

Comments from 1st Review Phase of Chapter 5. Deliverable 2b. Americas Assessment on Biodiversity and

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Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Lucía Oralia Almeida Leñero/ Lucía Perez V	General Comment				The way the issues are addressed is incomplete.	Agree. Expanded and more complete discussions of intergration across the framework is being prepared for the SOD.
Lucía Oralia Almeida Leñero/ Lucía Perez V	General Comment				The chapter is called: Integrated and cross-scale analysis of interactions of the natural world and human society and it is not strange that of the social and cultural context of the places, nor mention the cultural diversity they have.	Some discussion of subregional cultural differences is contained in the focal analysis. The lack of available ILK informationa and guidance remains a challenge.
Lucía Oralia Almeida Leñero/ Lucía Perez V	General Comment				The social aspects are almost not considered when proposing future scenarios or say things like. Indigenous peoples destroy ecosystems can not leave such a consideration.	See response to comment 2, above. However, we cannot find statements as implied by commentor's second sentence.
Lucía Oralia Almeida Leñero/ Lucía Perez V	General Comment				Among the case studies not all biomes mentioned, only some and not I know if the idea was to include them or not.	Page limits and lack of sufficient information across all UA will prevent addressing all UA, ESGs, and drivers.
German IPBES Coordination Office and national scientists	General Comment				Some sections in Chapter 5 are addressing general (and or global relevant) aspects that are of (the same) importance to all Regional Assessments - this should be kept as short as necessary. Main focus should be on examples with special relevance for the Americas Regions.	Agree in part. We believe that readers must be given sufficient context of the whole IPBES effort as it is unreasonable to expect readers to read all relevant IPBES documents. However, through the Second Authors Meeting, significant progress has been made on reducing redundant information.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	General Comment				Please make sure that all contents and outline on Chapter3 in IPBES/3/6/Add. 1 are reflected.	Coverage of the points listed in the scoping document has been expanded, but limitations will exist due lack of available published peer-reviewed and gray information. At this point, all points have been addressed to some level.
German IPBES Coordination Office and national scientists	General Comment				Important hints concerning knowledge gaps are of utmost importance and the authors are therefore encouraged to outline major knowledge gaps more clearly with the end to include them in the upcoming SPM, in terms of capacity building needs and/or research needs at the regional/subregional and national levels. The authors are also encouraged to outline major regional discrepancy in available knowledge and knowledge gaps more clearly as their identification and classification are necessary contributions to support decisions, conservation and for ongoing and future assessments.	Agree; being addressed, but will not be complete until SOD is complete.
German IPBES Coordination Office and national scientists	General Comment				The authors are encouraged to outline major regional discrepancy in available knowledge and knowledge gaps more clearly as their identification and classification are necessary contributions to support decisions, conservation and for ongoing and future assessments.	Agree; being addressed, but will not be complete until SOD is complete.
German IPBES Coordination Office and national scientists	General Comment				Please select certain relevant key messages for the upcoming SPM and add uncertainty statements or qualitative confidence levels to all of them to ensure the credibility of the assessment.	Agree; being addressed, but will not be complete until SOD is complete.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	General Comment				We greatly appreciate the well structured approach to choose the biomes most relevant for the Americas (see also Chapter 1, Line 536, Table 1) which are investigated and referred to in detail in all 6 Chapters. Please ensure that an order once agreed upon (which might be the one in Chapter 1, cited above) is maintained, as in the current sections of the document the order is very often mixed up and might complicate conclusions concerning certain biomes.	The new structure of the chapter hopefully makes this clearer.
German IPBES Coordination Office and national scientists	General Comment				We appreciate very much quoting of source: IPBES Deliverable 3 (c) (Policy support tools and methodologies for scenario analysis and modelling of biodiversity and ecosystem services based on a fast track assessment and a guide) but would like to emphasise that exceeded cross reference and detailed quoting are not always very helpful. We would like to encourage authors to include focussing on findings for future development of concrete cases linked to Americas.	We think inclusion of this information is necessary for readability and understandability... we doubt that most readers will have actually read the quoted guidance document. We agree on need to develop more Americas-specific discussions.
German IPBES Coordination Office and national scientists	General Comment				Case Study on Amazonas (Chapter 1, Page 21, Line 613 to 683) is focussing on global leakage effects, too. Leakage should be in the focus on (sub)regional AND on global level; please provide more relevant research data on leakage effects.	Thank you for this comment.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	General Comment				Consider quoting and reference to publications "Planetary boundaries: Guiding human development on a changing planet" and "The trajectory of the Anthropocene: The Great Acceleration" (both Steffen et al 2015) to include reflections and links on global, regional and subregional levels.	We will review reference. (Cross-scale section)
German IPBES Coordination Office and national scientists	General Comment				The recently published WWF Amazonas Report 2016 might be considered as it offers some new findings and provides many relevant publications. The report draws heavily on research carried out by academics, independent researchers and other NGOs. More than 300 key references and notes are given. (see: <a href="http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_living_amazon_report_2016_mid_res_spreads_1.pdf">http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_living_amazon_report_2016_mid_res_spreads_1.pdf</a> ).	We will review reference.
CONABIO	General Comment				We consider it necessary to synthesize information from previous chapters to be analyzed in this and to have fluidity and consistency throughout the document.	Agree. The wording has been improved by coordinating with other chapters.
Carlos Alberto Arnillas	1	1	1	2	The title does not reflect the content of the chapter. Most of the analysis is focused on habitat degradation or transformation, but the actual interactions (how benefits/services/threats are transferred from the ecosystems to the society in particular) and not addressed in depth.	Agree. The wording has been improved.
Lucía Oralia Almeida Leñero/ Lucía Perez V	4	96	4	96	Figure 1-X doesn't exist	Correct reference is Figure 1.1.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Diego Pacheco	4	77	4	87	There is not an adequate use of the conceptual framework. The IPBES conceptual framework refers to good quality of life (not only well being but living-well in balance and harmony with Mother Earth) and nature benefits to people (not only goods and services but also nature gifts). Also nature is understood as Mother Earth. therefore a correct quotation and understanding of the conceptual framework is necessary.	Framework is used as the basis of focal analyses.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Liliana Bravo-Monroy	4		45		<p>GENERAL COMMENTS: Chapter 5 would not seem to build on the information in the previous chapter. There might be an apparent disconnection from Chapter 4. Furthermore, it would seem that it has slightly distanced from the general aim of Ch 5, namely the dynamics of the interactions between society and nature by all the boxes and fluxes of the IPBES Conceptual Framework.</p> <p>There would be helpful: (i) To align the contents of Chapter 5 with biomes of Chapter 4;</p> <p>(ii) To unify the type of analyses and descriptions through the Ch 5 i.e., a common thread running through the chapter;</p> <p>(iii) To also consider interactions from other knowledge systems e.g., cultural traditions expressed in integrated relationships with the natural environment with implications for management;</p> <p>(iv) To include integrated and cross-scale analysis of the dynamics of the interactions between people and ecosystems, including feedback, synergies, time-lags, tipping points, resilience, cross-regional interrelations, and trade-offs.</p> <p>(v) To include a subsection/paragraph related to high mountain ecosystems (Paramo ecosystems), given that are concentrated in the northwest corner of South America (mostly in Colombia, Venezuela and Ecuador). Those are regulators of</p>	<p>Agree.</p> <p>i &amp; ii - The wording has been improved. iii - Some discussion of local customs is included, but ILK effort lags assessments; iv - it is becoming clear that many aspects of the relationships of ESG, drivers, and good life have not been sufficiently elucidated, thus time lags, interconnectivity, cross-scale considerations, tipping points, etc. at this point is largely a matter of speculation and hypothesis... not scientifically demonstrated... it will be difficult to address these issues with any level of confidence or credibility.</p>
Liliana Bravo-Monroy	4	76	7	173	<p>Introduction: There should be focused more on a brief summary of IPBES Conceptual Framework by reflecting all the boxes and fluxes, whose interaction is the object of analysis in this chapter.</p>	<p>Thank you for your comment.</p>

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Lucía Oralia Almeida Leñero/ Lucia Perez V	5	107	5	107	Improve the quality of the image, this should be done to all the images in the chapter	Noted and completed.
German IPBES Coordination Office and national scientists	5	107	5	107	Figure SPM1 (3 c) is fine here but should be renamed and possibly reshaped concerning Chapters 5 figures. If possible provide regional examples to underline.	Agree. Noted and completed, this figure has been used to in the focal analyses.
Diego Pacheco	6	136	6	146	The acronym EGS (Ecosystem good and services) must be replaced by NBP (Nature benefits to people)	The wording has been improved.
Diego Pacheco	6	136	6	152	I do not consider appropriate to introduce this table of taxonomy of scenario families as a tool for analyzing the particular reality of the Americas. Barbarization is not a academic word and has political implications in the region. Also there is no clue about what is understood as the new sustainability paradigm (the ODS? the living-well in harmony with Mother Earth). Also in the conventional issue is not related to what is happening in Americas. Elinor Ostrom refers that there is not only public and private (market?) but also common pool resources. This is an scheme very biased, subjective and not appropriate for the reality of the Americas. I do not agree using these four scenarios for this assessment of the Americas.	The comments are valid on a fine scale and without page limits, but categorizaation of scenarios is necessary for dealing with 450+ scenarios; the Hunt and van Vuuren analysis approach was agreed to by the LDR, Global, and other three regional assessments at the Second Authors Meeting.
German IPBES Coordination Office and national scientists	6	129	6	131	This sentence should be refined by specifying some "typically american" drivers for human social evolution (to illustrate better).	Thank you for your comment.
Diego Pacheco	7	174	7	175	Is not analysis of ecosystem goods and services but of nature benfeits to people. Be consistent with IPBES conceptual framework.	The wording has been improved.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Diego Pacheco	7	174	11	225	The tables in this section are not comprehensive and seems to be that introducing them here only confuses the understanding of what this section is referring to.	The wording has been improved.
Liliana Bravo-Monroy	7	176	11	226	Major trends of biodiversity and ecosystem good and services indicators for the Americas: interpreting from the Global: What do analyses of biodiversity databases, scenarios and models of biodiversity and ecosystem services at the global scale have to say about the Americas?	Noted and completed.
German IPBES Coordination Office and national scientists	7	163	7	166	Important hints concerning knowledge gaps are of utmost importance and the authors are therefore encouraged to outline major knowledge gaps more clearly with the end to include them in the upcoming SPM, in terms of capacity building needs and/or research needs at the regional/subregional and national levels.	Agree; being addressed, but will not be complete until SOD is complete.
German IPBES Coordination Office and national scientists	7	182	7	185	This section should be kept in mind for the ongoing Global Assessment (Deliverable 2c) and the CBDs GBO5.	Thank you for your comment. Yes, most of the literature and databases identified here could be useful for the global assessment.
Liliana Bravo-Monroy	8	197	10	216	Figures: There would be also useful to include graphic information per each sub-region of the Americas (North America, Mesoamerica, the Caribbean and South America). A better resolution of the figures would welcome.	We are attempting to obtain sub-regional information, but in many cases it is not available.
German IPBES Coordination Office and national scientists	8	197	10	216	Please provide explication on graphs and figures (5.2. to 5.6) for better understanding.	Yes, narratives are missing and will be added.
Lucía Oralia Almeida Leñero/ Lucia Perez V	9	205	9	205	There is an extra ("	Noted and completed.



Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Lucía Oralia Almeida Leñero/ Lucia Perez V	9	205	9	205	the term "Intactness" of nature is controversial and presupposes a pristine nature, some authors claim no such things exist since all ecosystem have been to some extent manipulated by humans	This is the formal definition of the MSA.
Lucía Oralia Almeida Leñero/ Lucia Perez V	9	211	9	211	Km2 needs to have the superscript	Noted and completed.
Lucía Oralia Almeida Leñero/ Lucia Perez V	9	212	9	214	Management of ecosystems are not black and white, but rather a grey spectrum. In which classification would sustainable management enter? A "natural land" can have several degrees of deterioration due to natural causes like plagues.	This is not our own definition of how the "Natural Area" indicator was created and calculated. We will note that the definition we are using is from Alkemade (2009).
Lucía Oralia Almeida Leñero/ Lucia Perez V	10	224	10	224	No a single sources includes traditional knowledge. There are no sources that include genetic biodiversity, particularly referring to domesticated species	Thank you for your comment. We will look for references.
Diego Pacheco	10	224	11	225	I think there is no need to introduce this table since it seems that a lot of information is missing here, and is not exhaustive. Better to refer to this sources of information when the information is presented.	For the time being we put it there as a reference of the potential sources of information for this section
Liliana Bravo-Monroy	10	224	11	226	An additional conceptual model that might be of interest for authors in the Table 5.2: MABES explores pollination, as a mobile-agent-based ecosystem service, and how is affected by land-use change. Useful information in that regard can be found in the following source: Kremen, C., et al. (2007). Pollination and other ecosystem services produced by mobile organisms: a conceptual framework for the effects of land-use change. Ecology Letters 10: 299–314.	Thank you for your comment; we will consult the reference.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	10	224			Table 5.2. is very good and convincing; it seems comprehensive but additional references might be added by experts.	Thank you for your comment.
Lucía Oralia Almeida Leñero/ Lucía Perez V	12	233	12	247	This parragraph could be complemented with a figure to be more explicative	Thank you for your comment.
Lucía Oralia Almeida Leñero/ Lucía Perez V	12	260	12	260	Costanza's argument is poor since the technology to replicate ES doesn't even exist	The point is not to judge the argument by Constanza, but solely to point out different approaches on how to understand the loss of a given ecosystem service. Contanza proposes an approach that is in certain cases possible (for example to replicate drainage with grey infrastructure/tecnology).
Lucía Oralia Almeida Leñero/ Lucía Perez V	12	261	12	262	It should be made clear that not all ES can be traduced to monetary value, they also have cultural value which is fundamental to many indigenous cultures	Agreed - we can make it clearer.
Diego Pacheco	12	228	12	247	The analysis of sustainability will be based on the supply and demand? I consider that this focus of analysis is not correct since is taking only the market and economic side of biodiversity. I strongly recommend to change this mindset of analysis and move into a more comprehensive understanding to the values of biodiversity, as it is referred in the IPBES diverse conceptualization of values. Also, the analysis based on teleconnections and telecoupling is not clear to me. Emphasis wil be placed in the sustainable management of natural resources in this section.	The focus here is on cross-scale interactions and how those interactions influence (positively and negatively) ecosystem services and biodiversity. A current conceptual framework to talk about this is with the teleconnections and telecoupling concepts.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Diego Pacheco	12	254	14	351	More examples should be provided regarding the contribution of the region to the global quality of life, such as sustainable food production, biodiversity local conservation. The emphasis in the forests in the contribution of carbon (mitigation centric approach) I consider is very weak and is not consistent with the multiple functions of forests: social, cultural, ecological and economic.	Agree. It is important to expand the role of the amazonian forest in providing other Ess
Liliana Bravo-Monroy	12	227	14	351	Cross-scale issues affecting biodiversity and ecosystem goods and services Interesting concepts of teleconnection and telecoupling but were not applied in practice. The case of the Amazon Forests: That case is focused on measures instead of interactions of Amazon forests and human societies. The dynamics of several biomes/ecosystems that were described on Chapter 4 should be analysed here.	The applications will be developed in the next writing step
German IPBES Coordination Office and national scientists	12	233	12	247	Please cross check the term "teleconnections" with all other Regional Assessments concerning definition / using of this term which sounds uncommon (normally its used in relation to meteorological issues and not for aspects concerning biodiversity/ecosystems) ; please use "leakage" and "leakage effects" in relation to decoupled / coupled systems.	Other regional assessment (ECA) used the term" teleconnection" in the same sense as here. There is plenty of literature (which will be integrated in the text) where teleconnections is used related to Ess and B. As these are becoming common terms, we have also requested that definitions for teleconnections and telecoupling be developed for the IPBES dictionary.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	12	254	14	351	Recently published WWF Amazonas Report 2016 might be considered as it delivers some new findings and provides a high number of relevant publications which could be partly relevant for the case of the Amzon forests. The report draws heavily on research carried out by academics, independent independent researchers and other NGOs. More than 300 Key references and notes are given. (see: <a href="http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_living_amazon__report_2016_mid_res_spr_eads_1.pdf">http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_living_amazon__report_2016_mid_res_spr_eads_1.pdf</a> ).	Thank you for your comment, this is very valuable feedback.
Lucía Oralia Almeida Leñero/ Lucia Perez V	13	300	13	300	There is an extra ("	Noted and completed.
Lucía Oralia Almeida Leñero/ Lucia Perez V	13	301	13	302	Productivty of agricultural systems must also be studied in the short and long term including their respective environmental impacts.	Our point was to provide some examples available in the literature used by us. We are not going to do any study but rather a review of what is already available.
Lucía Oralia Almeida Leñero/ Lucia Perez V	13	305	13	306	This last argument is not true for most of indigenous cultures in America	Yes, we could address the fact that this is not true for most of indigenous cultures in America. However our arument is that contributions to human wellbeing by ecosystem services are generally taken for granted...
Lucía Oralia Almeida Leñero/ Lucia Perez V	13	311	14	351	It would also me interesting to add some of the social and cultural consequences of environmental destruction of the Amazon	This was added in the current version - considering the limited number of pages allowed for each chapter;
German IPBES Coordination Office and national scientists	13	273	13	281	Focussing on ILK with concrete cases is welcomed to cope with IPBES efforts to include other knowledge systems than those of western academic practices. Please consider relevant outcomes from the Dialogue Workshop held in Sucre, Bolivia ends of June 2016.	This has not being incorporated thus far.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Lucía Oralia Almeida Leñero/ Lucia Perez V	14	317	14	317	CO2 must be written with a subscript	Noted and completed.
Lucía Oralia Almeida Leñero/ Lucia Perez V	14	352	14	352	I would also be interesting to include a study of the political drivers that enhance environmental destruction (Who is causing deforestation? Why?) at a local level	While this is an interesting suggestion, it may be more relevant to Chapters 4 and 6, though the results of their work could be incorporated into Chapter 5.
Diego Pacheco	14	352	14	353	According to the conceptual framework the emphasis should be in biodiversity and nature benefits to people.	The wording has been improved.
Liliana Bravo-Monroy	14	352	16	433	Informing regional biodiversity and ecosystem good and services, futures from local studies There would be useful to include case studies of interactions between ecosystems and human societies across the sub-regions of the Americas (North America, Mesoamerica, the Caribbean and South America), where multiple and interconnected challenges/links can be clear at a range of levels from the continental to the sub-regional, to the national, to the community and household level e.g., case studies of community management of natural resources.	We are sorry that the reviewers do not suggest literature. We agree that this is something interesting to analyse, which we partly do in the cross-scale analysis section, but we have not identified such examples in the literature so far. However, taking this into consideration, we will look specifically for references.
Liliana Bravo-Monroy	15	371	15	375	Despite the fact that a model has not been found that represents all components of the IPBES model, a suggestion would be to construct models based on both the general conceptual framework and local experiences/cases.	We are not saying that there should be ONE model that represent the CF. We are saying that we havenot found a study that goes through alll components of the CF. The suggestion is very appropriate and this is what we hope for to in the very last section as well as in our focal analyses in which the IPBES framework figure is used to draw together various studies.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Liliana Bravo-Monroy	15	426	15	429	Despite the fact that a model has not been found that represents all components of the IPBES model, a suggestion would be to construct models based on both the general conceptual framework and local experiences/cases.	Same as above
Liliana Bravo-Monroy	15	384	15	393	The use of those mentioned indicators responds to the scientist language. It is also important to consider that conceptual frameworks have the ability to provide a shared language and a common set of relationships. Thus the use of a language that build bridges across disciplines and knowledge systems can be an useful tool.	Thank you, we have endeavoured to make the language more acceptable to a wide audience and clarified terminology
German IPBES Coordination Office and national scientists	15	370	16	433	Excellent overview on actual preliminary findings and ongiong plans for SOD (second order draft).	Thanks!!!
Lucía Oralia Almeida Leñero/ Lucia Perez V	16	434	16	434	This whole section need more pictures and diagrams, specially for representing the different scenarios and their respective outcomes	Thank you for your comment and we are in the process of developing figures that reflect the IPBES framework for every Unit of Analysis that has sufficient information.
Lucía Oralia Almeida Leñero/ Lucia Perez V	16	434	39	1061	This whole section barely includes the socio-cultural context and traditional knowledge of the case studies.	We are attempting to bring in more ILK information via the focal analyses and are recruiting one Contributing Author with ILK expertise. But again, the ILK Task Force is lagging the assessment efforts.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Diego Pacheco	16	403	16	407	Also it should be included as key topics of this section the following aspects that have extensive literature: 1) the positive impact of protected areas in the provision of nature benefits to peoples; 2) the sustainable use of natural resources in indigenous peoples and local communities; 3) the collective action and their contribution to the sustainability of natural resources; and 4) the impacts of urbanization in biodiversity conservation.	Invite Pacheco as CA to help with literature? Is there actual modeling on protected areas, or are the benefits just assumed to be apparent? Difficult to argue that protected areas don't help preserve EGS. We need literature on (quantitative) scenarios that helps us affirm what Pacheco is mentioning. We will check.
Diego Pacheco	16	434	16	443	I consider that is not appropriate to introduce the four archetypes for the analysis of case studies in this section. Is very confusing and all the richness that the America could provide to the global assessment is completely lost, using this logic of analysis.	It is not really practicable to try to present/consider the many scenarios developed for Americas. Additionally, the use of archetypes was agreed to by the LDR, Global Assessment, and all Regional Assessments at the Second Authors Meeting.
Diego Pacheco	16	434	39	1060	This is a very unorganized section and lack of contributions of the understanding of the different knowledge systems in the different biomas and subregions. This must be reviewed in a very comprehensive way in order to really introduce worldviews related to different knowledge sytsems.	We really need work products from the ILK task force. Again, Pacheco as CA?
Liliana Bravo-Monroy	16	422	16	425	The assessment of direct and indirect drivers was carried out in Chapter 4. The analyses of Chapter 5 should be a continuum of Chapter 4.	Yes, needs to be reviewed at SAM. Yes, a more clear idea of what we want to extract from participative scenarios has to be discussed.
Liliana Bravo-Monroy	17	444	26	798	Wetland systems(peatlands, mangroves, water bodies) & Tropical Dry Forests	We do not undestand this comment.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	17	44			Choosing Wetlands with special focus on Peatlands and Mangroves in Chapter 5.5.1 is appreciated to point out some of the main challenges and issues as Case study. But choosing Temperate Forests linked with the issue Freshwater Surface Waters etc seems not that convincing. The anticipated cross-cutting with the elaborated results of Chapters 3 and 4 is very welcomed and seem to be well structured. SDG could be easily integrated in this kind of approach.	I believe this is the result of different approaches to wetlands in the Americas versus Europe. We need to clarify that wetlands in North America are much more inclusive than the European approach of only considering peatlands as wetlands. For example, many swamps in North America are Temperate Forests. Likewise, need to make more explicit that surface water bodies include marshes, ponds, etc which are clearly considered wetlands in NA. Hopefully, we can get a consistent approach with the revised list of <u>Units of Analysis</u> .
Lucía Oralia Almeida Leñero/ Lucia Perez V	19	562	19	562	Km2 needs to have the superscript, this must be checked throughout the chapter	Agree.
Lucía Oralia Almeida Leñero/ Lucia Perez V	19	563	19	563	It might be relevant to point out that tourism industry is particularly threatening mangroves.	Yes, we will look for a reference on this.
Royal Gardner	19	554	19	555	Chapter 3 refers to a 50% global wetland loss. The reference for the 60% global loss in this chapter is RAMSAR 2016, but this is not in the reference list, so I am not sure what is referred to. Consider using Davidson (2014) as the LDR assessment does, and/or Dixon et al. (2016) at <a href="https://www.researchgate.net/publication/284235148_Tracking_global_change_in_ecosystem_are_a_The_Wetland_Extent_Trends_index">https://www.researchgate.net/publication/284235148_Tracking_global_change_in_ecosystem_are_a_The_Wetland_Extent_Trends_index</a> -- although Dixon lacks data on Latin America. In any event, a baseline year or timeframe needs to be identified. Minor note: RAMSAR is not an acronym (it's the city in Iran where the Convention was signed) and thus should not be upper case.	Thank you for your comment, this is very valuable feedback.



Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Royal Gardner	19	557	19	564	What are the MOA and WOA references? They do not appear in the reference list.	Citations have been added
Royal Gardner	21	645	21	645	As you develop the discussion about human well-being, you may find it useful to incorporate Horwitz, P., Finlayson, M. and Weinstein, P. 2012. Healthy wetlands, healthy people: a review of wetlands and human health interactions. Ramsar Technical Report No. 6. Secretariat of the Ramsar Convention on Wetlands, Gland, Switzerland, & The World Health Organization, Geneva, Switzerland. <a href="http://www.ramsar.org/sites/default/files/documents/pdf/lib/rtr6-health.pdf">http://www.ramsar.org/sites/default/files/documents/pdf/lib/rtr6-health.pdf</a>	Thank you for your comment, this is very valuable feedback.
German IPBES Coordination Office and national scientists	21	635	21	635	There exist many experiences and knowledge within REDD+ / ILK coming from a number of projects evolved under the International Climate Initiative ICI (see <a href="https://www.international-climate-initiative.com/fileadmin/Dokumente/2014-project_list_biodiversity.pdf">https://www.international-climate-initiative.com/fileadmin/Dokumente/2014-project_list_biodiversity.pdf</a> ).	Thank you for your comment, this is very valuable feedback.
Royal Gardner	22	657	22	657	Rather than RAMSAR 2016, I'd cite to the primary source: Davidson 2014.	Thank you for your comment, this is very valuable feedback.
Royal Gardner	22	659	22	663	I believe this refers to the WET Index, which Dixon et al. (2016) furthered refined to find about a 30% decline: <a href="https://www.researchgate.net/publication/284235148_Tracking_global_change_in_ecosystem_areas_a_The_Wetland_Extent_Trends_index">https://www.researchgate.net/publication/284235148_Tracking_global_change_in_ecosystem_areas_a_The_Wetland_Extent_Trends_index</a>	Thank you for your comment, this is very valuable feedback.
Royal Gardner	22	664	22	666	It would be useful to provide some specificity about the programs: the removal of perverse incentives through "Swampbuster" and the creation of positive incentives through the Wetlands Reserve Program.	Agree, discussion will be expanded.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	22	646			Figure 5.7 is very convincing and might serve as a prototype for various connections between Biom/Units and aspects of human well-being.	Agree. Will try to develop more generally and adapt to framework figure.
Royal Gardner	23	667	23	667	The statement that Canada has no specific wetland legislation is contradicted by lines 690-91. See also Rubec & Hanson (2009) <a href="http://link.springer.com/article/10.1007%2Fs11273-008-9078-6">http://link.springer.com/article/10.1007%2Fs11273-008-9078-6</a>	Thank you for your comment, this is very valuable feedback.
Royal Gardner	23	674	23	677	Again, make the policy linkage clear. Why did wetland losses due to agriculture decline? Because of the removal of perverse incentives through "Swampbuster" and the creation of positive incentives through the Wetlands Reserve Program. Note also Jenkins et al. (2010) who found that the estimated social value (ES) of Wetland Reserve Program lands surpassed the value of government payments for restoration in one year: <a href="http://isiarticles.com/bundles/Article/pre/pdf/14437.pdf">http://isiarticles.com/bundles/Article/pre/pdf/14437.pdf</a>	Thank you for your comment, this is very valuable feedback.
Royal Gardner	23	690	23	693	While I cannot speak to the situation in Canada, I do not think it is accurate to state that US states and localities promote the drainage of wetlands for agricultural purposes. While that was true in the past, that is no longer the case. See chapter 6 of Gardner, <i>Lawyers, Swamps and Money</i> (2011).	Need to clarify that encouragement was in the past.
Royal Gardner	23	694	23	698	It would also be instructive to note the magnitude of historic wetlands losses due to agriculture. The US was losing 137,540 acres annually in the mid-1970s to mid-1980s, which dropped to losses of 15,222 acres annually from 1986-1997. See USFWS Status and Trends reports -- Dahl and Johnson (1991) and Dahl (2000).	Yes, can add this info.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Lucía Oralia Almeida Leñero/ Lucia Perez V	24	739	26	798	There is a lot of information about Tropical Dry Forest coming from the Biological Station of Chamela, UNAM that could largely contribute to this section	Agree we are going to include some information of other relevant studies, included Chamela Station.
Royal Gardner	24	708	24	708	USEPA has issued its first assessment on wetland quality in May 2016. The National Wetland Condition Assessment can be found at <a href="https://www.epa.gov/national-aquatic-resource-surveys/national-wetland-condition-assessment-2011-report">https://www.epa.gov/national-aquatic-resource-surveys/national-wetland-condition-assessment-2011-report</a> . It may be useful to include the report's findings: "Nearly half of wetland area (48%) is in good condition; 32% is in poor condition and the remaining 20% is in fair condition."	Agree, we will incorporate this observation.
German IPBES Coordination Office and national scientists	24	740	26	798	Focussing on Tropical Dry Forests is quite ambitious as less scientific data exist on this biome; but the advantage comparing with Tropical Rain Forest are 1) its broader range which is covering all parts of the Americas from North to South including many different countries 2) the profound possible analysis of the economic, political and cultural aspects for many different governance systems with different historical past.	There is a broad range of information about actual and potential TDF in the Americas from the north to the South, as well as good scientific information produced by international TDF networks. Nevertheless contrast with Rain forests in some socio-ecological aspects will be interesting, we will consider the comment
Lucía Oralia Almeida Leñero/ Lucia Perez V	25	773	25	774	Mexico is not part of Central America, but North America	Agree
German IPBES Coordination Office and national scientists	25	763	25	766	Please don't refer only to cattle. Conversion of tropical dry forests happens also in great part for crops - see development of soy-corn agroindustrial land-use in Brazil; also for biofuels (sugarcane).	It depends on the scale and the country context, in some cases are crops, cattle or even mining the main disturbances. But we are going to include a broader set of references

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	25	771	25	772	Please provide informations on deforestation and protection of tropical dry forests in Argentina, Paraguay, Bolivia with the Dry Chaco; see e.g. Grau et al.; Kuemmerle et al. (comments / references in Chapter 3 - Line 62...).	We will review
German IPBES Coordination Office and national scientists	25	785	25	790	Results of rainfall scenarios for the tropical dry forests are very different and depend on which region is analysed; dry thorn forests mainly enlarge because on increase of rainfall variability and human pressure.	We are going to check more published scenarios, with regional emphasis, any proposal of published information?
Liliana Bravo-Monroy	26	799	36	970	A synthesis example of a focal issues for the Americas- Tropical Humid Forests: In general terms the focus of this section has been on a list of climatic models and scenarios. There are a few models that are worth highlighting from a social-ecological perspective (Walsh 2008: lines 884-889; Mistry et al 2014: lines 904-923; IIRSA: Table 5.4; SDGs: Table 5.5). There would be useful to conduct an appropriate analysis of the totality of mentioned models by taking account of, for instance: the cause of an event or why a given situation or condition has arisen; to compare and contrast models, scenarios, situations, cases, ideas, local experiences, or people; to construct/combine/design and analyse common schemes or trajectories of multiple drivers that reflect the cross-scale dynamics according to the IPBES conceptual framework.	Undoubtedly the majority of scenarios generated for the Amazonia center on climate change and its connection with biodiversity. The analyses of these scenarios will be taken into account in the SOD.
German IPBES Coordination Office and national scientists	26	794	26	798	Please provide more recent studies on international drivers for conversion of tropical dry forests: as international market and export development (soy in Northern Argentina, Paraguay); soy value chaine by int. Companies etc.	It depends on the scale and the country context, in some cases are crops, cattle or even mining the main disturbances. But we are going to include a broader set of references.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	26	799	36	970	Recently published WWF Amazonas Report 2016 might be considered as it delivers some new findings and provides a high number of relevant publications which could be partly relevant for the case of the Amzon forests. The report draws heavily on research carried out by academics, independent researchers and other NGOs. More than 300 Key references and notes are given. (see: <a href="http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_living_amazon__report_2016_mid_res_spreads_1.pdf">http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_living_amazon__report_2016_mid_res_spreads_1.pdf</a> ).	Thank you for your comment, this is very valuable feedback.
German IPBES Coordination Office and national scientists	26	812	26	812	Please review evidence by checking following reference (contrary findings in evidence that Amazon river seasonal changes will increase; see e.g. COE, M. T., COSTA, M. H., BOTTA, A. und C. BIRKETT (2002): Long-term simulations of discharge and floods in the Amazon Basin. – Journal of Geophysical Research 107. S. LBA 11-1-LBA 11-17.	Thank you for your comment, this is very valuable feedback.
German IPBES Coordination Office and national scientists	26	827	26	829	Informations and overview on all American countries using the instrument "integrated (land/space) planning" are very helpful and should be linked (see in this Chapter 5, Table 5.7, Page 42).	Thank you for your comment, this is very valuable feedback.
German IPBES Coordination Office and national scientists	26	835	26	835	Review numbers concerning increasing/decreasing rural population in urban areas.	Thank you for your comment, this is very valuable feedback.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	27	852	28	898	Summarizing results from different climate modelling is appreciated but please review rainforest to savanna scenario with recent simulations; here presented numbers seem to be valid any longer See: Soares-Filho BS, Nepstad D, Curran L et al (2006) Modelling conservation in the Amazon basin. Nature 440:520-523. Soares-Filho BS, Moutinho P, Nepstad D et al (2010) Role of Brazilian Amazon protected areas in climate change mitigation. Proc Natl Acad Sci 107:10821-10826. also: Walker R, Moore NJ, Arima E, Perz S, Simmons C, Calds M, Vergara D, Bohrer C (2009) Protecting the Amazon with protected areas. PNAS 106,26: 10582-10586, doi: <a href="https://doi.org/10.1073/pnas.0806059106">10.1073/pnas.0806059106</a> .	Thank you for your comment, this is very valuable feedback.
German IPBES Coordination Office and national scientists	28	890	28	898	See Walker et al. 2009 (previous comment): rainfall decrease not general; in part - in other parts of the Amazon increasing.	Thank you for your comment, this is very valuable feedback.
German IPBES Coordination Office and national scientists	29		30		Section with figures good evaluation.	Thank you for your comment.
German IPBES Coordination Office and national scientists	29	924	29	927	Concerning the issue of protected areas there is a number of biodiversity projects in Americas under the umbrella of ICI and LifeWebInitiative funded by the German Federal Ministry for the Environment, Nature Conservation Building and Nuclear Safety which might be of interest for exchange of knowledge and lessons learned (list at: <a href="https://www.international-climate-initiative.com/fileadmin/Dokumente/2014-project_list_biodiversity.pdf">https://www.international-climate-initiative.com/fileadmin/Dokumente/2014-project_list_biodiversity.pdf</a> ).	Thank you for your comment, this is very valuable feedback.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Lucía Oralia Almeida Leñero/ Lucia Perez V	31	943	31	943	A capital letter is missing	Will correct.
German IPBES Coordination Office and national scientists	31	941	31	947	Reducing net emission by forest regrowth: this is proposed by Government - but still not the reality as Forest Code is still in discussion. For future scenarios on land use see: Sustainable land management in Southern Amazonia: Model-based analysis of the robustness of carbon-optimized management systems under global change pressures Göpel, Schaldach in: Regional Environmental Change/REEC (in publ.)	Thank you for your comment, this is very valuable feedback.
German IPBES Coordination Office and national scientists	31	948	31	950	Please provide synthesis of scenarios; adding a summary of positive and negative scenario results might be helpful.	This it is the goal of the chapter
Lucía Oralia Almeida Leñero/ Lucia Perez V	32	955	35	955	in the "Uthopian Section" it must be stated that indigenous cultures will be respected and conserved	ok
German IPBES Coordination Office and national scientists	32	955	35	965	Excellent table and overview, could serve as case study and prototype for other local/regional biomes.	ok
Lucía Oralia Almeida Leñero/ Lucia Perez V	33	955	33	955	Some sections are written in Spanish	The phrases will be corrected
Lucía Oralia Almeida Leñero/ Lucia Perez V	33	955	33	955	It is assumed that Indigenous communities overexploit resources, when it is not necessarily the case	This table this contextualized with the projects IIRSA, the observation will be considered
Liliana Bravo-Monroy	37	971	39	1060	A synthesis example of a focal issues for the Americas	We do not understand this comment

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
German IPBES Coordination Office and national scientists	37	995	38	1005	Please provide informations on current development (Pampa).	Thank you for your comment, this is very valuable feedback.
German IPBES Coordination Office and national scientists	38	1006	38 following	1060	Chapter is too general, not specific for the regions: a differentiation between savannah biomes and pure grasslands (Great Prairies, Pampa) is necessary; role of carbon storage must be added.	Thank you for your comment, this is very valuable feedback.
German IPBES Coordination Office and national scientists	38	1024	38	1026	Soy bean crop mostly developed in woody areas in Brazil, Paraguay and Chaco Argentina.	Thank you for your comment, this is very valuable feedback.
Diego Pacheco	39	1060	40	1093	This analysis is very biased towards economic of goods and services, markets, issues of natural capital and business community. What is this? Is this a scientific document or a pamphlet promoting private investments in the region? This is not congruent with the conceptual framework of the IPBES.	We may need to delete this section or combine aspects of it with Scenario Development section
German IPBES Coordination Office and national scientists	39	1061	40	1093	Visions are too general; it's necessary to look also on global market scenarios and desertification risks for the discussion.	We may need to delete this section or combine aspects of it with Scenario Development section
German IPBES Coordination Office and national scientists	39	1061			Chapter 5.6 should be cross-checked with Chapter 6 concerning trade and international agreements (see especially Box 6.2, Page 27).	We may need to delete this section or combine aspects of it with Scenario Development section



Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Diego Pacheco	40	1094	43	1138	This analysis is very weak and biased towards some policies and not to the overall environment of policies regarding biodiversity and nature benefits to peoples. A framework for analysis of public policies should be included here, following basic studies of public policies, such as: economic incentives, fiscal policies, ensuring rights and ownership security, and others. The framework of the Institutional Analysis and Development developed by the colleagues of the Workshop in Policy Analysis of the University of Bloomington could be very useful.	We are expanding and refining this section. We are also making this section available to the Chapter 6 Coordinating Lead Authors for inclusion if they wish.
Liliana Bravo-Monroy	40	1094	43		Synthesis of relevant policy targets: The issues described here would not seem to be the objective of Chapter 5. In turn, Chapter 6 analyses options for governance, institutional arrangements and private and public decision-making across scales and sectors.	We are expanding and refining this section. We are also making this section available to the Chapter 6 Coordinating Lead Authors for inclusion if they wish.
Carlos Alberto Arnillas	42	1138	Table 5.7		About the table 5.7. It may be important to distinguish national government, subnational government, and non-government initiatives. That could help to reduce the gap between these levels. Also, It could be useful to sort the countries following some geographical criteria, like North to South or South to North. Maybe clamping them by similar areas could help to perceive patterns.	We are expanding and refining this section. We are also making this section available to the Chapter 6 Coordinating Lead Authors for inclusion if they wish.
German IPBES Coordination Office and national scientists	42	1137	43		Excellent overview on policy instruments of LAC-Region, should be complemented with Northern Americas countries situation.	We are expanding and refining this section. We are also making this section available to the Chapter 6 Coordinating Lead Authors for inclusion if they wish.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Lucía Oralia Almeida Leñero/ Lucia Perez V	44		44		Little has been discussed upon scenario building approach that also involves social and cultural aspects	Correct: we will review all possible stakeholder-local-based scenario studies and experiences to explicitly social and cultural involvement in those
Carlos Alberto Arnillas	44				The idea looks very interesting, but not too much to comment on yet. I'm also assuming that the descriptions of the options won't be in the final draft of the chapter, but maybe in a methodological appendix.	We will consider this
Liliana Bravo-Monroy	44		45		Visions and pathways - Towards scenario building for biodiversity and ecosystem services in the Americas: Both of these sections could be unified; should also relate to the long term 2050 vision of the Strategic Plan for Biodiversity and help to identify possible pathways to achieve this vision. It is suggested that the design of scenarios act in accordance with outputs/models of the thematic assessments; similarly, with the integration of previous subjects through Chapters 4 and 5.	Excellent suggestion and we are combining the sections.
German IPBES Coordination Office and national scientists	44	Lines missing			Chapter 5.8 very convincing and relying on general approaches of IPBES - in table 5.8. various options are discussed in a valuable manner.	Thank you for your comment.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
CONABIO	Figure 5.2, Figure 5.4, Figure 5.5, Figure 5.8				There are figures and information we consider most appropriate for inclusion in other chapters. For example, Fig. 5.2 on causes of biodiversity loss, seems to be more relevant in Chapter 4 on drivers of change. Also, the figures 5.4 on species abundance over time, 5.5 on natural areas in America and 5.8 on scenarios of degradation, as well as others that show changes over time, may be more relevant in Chapter 3 Trends.	Agree with fig 5.2. The others show trends but include potential trajectories to the future and that is the reason why they are included here.
CONABIO	Section 5.7				Similarly, point 5.7. "Synthesis of relevant public policies that have been officially adopted" seems a more relevant for Chapter 6 on "Options governance, institutional arrangements, and making private and public decisions at different scales and in different sectors" theme.	We are expanding and refining this section. We are also making this section available to the Chapter 6 Coordinating Lead Authors for inclusion if they wish.
Carlos Alberto Arnillas		77		155	This long section briefly presents several concepts, but without any reference that support them.	Citations have been added.
Carlos Alberto Arnillas		77		87	Ecosystem processes are not defined nor distinguished from EGS: is that intentional?	That needs to be distinguished, as in the CF
Carlos Alberto Arnillas		88		105	I don't think a formal definition of a model is important here, not even a formal definition of process vs. fitted models. I rather keep it as a box, to help readers focus in the more important things.	Thank you for your comment, this is very valuable feedback. We have wrestled with the issue of defining models and the suggestion to present it in a box may have excellent merit; we will try.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		107			This figure summarize several core ideas, but the fact that "scenarios" is duplicated seems a bit confusing, even more when "models" go from a "box" into a "arrows". Also, the lack of a feedback labeled as "models" between "nature's benefit to people" and "good quality of life" is totally confussing. That link is the most important gap -in my perspective, to answer the question presented by the title of the chapter: "integrated and cross-scale analysis of INTERACTIONS of the natural world and human society". But colored on gray imply that won't be part of the chapter. I commented a bit more about it later also.	This figure is directly from another IPBES document that is already approved.
Carlos Alberto Arnillas		107			It could be interesting to see a figure like that one with arrows color- and width- coded to show the number of studies (models) that intend to fill that link and the level at which that study focus (regional, national, subnational). When moving to the study cases, showing the same figure but now only with the subset of studies that apply to that particular area will help a lot to assess the knowledge gap related to each region.	Thank you for your comment, that is useful feedback.
Carlos Alberto Arnillas		124		135	There are lots of literature of scenario analysis not related to biodiversity and ecosystems that might be interesting to cite and refer briefly. At least to show that this is not an issolated and marginal scientific exercise.	This is very broad. Yes, there are many fields with scenario analysis, but we need to limit ours to the framework. An example of such literature might be found related to economics and may be amenable to a box?

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		136		146	The document just switched from a very broad idea (scenarios are a useful tool) to a very concrete problem (scenarios linked to EGS), and later to a specific set of scenarios built specifically to study global trends (discarding any national or local scale scenario). Those links are not justified or even presented, the text just switched from one idea to the next one. Key question: what is the important lesson to learn from each experience?	We review how explicit we make the connections, but this is a straightforward exercise in going from the general to the specific.
Carlos Alberto Arnillas		147	Table 5.1		The underlying assumptions and implications of each scenario are not described.	The table is taken from the original publication, and as it is a synthesis paper, it does not list all of the assumptions (it is likely there are hundreds if not more than a thousand), nor the specific implications of the scenarios.
Carlos Alberto Arnillas		149		152	The most important step of an scenario building process, as far as I understand, is to characterize the constraints of the different variables involved and the logical implications of one on another. This exercise is not described in the document, which for some readers can seem as if the scenarios can be totally unrealistic stories (as increasing the crop production without increasing deforestation AND without a huge investment in more efficient technologies accesibles for the farmers)	Hunt and van Vuuren reviewed over 450 scenarios. It is well beyond the scope of this exercise to try to present the building of these scenarios. The process of scenario building in general is discussed in section 5.8. Additionally, the building of scenarios, <i>per se</i> , is not within the scope of this assessment.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		163			In my opinion, the lack of understanding of the processes is as -or even more, important than the lack of data. E.g.: there is no way to predict accurately which species will be lost due to climate change, and there is almost no models linking climate changes into economic benefits at a national scale.	This is a "chicken and egg" situation. The data are needed to construct and test models, which will help us determine the process. Maybe it would be nice to differentiate between process based scenario modeling and purely correlative scenario based modeling. Moreover, there are tools for assessing the vulnerability of species to climate change and we will examine if including a discussion of these tools would be useful here.
Carlos Alberto Arnillas		166			The concept of drivers: Is it used in a formal way? If so, please include in a definition section. Or if only used a few times, replace the term with the concept. Also, which are the drivers?	Drivers are described and listed in Chapter 4 of the assessment.
Carlos Alberto Arnillas		167		171	It is not clear how the document defines "sustainability": Does it refer to the capacity of an adaptative response by the environment or the society? Or is the concept used as a criteria of the CURRENT communities to sustain human activities? In the first case, I agree it can be out of the focus of the chapter. But in the second case, I think you should keep it in this chapter, or rename the chapter. To distinguish those concepts, would it be useful to introduce the concept of adaptation or the temporal scale related to them?	We can search for a precise definition in the context of IPBES, but basically it relates to the idea of an adaptative response, but it really refers to the common useage of the word... to use a resource without reducing the ability of future generations to also use the resource.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		186		196	MSA is not a metric that link ecosystem with environmental services, just provide an expected lost of biodiversity. In fact, most of the models presented focus more on negative impacts of humans in nature than on positives impacts of the nature on humanas. That should be clearly presented, and discussed, because I think it is the most difficult step to engage a broader public into the ecosystem services literature. The lack of models to describe it should be discussed and explained also.	We presented an example of the functionaslity of GLOBIO to predict future trajectories for, in this case, two biodiverity metrics. We will extend our search for specific environmental services considered under this model framework as well as on positive effects.
Carlos Alberto Arnillas		192			If different models will be used, they should be maped to the standard list of scenarios.	This scope of this assessment does not include generation of models, per se. However, as the analyses proceed, it has been agreed that any scenarios that enter the synthesis will be mapped to the four archetypes of Hunt, et al.
Carlos Alberto Arnillas		218		222	This is a good idea, but there are not results to comment. The same for the previous figures, tables and paragraphs.	This is under construction...
Carlos Alberto Arnillas		235		247	Move these concepts to a box? The concepts are useful, but they should be used more thoroughly, or just discard the actual term and explain the idea behind it if only used a couple of times.	We will discuss this.
Carlos Alberto Arnillas		257		260	Is this the right place to discuss the different ways to value an ecosystem? Are these ways discussed/used in the report?	we are not discussing different ways to value na ecosystem but rather pointing out what are the approaches from the literature. It is relevant to state what are the different appriches of valuating human wellbeing because this seccion of chapter 5 aims at clarifying the base for decisions on land use at the local level that may influence the global wellbeing.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		273		281	The ideas in this paragraph are important but not clearly explained.	Agreed - we can make it clearer
Carlos Alberto Arnillas		288			Several countries have created reports of economic impact of climate change funded by IBD: Chile, Bolivia, Mexico, Peru. Some of them include deforestation models that could be important to cite.	not incorporated thus far
Carlos Alberto Arnillas		290		298	Move to the Amazon section	ok
Carlos Alberto Arnillas		299		306	This is a very broad idea... here, where global models outputs are synthetized, seems out of focus.	Text was changed
Carlos Alberto Arnillas		176			Suggestion for this section: Highlight how the different global scenarios imply different deforestation rates in America, and if there is any spatial pattern (North America vs. South America). Important to acknowledge in some cases that the allocation won't capture country level dissimilarities (as far as I remember, GLOBIO uses as input a spatially explicit land use model, but others use groups of counties for analysis)	This is related to another comment where it is also suggested to split results per country or subregion within the Americas. We will discuss if this is possible with the sources of information.
Carlos Alberto Arnillas		176			Suggestion for this section: MSA is a nice metric to explain how much we are pressing the ecosystem to its limits, and how risky is that. In fact, I won't say that MSA assess EGS, it focus on the diversity as an overall metric of health of the ecosystem processes. But it didn't tell us much more. The distinction between ecosystem process and EGS can be relevant here, and highlighting the fact that this creates an overall buffer to support us also.	We presented an example of the functionaslity of GLOBIO to predict future trajectories for, in this case, two biodiversity metrics. We will extend our search for specific environmental services considered under this model framework as well as on positive effects.



Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		176			Suggestion for this section: This section will gain a lot if compares the America vs other areas of the world. For that, MSA is a very powerful tool. It shows America (at least South) as a pretty pristine area in several places. I think it looks by far better in terms of conservation than other parts of the world. That suggest that America may have a huge potential to stay as a global climatic ecosystem.	Should we do such a comparison if the message at the end is really so strong? Is that not part of the Global Assessment?
Carlos Alberto Arnillas		227			Not clear the aim of this section. To present a concept for the analysis, will be better to move this ideas to the beginning of the section 5.3. In general, the concepts used to discuss the global scale analysis could be presented there if needed, and summarized in a box.	The idea is to go beyond explaining a concept and give cross-scale real examples where B&EGS are being affected.
Carlos Alberto Arnillas		254			I like the idea of this section. An important topic to discuss could be which are the global scale processes that can be affected by large scale local transformations. I think the two most important ones are carbon regulation and climate regulation, but crop production can be as important. This are not the most locally important EGS (water regulation in the head water of dry areas for instance). This disconnection is an important thing to remark since it can explain why local priorities and global ones are often not aligned.	The wording has been improved to reflect the comment.
Carlos Alberto Arnillas		254			The section focus too much in the Amazon forest: What about the forested areas in Canada and US? Central America? What about the carbon stored in the tundra and high-mountain areas? If those carbon stocks are not important, does it mean that there is no responsibility to prevent their emission?	This section is specifically a cross-scale example of the Amazon forest

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		254			Moving away from carbon stocks: What about the crop production in Argentina, Brazil, US, Bolivia ... ? How important are in the global food security balance?	Part of this is included in the previous section of the chapter.
Carlos Alberto Arnillas		357		359	Benefits also depend on the location, since they depend on how people use and perceive the ecosystem.	We already acknowledge the heterogeneity of social groups and local knowledge.
Carlos Alberto Arnillas		370		370	Important to comment about how representative is that sample	When writing the narratives of the review all references will be explicitly made.
Carlos Alberto Arnillas		376		381	For the Economic Assessment of Climate Change Impact on Peruvian Economy we explicitly model the change in biomes caused by climate change, the reduction in area forced by land use change, and the combine impact of these two ones in a) water availability for energy production, b) livestock productivity, c) impact on infrastructure, among others. In the oceans, the impact of changes in fish production was assessed. A summary of the results of the project has been published by IBD and CEPAL. ( <a href="http://repositorio.cepal.org/bitstream/handle/11362/37419/1/S1420992_es.pdf">http://repositorio.cepal.org/bitstream/handle/11362/37419/1/S1420992_es.pdf</a> )	Thank you for your comment, this is valuable feedback.
Carlos Alberto Arnillas		381		383	I don't think a model that represents a change in biodiversity actually represents a change on the provision of the services: It may represent a change in an ecosystem process, and a risk of disruption for the provision of services (e.g. the loss of 50% of the species in a grassland is mostly relevant if the species actually lost are the ones that the livestock can eat. In that sense, and assuming equal probabilities of being useful, there is a 50% chance of loosing the key species in the system).	I also agree. I do not see how this observation fits what is written between lines 381 and 383. We will check again.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		394		399	This conclusion seems extremely linked to published papers. But governments and stakeholders usually use gray literature. For instance, how many REDD reports exist and provide a baseline for local management?	Yes, so far we have focused on peer-reviewed literature. Next steps will consider gray literature and such observations will be taking into account.
Carlos Alberto Arnillas		400		402	The fact that the decline is less pronounced in conservation-base scenarios can be seem as forced by the model intrinsic constraints, so uninformative. Maybe reword this conclusion?	We need more clarification about "intrinsic constraints" that make results uninformative. Our task is to review the literature available and conclude what we found and not to discuss models characteristics and if the results are informative or not.
Carlos Alberto Arnillas		403			where?	These are the general trends of the studies reviewed so far and we will note if these are region-wide trends or more locally relevant.
Carlos Alberto Arnillas		422			I will be cautious about this statement. I agree that there are not so many, but not so sure that a thorough research has been done, or even can be done. The main reason is that the most participative the organizations are, the most focus on local needs and the less interested in publishing the results in papers. Since there is an unavoidable bias towards peer-reviewed documents (widely available+easier to trust thanks to the peer-review approach), all that experience can get lost.	Yes, we will try to make our detailed search of gray literature.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		422			<p>A couple of processes I'm aware of that could be relevant: 1) there was a research project analyzing future water availability in Lima, Peru, and -as far as I remember, they were discussing different scenarios to find a better solution for water management. Here is a link, but may be better to discuss with the project leader (Liliana Miranda) (<a href="http://www.iied.org/recognising-risks-what-do-people-lima-think-about-climate-change">http://www.iied.org/recognising-risks-what-do-people-lima-think-about-climate-change</a>; <a href="http://www.chance2sustain.eu/fileadmin/Website/Dokumente/Dokumente/Publications/Publications_Sept_2012/Chance2Sustain_-_Policy_Brief_5_-_Do_Inclusive_Scenarios_Contribute_to_Reduce_Water_Vulnerabilities_Facing_Climate_Change_in_Metropolitan_Cities.pdf">http://www.chance2sustain.eu/fileadmin/Website/Dokumente/Dokumente/Publications/Publications_Sept_2012/Chance2Sustain_-_Policy_Brief_5_-_Do_Inclusive_Scenarios_Contribute_to_Reduce_Water_Vulnerabilities_Facing_Climate_Change_in_Metropolitan_Cities.pdf</a>). 2) In San Ramón, Perú, Angeles La-Torre, Angeles Arellano and myself promoted an exercise with local people to help them prioritize some training. Despite building an scenario was not the priority, we used a very simple approximation to an scenario building ("what do you think can be done in different parts of the area?") as a tool to understand what could be perceived by them as the most important learning requirement (<a href="http://www.amnh.org/content/download/141373/2285449/file/LinC4_PartSoci.pdf">http://www.amnh.org/content/download/141373/2285449/file/LinC4_PartSoci.pdf</a>). What is the minimum requirements for an escenario exercise to be included in the analysis.</p>	Thank you for your comment, this is valuable feedback.
Carlos Alberto Arnillas		430		433	<p>The REDD projects are a good example of lots of effort invested in making models and scenarios to take decissions on the field. A few years ago these models were very popular, but no idea if they are still as popular or not.</p>	We will considered such initiatives (e.g., REDD) for discussion of the relation betwenn planning, management, policy and scenarios of B&EGS

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		434			This full section is interesting but requires for my perspective a stronger link to the key concepts presented and used in the framework. Key characteristics of the habitat, key processes in it (including also teleconnections, telecoupling), most important services provided at local and global scale, main sources of present threats and how they can change in the future. An assessment of the amount of information available for them is also essential. Because some of these topics are strongly linked to other chapters, it might be useful to put that information as independent documents for each spatial unit, and keep very small tables with the critical information relevant to each chapter in each of them.	Thank you for your comment, this is valuable feedback. We have coordinated with the CLAs of other chapters to offer to them the information contained in Chapter 5 for inclusion in theirs. Additionally, we have revised the approach in the focal analyses to use figures based on the IPBES conceptual framework to better integrate the important points of each Unit of Analysis with the biological aspects of the unit, benefits to people, and drivers.
Carlos Alberto Arnillas		434			It could be better to provide an idea of the spatial partition of America (units of analysis?) to understand what is covered and what is not, that way governments and readers can get an idea of what is unknown or not presented. For instance, seems that Central America, Chile Western Andes, large portions of North America are totally not covered. In the case of Peru, it means that the area where 80% of the population live is out of the focus of the analysis.	A map of the places we are considering in the focal issues sounds interesting! However, we cannot cover each unit in each subregion due to page limits, available information, and constraints of the overall IPBES schedule.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		434			<p>The criteria to select the areas is not as clear. It seems as it is heavily bias to biodiversity and available information, but the only reason presented is to contrast the implications of the archetypical scenarios. A methodological approach/interest is really interesting and can provide references to government about how to do their own local analysis, but in that case, a better representation of the different difficulties they may face could be more important: for instance, how to approach an area with lack of information vs. an area plenty of data; how to approach small and highly sensitive units vs. how to assess extremely large areas with a very large amount of stakeholders; biodiversity hotspots vs. ecosystem services hotspots vs. crop production areas; uncertainty related to climate models vs. related to internal mechanisms of the ecosystems. The tasks, exercises, and conceptual approaches to face each of them is totally different and may be very useful to show how to translate the global scenarios into local ones, and the particular conclusions that can be obtained from each one. The present examples could cover a wide range of these options, but the examples are not framed in this way, so the message that could exist in that sense is lost. If methodological reasons are not the key ones, please, explain the key criteria used.</p>	<p>Thank you for your comment, this is valuable feedback. We have coordinated with the CLAs of other chapters to offer to them the information contained in Chapter 5 for inclusion in theirs. Additionally, we have revised the approach in the focal analyses to use figures based on the IPBES conceptual framework to better integrate the important points of each Unit of Analysis with the biological aspects of the unit, benefits to people, and drivers. The many suggestions you have regarding possible comparisons is fascinating, but beyond the scope of this assessment. However, it will give me a multitude of research ideas to explore! You may be hearing from me for collaboration!</p>

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		466			W. Buytaert have been working several papers about the importance of high mountain ecosystems (e.g. paramos) in water regulation. Many comments about tundra ecosystems are relevant to mountain ones also, but the mountain ones seems more directly linked to me to the people living around them, mostly when the surrounding areas are dry and rely partially or totally on the water regulated there.	The suggestion of including Páramos has been made by other reviewers. We will include this consideration in conjunction with tundra if possible.
Carlos Alberto Arnillas		527			It is not clear why a FW archetype will imply more CO2 release than expected under similar GHG emission scenarios. Most of the tundra in America occurs in Canada and US. Under FW scenario developed countries are supposed to extreme their benefits while developing ones are expected to suffer from a depleted resources. If that is the case, Canada and US would be able to invest more on science and technology that eventually can help them prevent the emission of methane or transform it into CO2, for instance. Similar points can be made to the other comparisons among scenarios, where sometimes seems as if a simple gradient of "better"->"worst" has been applied.	Excellent points, but I think the underlying confusion on this lies with me. I did not clarify that under the FW it is assumed there will be increased GHG emissions due to relaxed regulation and less societal concern over those emissions and their sources. I will revisit this discussion to make it clearer.
Carlos Alberto Arnillas		538		539	Another example of the "better"->"worst" scenario. A NSP scenario will require optimization of the best areas to produce crops, but it is not clear where are those areas going to be. It may be the case that the very low diversity areas already threatened in the tundra, which are already doomed due to climate change, could became the best option to increase the global crop production. In that case, PR could imply a lower risk for the tundra than the NSP scenario.	The scenario archtypes of Hunt are, in fact, a better to worse classification. However, we will revisit the discussion to see if we can better nuance the archtypes.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		554			Why the 60% loss of "Wetlands" is relevant here if the section focuses in mangroves?	In various classification schemes, mangroves are considered a subset of wetlands (coastal wetlands).
Carlos Alberto Arnillas		560		564	The regional values do not differ too much from the global ones. Why "notable"? Also, are regional drivers different from the global ones?	Quite right. The text will be adjusted to present the information more factually and the reference to "notable" will be deleted.
Carlos Alberto Arnillas		601		607	Sounds vague. If the important thing is to highlight a good practice example, could it be better to move it to a table or annex with all the best examples on different aspects of the scenario building, threats assessments, etc?	Excellent suggestion. We will consider making this a "box" presentation with a listing of the best practices, rather than the summary statement that now appears.
Carlos Alberto Arnillas		615		640	This is a more general comment, but here is a good example: There should be a table describing clearly the assumptions of each scenario, the assumptions of the models used to constraint the different variables in each scenario and the conclusions obtained by the model. If that is the task of another chapter, then it should be clearly referred to it and a table summarizing the key components should be presented here. Each scenario tells a story, but the consistency of the story is critical to make the document reliable, and using assumptions as conclusions of the model can lead to serious problems in the analysis.	The comments are valid on a fine scale and without page limits, but categorizaation of scenarios is necessary for dealing with 450+ scenarios; the Hunt and van Vuuren analysis approach was agreed to by the LDR, Global, and other three regional assessments at the Second Authors Meeting. The discussion of the archetypes are going to be moved to Chapter 1, but we will suggest to those CLAs that they include the assumptions and underlying criteria on which the archetypes are based.
Carlos Alberto Arnillas		727		733	How NSP manage to reduce the impact on crop surface? See comment about lines 615-640	Again, the discussion on archtypes will be moved to Chapter 1 and we will convey this comment to the CLAs. Nevertheless, the point of the comment is well taken that we need to provide a bit more detail as to the underlying assumptions of the archetypes.



Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		787			We found an expected increase in TDF in tropical Andes due to climate change. See: (1) Tovar et al. 2013 Diverging responses of tropical Andean biomes under future climate conditions. (2) For land use transformation under different land use scenarios in the Andes see Tovar et al. 2011 Regional Scenarios of Biodiversity State in the Tropical Andes and (3) Arnillas et al. 2008 Validation and diffusion of the GLOBIO methodology in the Andean region. For a national level analysis including biomes redistribution and land use change see: (4) Arnillas et al. 2015. La economía del cambio climático en el Perú: dotación de recursos naturales renovables. Banco Interamericano de Desarrollo, Monografía No. 263 (MG-263). Washington DC.	Interesting set of documents thank you, we are going to check them and include more information.
Carlos Alberto Arnillas		815			The two year recovery period of aquatic mammals... where is the citation? If that the time needed AFTER a very dry period or more like a general criteria? Is this dry period referring to a more than expected dry season (increase of seasonality) or an overall water availability for the year? This is relevant because some models climatic models predict an increase in overall water availability but an increase in seasonality.	We will check for a specific reference and adjust accordingly.
Carlos Alberto Arnillas		823			Move this paragraph before the one related to dry and seasonality	Noted and completed.
Carlos Alberto Arnillas		827		829	Comment out of context?	This will be deleted.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		830		837	What kind of model is? For instance, CLUE uses this values as an input to distribute them. In other words, is the distribution of pasture and cattle ranching vs. crops vs. other activities an assumption of the model or an actual response of the model? If a response, which are the variables controlling the relative amount of them? Global demand, national GDP?	It is important to do these analyses and to dig deeper into the models, because it could be controversial for the governments.
Carlos Alberto Arnillas		838			How do these local densities relate to the global scenarios? For instance, we can predict that a FW and NSP could imply low population density: in the second case, because a global agreement and organization that find that this particular area is critical for environmental services provisioning. FW can cause the same, for instance if a massive economic crackdown reactivate the guerrilla movements in the area.	The presented case is specific for Colombia; it does not link implications to level of global scenarios. Should be that to analyze other cases and newly analyze this scale.
Carlos Alberto Arnillas		856			What about precipitation? My guess is that the rupture of water cycling by deforestation could be by far a larger problem in the Amazon than the temperature, but precipitation has been harder to model. Is there a consistent signal in the newest models?	We might analyze the climatic models that exist taking into account a rainfall factor.
Carlos Alberto Arnillas		866		877	this two local studies seems a bit out of context, because they are in the middle of more global patterns. Maybe reorganize/systematize the table?	These paragraphs will be organized.
Carlos Alberto Arnillas		876			It will be important to explain if Malhi et al.'s paper described lost will be related to climate change, land use change, or both	Thank you for your comment, it is valuable feedback.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		884			J. Escobal published a study showing a hump-relationship, in the southern area of Peruvian Amazon forest. The drop at the end of the curve seemed to be related to more access to different resources (being able to work as a (moto-)taxi driver for instance, opening a store, etc.). Probably, the more resources a family can get the more options they could have. Extremely wealthy people can either deforest large amounts of forest or have other totally different income sources, or even both. Because the capacity to decide is related to income and infrastructure, a territorial approach, as suggested by Escobal et al. (2015. Linkage to Dynamic Markets and Rural Territorial Development in Latin America) can be very useful to build scenarios and understand how local and global processes interact.	Thank you for your comment, it is valuable feedback.
Carlos Alberto Arnillas		904			What is the Project COBRA? Why is it so important? The experience seems very interesting, but not sure why is relevant the title of the project. In general, this and other paragraphs should be better organized to provide a clear distinction between what models predict about the region and what scenario building exercises suggest that may happen.	The importance of mentioning the name of the project is for the approach, unlike to most of models and scenarios, in the above mentioned project this shows that the multi-scale is possible considering the stakeholders and indigenous communities into construction of scenarios
Carlos Alberto Arnillas		936		947	Is this a plan or it is actually happening right now?	We will clarify this.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		948		950	Nice idea. It will be important to distinguish carefully the assumptions of the models from the actual results in the models. Maybe the scale at which they work could be presented from top to bottom for instance, with top models being the global scale analysis and moving down to more local exercises. Thickness of arrows linking levels could represent the proportion of papers of a small scale actually using a more global one.	Thank you for your comment, this is valuable feedback.
Carlos Alberto Arnillas		951		954	This exercise is interesting, but seems very Brazil-oriented. A more balanced perspective will be important.	Our Amazonia discussions are being re-written and expanded.
Carlos Alberto Arnillas		982			The figure is not helpful at all. In fact, the caption is misleading because no trend is shown.	Due to changes in the Units of Analysis, the all Focal Analyses are being significantly revised. We thank you for your comment and will bear it in mind as we revise the analysis.
Carlos Alberto Arnillas		998		1005	The watershed approach is important, but this type of territorial partitioning should be presented before and explained if used or not. Here seems out of context.	Due to changes in the Units of Analysis, the all Focal Analyses are being significantly revised. We thank you for your comment and will bear it in mind as we revise the analysis.
Carlos Alberto Arnillas		1007		1019	This paragraph does not describe future trends.	Due to changes in the Units of Analysis, the all Focal Analyses are being significantly revised. We thank you for your comment and will bear it in mind as we revise the analysis.
Carlos Alberto Arnillas		1020		1033	Lots of interesting comments and ideas, but many of them are not focus on grasslands. (Like the Forest Law in Argentina). The comment that grasslands are being transformed now as forests were transformed before could be included in just one sentence. Despite that wording issue, that statement contradicts a previous one about grasslands being a major historical source for croplands.	Due to changes in the Units of Analysis, the all Focal Analyses are being significantly revised. We thank you for your comment and will bear it in mind as we revise the analysis.

Reviewer Name	From Page	From Line	Till Page	Till Line	Comment	Author Annotations
Carlos Alberto Arnillas		1045			A critical point not discussed in this section is how much cost -in EGS terms- the lost of an hectarea of grasslands. On the other hand, forests seems by far more interesting and useful: Then, if we preserve 10% of the grasslands for conservation and transform everyother piece of land into forest... would that be good?	Due to changes in the Units of Analysis, the all Focal Analyses are being significantly revised. We thank you for your comment and will bear it in mind as we revise the analysis.
Carlos Alberto Arnillas		1127		1132	Is there any good experience about linking those two levels of management?	Typically in the United States these two levels are fairly independent. The Brown study crosses many units of government.
Liliana Bravo-Monroy					Figures 5.9 - 5.13 are not cited into the text neither the RCP8.5 scenario.	We will provide citations or remove.
Sophie Avila					A general comment: This chapter need to be related to previous chapters, trends are estimated using the information provided in previous chapters?	We will work on the harmonization process at the SAM
German IPBES Coordination Office and national scientists					Please provide cross check and coherence of references with all sources mentioned in the text.	We will check coherence
CONABIO		774			The information presented on line 774 on dry forest, is exactly the same quotation line used in 1514 of Chapter 3, 2010. Update information and prevent information (identical) repeat.	Agree we will check for repeated information.