of major ecosystems-areas of high biodiversity especially as you are setting the stage for subsequent sections (see Thieme et al., 2005)	integrate
288	Susan Ringrose (SR)		240 onwards			Authors need to better understand why African governments tend not to give priority to biodiversity and ecosystem services. Their main focus lies elsewhere so true there may be minimal inclusion in Development Plans until income generation (e.g. tourism) takes centre stage	integrate
289	Susan Ringrose (SR)		666 onwards			Need to point out which ecosystem services (other than water) are likely to benefit urban/peri-urban dwellers - vegetable growing in valleys used as sewers and liable to flood is a dubious answer	integrate
290	Susan Ringrose (SR)		Fig 1.1			Not sufficiently comprehensive	Figures will be redrawn for SOD
291	Susan Ringrose (SR)		Fig 1.2			Slightly better but still over generalised - trends over eastern and western southern Africa are vastly different for a host of diverse reasons	Figures will be redrawn for SOD
292	Gianluca Ragusa (GR)					578 also bring opportunities for agricultural transition with many possible wider benefits (Mellor, 2014), but an integrated approach can avoid to exacerbate conflicts among different local users.	Suggested sentence added

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293	Gianluca Ragusa (GR)					802 to other important diseases, for example, through the Integrated Disease Surveillance and Response	Can't see what is requested here. No change made
294	Gianluca Ragusa (GR)					803 Strategy (WHO, 2014), despite equal access to health and sanitary services is still a main threat to the affected populations and epidemics (eg ebola, yellow fever, dengue, etc.) are unfortunately still registered.	Suggested sentence added
295	Gianluca Ragusa (GR)					839 in the sea, with ever increasing rates of effort being used to capture a dwindling fish supply (Pauly &	Rephrased
296	Gianluca Ragusa (GR)					840 Zeller, 2016). And from 2014, African Union is implementing a continental fisheries and aquaculture sustainable policy.	A sentence and a reference to the AU policy was added
297	Gianluca Ragusa (GR)					1042 decentralization enshrined in their laws or constitutions, although not often fully effective.	Integrated
298	Diane Douglas (DD)					Good treatment of issues. No recommendations for revision.	