External review of the first order draft of the land degradation and restoration assessment
30 May - 11 July 2016
Chapter 7

Reviewer Name	Chapter	From Page (start)	From Line (start)	To Page (end)	To Line (end)	Comment	Response (from Chapter 7)
LI Qingfeng	0	0	general comment on FOD LDRA			1, The Report in overall is too academia, too detailed in scientific exploration and descriptions. In consideration of the principal aim “to facilitate the implementation of the National … and the “Inter-governmental” nature of the organization, the Report has to be more “publicly explicit”, rather than “scientifically complicated”. If the Report is to be read by the policy makers, and to draw attentions from the public, the content is to be simplified and the volume greatly reduced, one third is more than enough.	Thank you. This chapter has been adjusted in a more policy oriented, less complicated academic text.
LI Qingfeng	0	0	general comment on FOD LDRA			2, An Executive Summary and a List of Acronymns and Abbreviations are necessary.	An executive summary and a list of Acronymns and Abbreviations has been added to the document
German government	0	0	general comment on FOD LDRA			We believe that the first order draft of the IPBES thematic assessment on Land Degradation and Restoration generally has a comprehensive and scientifically sound structure and we congratulate the authors for this achievenment. This is a first order draft however, and, therefore, we hope that our comments will be useful for the further development and maturing of this assessment so that in the second order draft scientifically strong and comprehensive key messages can emerge. We very much look forward to the second order draft of this important assessment.	Thank you for taking the time to review the full report. We appreciate your feedback and the constructive comments you offered thereafter.
German government	0	0	general comment on FOD LDRA			We request the co-chairs of this assessment to ensure that the general comments listed for this assessment are made available to the CLAs and LAs of all 8 chapters. Reason: Cross-referencing between the 8 chapters of the FOD sections by chapter authors should help to (1) avoid repetition; (2) use the same terminology/definitions, (c) strengthen the logical connection between the 8 chapters and, thus, (d) strengthen the overall storyline of the assessment.	Thank you, general comments have been distributed to all chapters. And in the Second Author Meeting (SAM) in Bonn, chapter boundaries were defined; glossary has been made; common drivers and ES were addressed from different chapter perspectives . Repetitions have been eliminated to the extent possible as some overlap was necessary to make the chapter a a stand alone document.
German government	0	0	general comment on FOD LDRA			It needs to be critically highlighted that chapter 1 needs to provide a sound basis on the scope of this assessment and on the key definitions/terminology used throughout the 8 chapters. This should help to develop a strong storyline throughout the chapters. Chapter 8 on decision support should reflect more strongly on the findings of the previous chapters and also discuss policy support tools. Currently, chapter 8 remains quite general. All in all, the chapter authors should analyse the findings of the other chapters of the assessment and cross-reference to these. As we are discussing a thematic assessment which should also add value to the IPBES global assessment (D2c), we strongly encourage the authors of the 8 chapters to also analyse the relevant findings emerging from the four regional IPBES assessments.	Chapter 1 has been revised with key definitions and terminology added. Relevant cross-chapter references are included in chapters 7.
German government	0	0	general comment on FOD LDRA			A major cross-cutting issue throughout the document is that land degradation and restoration are being "lumped" too much together, without considering that each of these measures has different drivers, processes etc. Discussing both aspects separately and with a stronger biodiversity and ecosystems perspective would add value to the document.	We have introduced and clarified the difference and changed the text where appropriate (e.g., not avoiding LDR, but avoiding LD and stimulating R)
German government	0	0	general comment on FOD LDRA			The assessment should provide balanced scientific-based opinions and not overemphasize certain opinions, thereby possibly paying less attention to other perspectives. Therefore, the arguments in a chapter should not build just around one or two opinion-based citations.	We used mutiple sources but looked speficically for data/evidence-based references, not for opinions or perspectives.

German government	0	0	general comment on FOD LDRA			Please ensure that all 8 chapters will start with an executive summary that includes a list of key messages and their degrees of confidences, based on the Platform's confidence framework in the Platform's guide on assessments (IPBES/4/INF/9). Such key messages will be extremely relevant for the user groups of this assessment and most certainly for identifying policy options.	An executive summary where the key messages are highlighted and the degree of confidence indicated has been included.
German government	0	0	general comment on FOD LDRA			Provide an annex for this assessment that lists all the acronyms, abbreviations and key terms (including their definitions) used in the assessment.	We have added a list of abbreviations and glossary items. Key terms used by many chapters were also defined in Chapter 1. A full glossay has been added to the final report.
German government	0	0	general comment on FOD LDRA			Ensure consistency in the wording and the use of the key terms provided in section 1.1.2 throughout the document (all 8 chapters) of this assessment. Please also ensure that the wording of definitions provided in section 1.1.2 corresponds to the wording of these definitions as outlined in Decision 3/1, Annex VIII.	We have added a list of abbreviations and glossary items
German government	0	0	general comment on FOD LDRA			Ensure that perscriptive language is not used.	Text has been checked for prescriptive language and replaced with "if…then" phrasing.
German government	0	0	general comment on FOD LDRA			In the further development of the assessment report, please also refer to other IPBES work programme items that are thematically linked to this assessment (e.g. "capacity development (D1a/b)"; "indigeneous and local knowledge (D1c); "regional assessments (D2b)"; "global assessment (D2c)"; "pollination, pollination and food production (D3a)"; "scenarios and modeling (D3c)"; "policy support tools (D4c)".	Cross-reference to the IPBES policy support tools has been made.
German government	0	0	general comment on FOD LDRA			Regarding chapter 1 and in chapter 8: highlight the relevance of the LDR assessment for the Strategic Plan for Biodiversity 2011–2020 / Aichi Targets (specifically goal 15), and the SDGs (and especially SDG 15).	The Aichi targets and the SDG were addressed in synthesis tables in chapter 8, Section 8.4.
German government	0	0	general comment on FOD LDRA			Outline in chapter 1 and in chapter 8, how the land degradation and restoration assessment will deliver to/support the IPBES global assessment on biodiversity and ecosystem services (D2c).	No specific action taken in the chapter text. Chapter 1 deals with overarching issues, such as this one.
German government	0	0	general comment on FOD LDRA			The terms "sustainable land use" and "sustainable land management" are somewhat being used interchangeably. Please check the definitions of both terms and if necessary, please align the use of these terms accordiningly throughout the assessment report (all 8 chapters).	Included and used as defined in the glossary
German government	0	0	general comment on FOD LDRA			Throughout the document the terms "reduction" and "mitigation" are being used. Please provide information about the technical difference between both terms.	This has been addressed in the glossay and used as such
German government	0	0	general comment on FOD LDRA			Regarding figures, tables, photos/images: Ensure in the second order draft and the associated SPM that the quality of all visual materials should be high.	Visual materials have been improved to the best quality possible through using a specialized cartographer to redraw the figures and obtaining high quality photos.
German government	0	0	general comment on FOD LDRA			Information and data targetting the same or similar issues (e.g. on urbanisation/global extent of land degradation, deforestation rates ...), are outlined in the various chapters of the report, partly by refering to different statistical sources. We strongly encourage you to develop comprehensive chapters-spanning tables and figures on similar issues in order to align information throughout the 8 chapters so that strong key messages can emerge.	A set of cross chapter drivers, trends is used, including policy instruments.
German government	0	0	general comment on FOD LDRA			Ensure for all 8 chapters that data and other facts (numbers, percentages, statements, citations) are provided with at least one reference.	References have been provided and added where they were missing before.
German government	0	0	general comment on FOD LDRA			Not all references cited in the text are to be found in the reference lists of the chapters. Please critically cross-check.	All reference material has been added to the referece manager to ensure correct citations.
German government	0	0	general comment on FOD LDRA			We have acknowledged that professional language editing will be taken care of at a later stage. We have therefore restricted ourselves to providing comments only on the thematic contents of each chapter. Therefore, please ensure that language editing is taken care of.	OK. Text has been editted for the last draft.
Hamid Custovic (SPI)	0	0	general comment on FOD LDRA			Perhaps excusable in a FOD, but the majority of the text needs substantial editing to improve English expression and ensure clarity.	Although text will be edited is a later stage, initial editing has been carried out by the coordinating lead

Hamid Custovic (SPI)	0	0	general comment on FOD LDRA			The document length should be substantially reduced, so that it is readable for the intended audience of policy-makers. Delete the text that does not relate directly to the topic of assessment of land degradation. Condense the explanatory text and provide references for further detail.	We aimed to be as concise as possible in the chapter revisions.
Hamid Custovic (SPI)	0	0	general comment on FOD LDRA			The report title is misleading. The assessment is not about land degradation but rather about biodiversity loss, because land degradation has been defined here as "processes that cause biodiversity loss and loss of ecosystem functions and services". Ideally the title should be reworded to reflect the content.	Title used was given to us in the Scoping Document, which was approved by IPBES Plenary (please see annex VIII to Decision IPBES-3/1). We are not in the position to change the title.
Hamid Custovic (SPI)	0	0	general comment on FOD LDRA			We encourage the authors to elaborate on how land degradation/restoration can seamlessly integrate agriculture, ecosystems services and biodiversity.	This has been addressed in the final version of the assessment report.
Hamid Custovic (SPI)	0	0	general comment on FOD LDRA			It would be helpful if the report used the language of DPSIR; this could help to minimise the repetition between chapters, if authors can recognise that for example chapter 4 should be confined to pressure and state, and not also discuss drivers (ch3) and impacts (on ecosystems - Ch 5), and human responses (ch 6).	The assessment is build around DPSIR. Chapter 6 and part of 8 addresses the response part. Drivers, Pressures, State, Impact Response
Hamid Custovic (SPI)	0	0	general comment on FOD LDRA			Not all references cited can be found in the reference list. This needs to be taken care of.	All literature has been added to the referece manager to ensure correct citations.
Hamid Custovic (SPI)	0	0	general comment on FOD LDRA			The second order draft should include key messages and their level of confidence. This is currently lacking.	Executive summary has been developed, including level of confidence
Hamid Custovic (SPI)	0	0	general comment on FOD LDRA			Some item are repeated on introduction of different chapters.	OK. Some overlap in intro is OK, as long as being dealt with from a specific chapter angle.
Peter Onorato	0	0	general comment on FOD LDRA			Considering IPBES' role as the interface between science and policy, we consider it critical that the reports clearly communicate the key findings, implications and recommendations within chapters so that they can be readily used by policy makers. To assist this there may be value in the chapters having a uniform structure, similar to that in the Executive Summary of the IPCC Chapters. In addition to including an executive summary, the following headers might help focus the authors' attention to ensuring their chapters are targeted to policy-makers as opposed to an academic audience: – Executive Summary 1. Key Findings 2. Critical Implications 3. Gaps in Knowledge and Data 4. Recommendations 5. FAQ A clear and consistent structure, along with key findings and recommendations, could be of great benefit to policy makers.	All chapters have an executive summary. The SPM addresses all other items.
Peter Onorato	0	0	general comment on FOD LDRA			Some of the Chapters (particularly Chapter 2) competing scientific views on certain issues are presented, almost debate-like, one after another. While it's important to understand the current state of the science, we do not think that IPBES Assessment Reports should be used as a platform to advance contested academic theories as this diminishes the report's ability to be a clear and concise communication document. In order to best bridge the gap between science and policy, and to provide policymakers with clear guidance, Assessment Reports should present the latest knowledge and make recommendations based on this. Policy makers generally don't have the depth of knowledge to balance contested scientific theories and will rely on IPBES' work to clearly identify the best policy options available	Our assessment will highlight contested ideas/findings, and report those using the IPBES Confidence terms. The arguments presented in this draft were significantly reviewed, edited and reduced in the subsquent versions of the report

Peter Onorato	0	0	general comment on FOD LDRA			The SDGs constitute the new global paradigm for sustainable development. As such, we consider there to be value in drawing more links between the SDGs and IPBES' work within the reports. Again, this will help policymakers effectively prosecute the case for improved biodiversity policies, and help identify where clear links exist between biodiversity policy and other issues including development and broader environmental outcomes, strengthening the case for biodiversity policy priorities.	Relevant SDGs have been addressed in a synthesis table Section 8.4. and also features strongly in SPM.
Ayman Batisha	0	0	general comment on FOD LDRA			The entire report should be homogenously arranged, logically build and fully integrated with no inconsistency, disharmony or overlapping within its chapters and sections. The titles of chapters and sections are generally too long to be professional.	This was addressed at the Second Author meeting; portions off text were excanged or deleted to eliminate unnecessary overlap. Section titles were also edited to reduce length.
Ayman Batisha	0	0	general comment on FOD LDRA			Number of sections still requires more work and careful revision. As examples, in Chapter 1, There should be more sections to clarify 1.2 What constitutes Success in the restoration of degraded land?; 1.3.1.1 until 1.3.1.5 should be corrected; in Chapter 2, the classification of Natural and social science and the law, Human sciences, and Social inequities should be justified (or correct); in Chapter 3, how "3.6. Food security through tackling land degradation" is related with the direct and indirect drivers of land degradation and restoration; in Chapter 4, most of sections deals with multiple drivers and Key Human Drivers, although the reader expect that "the status and trends of land degradation and restoration and associated changes in biodiversity and ecosystem functions" will be analyzed; in Chapter 5, the reader expect that there are some sort of comparisons between the case of land degradation and the case of land restoration; in Chapter 6, Responses to avoid land degradation and restore degraded land, the reader expect that there is an Environmental assessment evaluation and a full Economic and financial mechanisms, how can it be applied in the mentioned Case studies and how he/she can estimate the total cost in his/her Case study; in Chapter 7, Issues not being raised include how soft computing techniques such as Fuzzy Logic and Neural Networks can develop scenarios of how land degradation and restoration could evolve in both Near-term and Long-term; in Chapter 8, the reader expect that there a focus on soft computing techniques, and the possible application in the fields of the decision support systems used to address land degradation and restoration based on a well-defined Environmental indicators.	The full assessment has gone through multiple revision rounds and streamlining across chapters. Better linkeages between chapters have been developed in the final draft.
Ayman Batisha	0	0	general comment on FOD LDRA			The entire report should be homogenous and integrated with no interference within its chapters and sections. As a quick example, the first section in Chapters 1, 5 & 6 is Introduction; whereas in Chapter 2 is Executive summary: Key Messages; in Chapter 3 is Purpose and value of chapter; in Chapter 4 is Introduction to the degradation process; in Chapter 7 is Table of Content, Executive Summary (Key policy messages), At the global level, At the local level (only where different from global messages); and in Chapter 8 is Executive Summary. Similarly, the end section in Chapter 1 is 1.3 Case studies of successful land restoration; in Chapter 2 is Conclusions - Working with perceptions as a policy tool; in Chapter 3 is 3.7 References Cited; in Chapter 4 is 4.6 Conclusions, 4.7 Glossary, 4.8 References; in Chapter 5 is 5.5 Remaining Challenges; in Chapter 6 is 6.4.4.2 Case studies, 6.5 References; in Chapter 7 is 7.4.4 New approaches: Visioning LDR for Sustainable Futures; and in Chapter 8 is 8.4.3 Identify and prioritize responses to reduce trade-offs and/or enhance synergies to address land degradation and/or develop restoration.	The full assessment has gone through multiple revision rounds and streamlining across chapters. Consistent structuring across chapters has been developed as well.
Ayman Batisha	0	0	general comment on FOD LDRA			Numbers of topics still require work and revision, as examples, please compare "3.3.6 Fire regime change" with "4.3.6 Fire regime change", and "6.3.1.5 Fire regime change", also, compare "3.4 Climate change as a threat multiplier of degradation drivers", with "4.2 Cross cutting degradation processes common to multiple drivers", and "6.3.1.10 Climate change as a threat multiplier".	The full assessment has gone through multiple rounds of revisions by authors and co-chairs. Please see the final draft of the assessment.

Ayman Batisha		0	0	general comment on FOD LDRA			There should be examples/chapter to clarify how the biogeochemical cycle (carbon, oxygen, nitrogen, phosphorus, sulfur, calcium, rock and water etc.) through both biotic (biosphere) and abiotic (atmosphere, hydrosphere, and lithosphere) compartments of Earth can cause land degradation and restoration. Special attention should be emphasized to the human-caused cycle of atrazine, which may affect certain species. Land degradation and restoration should be assessed in the light of Global Changes; Global Warming; Global Sea Level Rise, and Global Ocean. Land degradation and restoration should be assessed into two categories which operates at different time scales: the biological – physical, (Near-term) and the geological, (Long-term). Land restoration opportunities, planning, economics, implementation constraints, and limits should be defined.	Land restoration decision making opportunities and limits and instruments are hightlighed/sythesized in section 8.2 and 8.3. In this chapter , we deal with scenarios and modeling for land degradation and all of the elements mentioned are encomppasses in our discussion, including different time scales, geographical scales, and opportunities.
Ayman Batisha		0	0	general comment on FOD LDRA			Assessment on land degradation and restoration should emphasize on multiple Land-use Categories; Forest Land, Cropland, Grassland, Wetlands, Peatlands, Settlements, and most important and significant Arid and Semi-arid land. Assessment on land degradation and restoration should emphasize on Policy Oriented Research. Human Settlements, Industry, and Infrastructure in both Urban and Rural Areas should be surveyed. Cross-cutting issues such that Agriculture, Water, Energy, Industrial Processes, CO2 Transport, Injection and Geological Storage, Waste Generation, Composition, Incineration, Treatment, Discharge, Disposal and Management should be focused.	We have discussed the relevant decision making strategies for as many landuse categories as we can including rangeland, cropland, forest, wetland and built-up areas
Ayman Batisha		0	0	general comment on FOD LDRA			Research related to the Science of land degradation and restoration should be emphasized on. Assessment on land degradation and restoration generally deal with multiple meanings of fuzzy concepts, so it is strongly recommended to add chapter/section to provide General Guidance to the subject of how applying fuzzy concepts in the context of land degradation and restoration using soft computing techniques. The scope of soft computing covers the	Thank you for this comment. You present a valid point, but it is not relevant for Chapter 6, under the agreed upon scoping. Chapter 2 provides further details on "fuzzy concepts"
Ayman Batisha		0	0	general comment on FOD LDRA			Atlas of Global, Regional and local land degradation and restoration Existing, Projections and Predictability should be annexed.	We tried to integrate all relevant information within the body of the text, so as to not overload the final report with extensive back matter.
Anna Luise		0	0	general comment on FOD LDRA			The Chapters are disomogenous. Their structure is different as well as the degree of deepening of the topics which, in general, remains too weak. Some general concepts and the conceptual framework itself are repeated too many times with no real added value in the various Chapters. Even if all concepts should be based on sound scientiific data and information, too many references could generate some confusion. The report should take into consideration its utilisation, among all, in policy making processes, and adopt an appropriate language. Some overlapping, for example for Chapter 7 and 8. On the contrary, some citations are disomogenous.	We solved inapproriate overlap between chapters and within chapters for the final draft.
Meredith Root-Bernstein	**Chapter 7**	0		general comment on Chapter 7			I like this chapter a lot, the conclusions are very clear and helpful. Great work.	Appreciated
Saija Kuusela	**Chapter 7**	0		general comment on Chapter 7			the level of the precision seems adequate here considering the task. Key conclusions can be easily identified from the text.	Noted
Panos Panagos	**Chapter 7**	0		general comment on Chapter 7			The Joint Research Centre Soil Team runs scenarios on soil erosion and soil organic carbon. Regarding soil erosion there are three main type pf scenarions: a) Climate change Scenarios: it is expected that rainfall intensity and erosivity will be increased by 2050 in many Central and Nothern European Countries while mixed trends are expected in Southern Europe due to increase of temperature. b) Land use scenarios: The decrease of croplands and increase of forest may have a positive effect in decreasing soil erosion c) Policy scenarios: The measurements of Common Agricultural Policy (maintenace of grasslands, ecological focus areas) may decrease soil erosion but Biofuel policies may request an increase of land where bionergy crops are cultivated (please note than bionergy crops are more erosive than wheat).	The report conclusions has been included in the soil section. The report from JRC has been extensively references in the chapter.

Panos Panagos	**Chapter 7**	0	general comment on Chapter 7			Much of the text should be re-written taking into account latest developments in the literature. Moreover, leading authors have contacted the Joint Research Centre soil team about the scenarios of soil erosion (water , wind) and Soil Organic carbon. Even if we have provided those datasets, nothing has been included in the current version.	The soil section has been further up dated, and the information assessed
Wang Yujie	**Chapter 7**	0	general comment on Chapter 7			Overall suggestions：Since this chapter is aimed to develop scenarios of future land degradation, explicit scenario simulation methods and results with university are indispensable, however, they are missing in this chapter.	Comments not fully understood. We agree scenarios should be developed with scientific groups, but this is not the task of IPBES and the authors of this Chapter.
Hamid Custovic (SPI)	**Chapter 7**	0	general comment on Chapter 7			We agree: One of the difficulties in having a chapter devoted to scenarios is that, as the authors point out, there are not many models of land degradation and therefore not many degradation scenarios to evaluate. The chapter could therefore also highlight research specific needs regarding models of land degradation to develop necessary degradation scenarios.	Research needs on models and scenarios has now been addressed in the chapter.
M. Y. Yazdandoost	**Chapter 7**	4	107	46	1513	Elaboration of the following points, wherever applicable, would be nice to be incorporated in the chapter: · The Wealth Accounting and the Valuation of Ecosystem Services (WAVES) on natural capital accounting (NCA) for land degradation and restoration, including their potential benefits; · How to measure the landscape assets and flows related services in a region, and how they change through space and time; · How traditional culture can be used beyond conservation and may represent a synergistic framework, to understand nature's stocks, flows and changes; · How traditional information may support Sustainable Development Relevant Goals (SDRGs); for example: Goals: 6,7,15; · How to scale up community lands and resource rights across diverse partners; · How to improve policy on development priorities with respect to environmental processes; · How to promote well understanding of land use change, urbanization, wealth trends and benefits arising through using land accounts; · How investments in nature friendly infrastructures may generate better economic development; However, mainstreaming natural resources into development planning and national economic accounting, including decisions based on natural resources conservation may ensure sustainable development processes.	These questions are interesting and relevant as such. However, this is not the appropriate Chapter to address these, as this is outside of our scope. These questions are addressed as relevent in chapters 5,6, and 8.
Hamid Custovic (SPI)	**Chapter 7**	4	107			Not clear whether these measures are targeting direct or indirect drivers?	The policy measures (executive summary) address both indirect and direct drivers
German government	**Chapter 7**	Executive Sum	107			Provide the degree of confidences of the bullet statements given in the Executive Summary for the global and the local levels, based on the Platform's confidence framework in the Platform's guide on assessments (IPBES/4/INF/9).	Noted and added.
German government	**Chapter 7**	4	125	4	128	Regarding the necessity of "integrated, spatially-explict models", please provide a reference on similar findings identified by the IPBES methodological assessment of scenarios and models of biodiversity and ecosystem services (deliverable 3c).	Has been added to section 7.3.3, second section.
Hamid Custovic (SPI)	**Chapter 7**	4	127			What is meant by "training of institutes"?	This whole section has been rewritten and the relevant part explained; Spatially-explicit, integrated modelling and assessments is a complex matter that require extensive training of institutes assigned for this task. It concerns teams of specialists covering the different components of the nexus

Hamid Custovic (SPI)	**Chapter 7**	4	131			Explain "failure to take into account…" - failure by who, in what context?	It concerns the faillure of the existing assessments to take other demands into accounts such as water demand, fibre and sustainable soils, that increase the competition for land. Text has been edited
Hamid Custovic (SPI)	**Chapter 7**	5	141			Could express proactively: substitue "albeit at certain costs" with "in order to examine the trade-offs".	This message has been removed
German government	**Chapter 7**	5	146	5	155	Regarding the role of scenarios as tools: Also consider the findings of the IPBES methodological assessment of scenarios and models of biodiversity and ecosystem services (IPBES/4/19).	Reference has been made
Marina Rosales Benites d	**Chapter 7**	5	153	5	155	Practically, scenario assessment can help to identify the effectiveness and efficiency of individual measures or in combinations, and assess the cost of policy inaction. They may reduce uncertainty and find road maps to achieve targets. Also, it is vital to project economic potential activities and create new opportunities by restoring ecosystems.	Suggestion included in the text
German government	**Chapter 7**	5	158	6	176	You mention four types of scenarios: "Exploratory scenarios"; "Ex-ante assessments"; "Target-seeking scenarios" and "Ex-post assessments". On page 5 in Figure SPM.2 of the recently approved IPBES SPM on the "methodological assessment of scenarios and models" (deliverable 3c), four types of scenarios are labled as follows: "Exploratory scenarios"; "Target-seeking scenarios"; "retrospective policy evaluation" and "policy-screening scenarios". Please refer to this section of the SPM and expand your discussion on the reason(s) for the use of common and/or different terminology to describe four different types of scenarios, and their succession in agenda setting - design - implementation - review.	Reference made to appropriate 3c chapter, discussion expanded
Wang Yujie	**Chapter 7**	5	169	5	Figure 7.1	the words in this figure cannot be seen clearly	Updated
German government	**Chapter 7**	5	169			Please provide a higher quality resolution of this Figure.	The figures have been updated with higher quality and resolution
Rob J.J. Hendriks	**Chapter 7**	6	178	7	216	Also address the relation of scenarios with models in para 7.1.2.2.?	Added
Hamid Custovic (SPI)	**Chapter 7**	6	180			Delete "over time".	Done
Hamid Custovic (SPI)	**Chapter 7**	6	183			Reword "policy-rich".	This is a common expression for scenarios which also include policy options next to autonomous developments. Rewritten.
Hamid Custovic (SPI)	**Chapter 7**	6	186			Explain what is meant by "indicator baselines".	Done
Hamid Custovic (SPI)	**Chapter 7**	6	187			Reorganise the par to present the explanations for the terms indicator and metric, as they are introduced (they are used differently by different communities).	Indicators and metrics are synonims. Text adjusted accordingly
Hamid Custovic (SPI)	**Chapter 7**	6	188			Indicators (and metrics) for what?	Of land degradation. Text adjusted
Hamid Custovic (SPI)	**Chapter 7**	6	190			Explan "assessment principle".	Explanantion in a footnote has been added.
Hamid Custovic (SPI)	**Chapter 7**	6	201			Explain the context for these selection criteria. Perhaps you used them to identify publisehd studies to include in this review? How did you apply them? Ie Did you choose studies that met any one criterion, or did they need to include all?	These criteria have been served to distinguish relevant from irrelevant publications for this chapter. They gave direction to the selection, not as search strings.
Hamid Custovic (SPI)	**Chapter 7**	7	207		210	Reword for clarity. Does this mean you selected studies of a single large area that had these characteristics and reported these properties?	It gave direction,no more no less, so we are not interested in just a few square meters or hectares.
Hamid Custovic (SPI)	**Chapter 7**	7	218			Land degradation is defined in other chapters as processes (that cause loss of biodiversity…); can "processes" be an "entity"?	A good question. 'Entity' is meant here as phenomenon that can be a state as well as a process. In LDRA Land degradation is dealt with in both ways. Entity has been skipped in response to comment 74
Hamid Custovic (SPI)	**Chapter 7**	7	221			Have you dismissed the World Atlas on Desertification?	No. It has been added

Rob J.J. Hendriks	**Chapter 7**	7	222	7	222	'open a window that allows us to glimpse into future trends' - > Use a more neutral type of language?	Readibility takes its toll
Wang Yujie	**Chapter 7**	7	224	7	224	“actors interacting” or ”factors interacting“, please double check it	Text adjusted
Hamid Custovic (SPI)	**Chapter 7**	7	226			The fact that LD is multidimensional is mentioned three times in these two pars. Rather than repeating the same point, provide some explanation - which dimensions are you considering?	The redundancy has been taken out. Examples of dimensions have been mentioned alrady a few paragraphs above, and preceeding Chapters. They are well known
Panos Panagos	**Chapter 7**	7	232	7	235	Regarding your sentence "To exacerbate the problem, the current attempts to model present and future land degradation patterns (e.g.Pan European Soil Erosion Risk Assessment - PESERA, Universal Soil Loss Equation -USLE) are still inaccurate and disputed (Mantel, Schulp, & van den Berg, 2014). ", I dont' agree (as man others) withi this statement. Modelling is the only way that you can have a baseline and future scenarios. There is plenty of literature debate if the current erosion models can be used for estimating soil loss at contnental or global scale. However, models are the tools which can be used to run climate change, land use change and policy scenarios	Acknowledged. We agree models are the only manner to do that, however, current models haven't been considered accurate enough to make national, continental or global assessments and to track changes over time. In particular this relates to soil properties. Text accordingly adusted
Panos Panagos	**Chapter 7**	7	232	7	232	"integration precludes us". Probably you refer to the scientific community (please rephrase)	Indeed. Adjusted
Rob J.J. Hendriks	**Chapter 7**	7	235	7	238	The contribution of this sentence to the message of para 7.1.3. is not clear. (And biodiversity is listed twice).	That is correct. This selection has been reported in paragraph 7.1.5 under criterium 4. The last sentence has been accordingly deleted.
Hamid Custovic (SPI)	**Chapter 7**		236			Perhaps you mean "operationalizes the assessment of land degradation"?	Adjusted
Hamid Custovic (SPI)	**Chapter 7**	8	244			Development trajectories are integral to climate change scenarios. How then can one assess the impact of the scenarios on development?	Agree, text adjusted
Wang Yujie	**Chapter 7**	8	245	8	248	The fifth and latest assessment report of IPCC was completed in 2014, while the third one which was completed in 2001 is citied in this chapter (Page 8). Why not the latest one?	2001 is referenced in relation to the SRES. Pachuari replaced with IPCC for 2014 refs.
Panos Panagos	**Chapter 7**	8	248	8	248	IPCC, 2001. I think that there are more recent documents (IPCC, 2013) which should be taken into account	see previous
Hamid Custovic (SPI)	**Chapter 7**	8	254			Trends in what?	Specified
Hamid Custovic (SPI)	**Chapter 7**	8	255			Policies for what?	Environmental policies in climate, agriculture, forestry, consumption and water management
Panos Panagos	**Chapter 7**	8	256	8	257	Sentence: "If historical trends continue, about 20% of the increase in agricultural production will be 256 generated by expanding the total agricultural area, leading to a further loss of natural areas". Please find a relevant reference for this.	Sentence in question has been removed.
Wang Yujie	**Chapter 7**	8	270	8	270	attention to format of citation	Adjusted
Brajendra (ITPS)	**Chapter 7**	8	270	270	same line	Sentence starting with a bracket	Adjusted
Hamid Custovic (SPI)	**Chapter 7**		270			What is meant by "common" in this context?	Has been rewritten
Hamid Custovic (SPI)	**Chapter 7**	9	292			Largest in what sense?	Deleted
Wang Yujie	**Chapter 7**	9	294	9	294	add "." after scenarios	Added
Wang Yujie	**Chapter 7**	9	297	9	297	in Table 7.1, Columns 3 and 5 are both "Themes", could they be merged into one column?	Table was deleted in the revised draft
Penny van Oosterzee	**Chapter 7**	9	297			These should be referenced where possible.	Table was deleted in the revised draft
Hamid Custovic (SPI)	**Chapter 7**	9	297			Include a literature reference or website for each scenario.	Table was deleted in the revised draft
Hamid Custovic (SPI)	**Chapter 7**	9	297		Table 7.1	First item: usually abbreviated as MA (to avoid confusion with the Multilateral Environmental Agreements, known as the MEAs).	Changed throughout chapter

Panos Panagos	**Chapter 7**	12	299	14	384	Please add the new scenarios on soil erosion at Continental scale (Europe) that have been developed in the European union regarding soil erosion and Soil Organic carbon. This can fit both In the whole chapter of Soil and especially in the Key Messages. More Information for those future soil degradation scenarios in: - Lugato E., Bampa F., Panagos P., Montanarella L., Jones A. Potential carbon sequestration of European arable soils estimated by modelling a comprehensive set of management practices . (2014) Global Change Biology, 20 (11) , pp. 3557-3567. - Panagos P., Borrelli P., Poesen J., Ballabio C., Lugato E., Meusburger K., Montanarella L., Alewell C. 2015 . The new assessment of soil loss by water erosion in Europe. Environmental Science and Policy, 54 , pp. 438-447.	Thank you for your comment and the valuable information provided, we revised the text and included the information you mentioned, where appropriate.
Hamid Custovic (SPI)	**Chapter 7**	12	299	14		Add some references by R. Lal	Stavi & Lal 2014 and Lal 2015 added, more specific recommendations welcome
Gerardo Ojeda	**Chapter 7**	12	300	12	300	I suggest to add "soil aggregate stability" which could be considered too as indicator of soil degradation. Le Bissonnais Y, 1996. Aggregate stability and assessment of soil crustability and erodibility. I. Theory and methodology. Eur. J. Soil Sci. 47, 425–437.	There are many possible soil properties that can be mentioned. For space limitations we only take a selection of relevant properties for which some information on the present and future is available
Zhengshan JU	**Chapter 7**	12	300	14	384	Chapter 7 discusses is very good, there is one suggestion: as part of soil, the change of the soil salinization should be an important indicator of land degradation. Soil salinization is directly relationship with water, soil, food and ecology in arid or half-arid region. if possible , suggest to be in consideration.	soil salinization has been added as soil property
Wang Yujie	**Chapter 7**	12	305	12	305	"percent point"--> percent points	This sentence has been adjusted
D. Pennock (ITPS)	**Chapter 7**	12	308	12	311	This section needs to be updated to include information from Status of the World's Soil resoruces report.	Has been adjusted. However, this report hasn't worked out scenarios. But an extrapolation of the current trends has been carried up to 2050.
Brajendra (ITPS)	**Chapter 7**	8	308	315	315	Author is suggested to read latest SWSR rport brought about by FAO-ITPS	Done
German government	**Chapter 7**	12	312	12	314	Regarding the issue of absent baseline data: Consider also analysing the relevance of the recently published "Global Soil Biodiversity Atlas": http://esdac.jrc.ec.europa.eu/content/global-soil-biodiversity-atlas	We will consider this, as baseline data suitable for modelling purposes. As such, the Atlas is a current state information and belongs to Chapter 4
Panos Panagos	**Chapter 7**	12	316	12	316	The sentence "A further consequence of this knowledge gap is that scenarios of possible futures are virtually absent" should be rephrased	This section had been rewrittenand text is made more specific.
Wang Yujie	**Chapter 7**	13	316	13	361	something is missing in the four threatens	Text adjusted. Added 4 threats 'per region'
Wang Yujie	**Chapter 7**	12	330	12	330	2,5 to 5 million km2 --> 2.5 to 5 million km2	Adjusted
Rob J.J. Hendriks	**Chapter 7**	13	345	13	353	Would it be justified to add in summary that forests and particularly also pastures are interesting in terms of total carbon stocks?	Forest and grassland information added
Hamid Custovic (SPI)	**Chapter 7**	13	345		347	Soils one scenario is based on an increase of 10% of soil SOC to compensate 30 years of anthrogenic emission. This should be comment in order to stress out the 'bottlenecks ». The 4P1000 scenario might be presented.	As far as we know it is not based on a real scenario analysis, but merely a political aim. We briefly mention this initiative and its feasibility/likeliness
Hamid Custovic (SPI)	**Chapter 7**	13	347		350	Stockmann et al cite directly the meta-analysis of Guo and Gifford (2002). Cite the original source!	Done
Hamid Custovic (SPI)	**Chapter 7**		352			Expand to explain in what context (population,energy, development, policy) increases in SOC are predicted.	Rephrased
Hamid Custovic (SPI)	**Chapter 7**		356			Should "moist" actually be "most"?	Text adjusted
Wang Yujie	**Chapter 7**	13	363	13	363	change "organization" to "organizations"	Text adjusted
Rob J.J. Hendriks	**Chapter 7**	13	366	13	366	Increase of soil organic carbon strorage as key response seems not to be reflected in chapter 6?	This will be discussed with CLAs of Chapter 6

Wang Yujie	**Chapter 7**	14	371	14	Figure 7.2	the words in this figure cannot be seen clearly	Figure should be high resolution
German government	**Chapter 7**	14	371		Figure 7.2	Please provide a higher quality resolution of this Figure.	Figure should be high resolution
Wang Yujie	**Chapter 7**	14	388	14	388	change "has" to "have"	no, it refers to 'a series'
Wang Yujie	**Chapter 7**	15	395	15	395	change "change" to "changes"	yes, indeed
Wang Yujie	**Chapter 7**	15	398	15	399	How could "change in ecosystem extent" be equivalent to land cover change?	Sentence in question has been removed and there is some clarifcation of this term
German government	**Chapter 7**	15	409		Figure 7.3	Please provide a higher quality resolution of this Figure.	Noted
Wang Yujie	**Chapter 7**	15	413	15	413	what does "all land" mean?	We refer to earth's surface not covered by water. And we added a reference (and correct it to about 132 mln km2).
Wang Yujie	**Chapter 7**	15	425	15	427	there are numbers missing in this lines (i.e., the x-y should be replaced by explicit numbers)	These are the relative threats to terrestrial species in the WWF LPR but since several publications are cited here we do not wish to convey meaning with the
German government	**Chapter 7**	16	437	16	439	Provide references for the statement "However, 2030-2050 there is an assumed stabilization in global population …".	Noted
Wang Yujie	**Chapter 7**	16	437	16	Figure 7.4	can not be seen clearly	Noted
German government	**Chapter 7**	16	437		Figure 7.4	Please provide a higher quality resolution of this Figure.	Noted
Wang Yujie	**Chapter 7**	16	466	16	466	delete "in"	Noted
Wang Yujie	**Chapter 7**	17	490	17	Figure 7.6	same problem as Figures 7.4	Noted
Wang Yujie	**Chapter 7**	17	496	17	496	change "gain" to "gained'	Noted
Rob J.J. Hendriks	**Chapter 7**	18	505	18	505	largest efforts in terms of what?	Referring to strategic assignment of protected areas
Hamid Custovic (SPI)	**Chapter 7**	18	507		508	Land degradation neutrality has been introduced to fill this gap.	There are no concrete implementation policies yet. Indeed, land degradation neutrality (and Bonn Challenge pledges, Aichi Targets etc) can be a first step towards quantitative national action plans.
Rob J.J. Hendriks	**Chapter 7**	18	510	18	510	marked deviations?	Will be taken out.
Panos Panagos	**Chapter 7**	19	556	19	556	Please add a bullet about "Soil sealing and land take" as this contributes to decrease of agrcicultural production	Added
Rob J.J. Hendriks	**Chapter 7**	19	562	19	569	Would it be relevant/appropriate to include the message in this paragraph in the executive summary on page 4?	It was considered and we decided to keep the executive summary as is.
D. Pennock (ITPS)	**Chapter 7**	20	582	20	589	This is a well-written and perceptive section	Appreciated
Hamid Custovic (SPI)	**Chapter 7**	20	582			We understand that the IAMs do not attempt to model impacts of management on soil properties (eg tillage, stubble removal). This is a limitation that should be mentioned here, and addressing it should be raised in the recommended actions.	Added to the executive summary
German government	**Chapter 7**	20	590			General comment on the section 7.2.5 titled "Water": This section lacks water related themes which are directly or indirectly associated with land use (with references to adaptation, disaster risk, climate protection, biodiversity) and vice versa.	Climate change induced now defined. Baseline trends in Wiberg 2017 are from SSP2 while the climate change trend reporting increased discharge in SE Asia is from the MA scenarios. Other sentences deleted or modified.
German government	**Chapter 7**	20	597	20	600	The following sentence gives rise to several questions: "In particular, increased land dedicated to agricultural land use accompanied by increased irrigation reduces water quantity (question: for what?), thereby reducing runoff and major decline in freshwater biodiversity"(question: what are you refering to? to reduced run-off volume of a drainage basin, or the reduced surface run-off? Or is the evapotranspiration meant here?	Clarified
Wang Yujie	**Chapter 7**	20	602	20	602	“9 billion people", we do not have this many people on our planet. Is it projected?	This is projected and is stated so with the word 'future' , but has been clarified.
German government	**Chapter 7**	21	616	21	655	In the title of section 7.2.5.2 you use the term "options". Therefore, please introduce the 3 options accordingly, and remove the term "recommendation" on page 21, line 651.	noted, revision was done as suggested; currently outside of the box it was in.

German government	**Chapter 7**	21	616	21	655	Regarding the three major policy options outlined in section 7.2.5.2 the following aspects should be included (preferably as conclusions): 1) Protecting natural landscapes reduces water stress (to be achieved through an integrated spatial planning). 2) water quality is an important aspect of water quantity (this aspect should include (a) adapted nutrient and fertilizer management, (b) end-of-pipe water treatment as well as (c) the polluter-pays-principle. Please also expand on the issue of 'precautionary principles'. 3) Adaptive land use practices for example in order to reduce N and P input in water bodies (we encourage you to assess advantages emerging from biodiversity/small waterbodies).	Noted as above.
German government	**Chapter 7**	21	616	21	655	It would be helpful if you could provide a few concrete regional/local examples (lessons learned / success stories) for the three options.	Noted as above.
Royal C. Gardner	**Chapter 7**	21	617	21	617	"Managing land is managing water" should be a key message.	Noted
Royal C. Gardner	**Chapter 7**	21	619	21	620	Consider saying recommend these options "for consideration" so as not to seem prescriptive.	Noted as above, section is titled "Major Water Policy Options"
Royal C. Gardner	**Chapter 7**	21	621	21	655	The three recommended policy options do not all seem to be written as options and/or recommendations. A parallel structure would clarify matters. The first option -- protect natural landscapes -- is clear. The second option -- water quality is an important aspect of water quantity -- is more of a statement. The option/recommendation could be characterized as "enhance and protect water quality." The third option/recommendation is also related to water quality. Overall, this critical section needs to be refined and made clearer.	Noted as above, reworded accordingly
German government	**Chapter 7**	21	621	21	623	The following sentence sounds strange: "Restricting large scale clearing of vegetation or land conversion, for example converting natural land to urban land, increases soil organic matter which …". Please check this sentence and revise it.	Revised
Brajendra (ITPS)	**Chapter 7**	21	625	625	same line	sentence not clear and aligned	Revised
Wang Yujie	**Chapter 7**	21	629	21	630	change "needed" to "it's needed'	Revised
German government	**Chapter 7**	22	664		Figure 7.7	Please provide a higher quality resolution of this Figure.	Done
German government	**Chapter 7**	22	672	22	676	Provide references for the statements given in the first para of the section on "Future scenarios".	Noted
German government	**Chapter 7**	23	678	23	679	Provide references for number in Table 7.2.	Noted
Brajendra (ITPS)	**Chapter 7**	23	686	686	same line	Check subscript for carbon dioxide	Done
German government	**Chapter 7**	23	693	23	696	Provide references for the statements/numbers in this paragraph.	Noted
German government	**Chapter 7**	23	697	23	697	Check the following sentence and revise accordingly: "Climate change could also directly impact natural ecosystems."	Done
Royal C. Gardner	**Chapter 7**	23	701	23	702	This could be a good place to refer back to the peatlands case study in chapter 4.	Done
German government	**Chapter 7**	23	703	23	703	Provide references for the cited IPCC figures in the first para of the section on "Future scenarios".	Noted
Hamid Custovic (SPI)	**Chapter 7**	24	718			Bioenergy is one word.	This has been corrected
Hamid Custovic (SPI)	**Chapter 7**	25	731		740	Mention also the resource requirements of BECCS, in contrast with other NETs (see Smith et al re land and water resource implications of BECCS vs other negative emissions technologies. Smith, P., Davis, S.J., Creutzig, F., Fuss, S., Minx, J., Gabrielle, B., Kato, E., Jackson, R.B., Cowie, A., Kriegler, E. and Van Vuuren, D.P., 2016. Biophysical and economic limits to negative CO2 emissions. Nature Climate Change, 6(1), pp.42-50.).	This among other BECCS critiques has been formulated in a new textbox within the bioenergy section. We added the reference to Smith et al (2016).
Brajendra (ITPS)	**Chapter 7**	27	733	733	same line	Check subscript for carbon dioxide	Checked
German government	**Chapter 7**	24	745	24	745	Please expand on what is meant with "surplus lands" (e.g. criteria that are used to define 'surplus').	A large part of the cited study defines this concept. Has been reworded.
German government	**Chapter 7**	25	754	25	754	The concrete number of hectares needs to be inserted (see: "XX million hectares").	1.7 million hectare - FAO Global Forest Resources Assessment 2010

Brajendra (ITPS)	**Chapter 7**	27	800	800	same line	The spelling of integrated is wrong	Have double checked and 'integrated' is spelled correctly, leave as is
Wang Yujie	**Chapter 7**	29	876	29	876	change "most" to "the most"	proper grammar to read 'most'; leave as is
Wang Yujie	**Chapter 7**	30	899	30	899	change "accompanied" to "accompany"	change 'accompanied' to 'be accompanied'
Wang Yujie	**Chapter 7**	30	915	30	915	change "differ between biomes" to "differ from biomes"	wording of differ between is correct here as it is indicating drivers are different for each biome - differ from would indicate drivers are different from biomes. Leave as is
Wang Yujie	**Chapter 7**	30	918	30	918	change "in a decline" to "in decline"	change 'in a deline' to 'in a decline in extent'
Wang Yujie	**Chapter 7**	30	926	30	926	change "in a decline" to "in decline"	change 'in a deline' to 'in a decline in extent'
Wang Yujie	**Chapter 7**	31	934	31	934	change "scenarios for Europe" to "scenarios of Europe"	change 'scenarios for' to 'scenarios in'
German government	**Chapter 7**	31	935	31	936	Regarding the results of agricultural land abandonment: Check chapter 4, page 57 (lines 1613 - 1629), where it is discussed that results of land abandonment can facilitate restoration of natural ecosystem processes, but that land abondonment may even put local biodiversity at risk through habitat loss, decrease in habitat patchiness, competitive exclusion, invasions of non-native plants etc.	We think that Chapter 7 is not the place for this discussion. But have inserted 1 -2 lines indicating that scenarios here only consider land clearing and not whether natural restoration will return to natural/native ecosytsems and refer back to chapter 4 to indicate that this process can be accomponied by other drivers of loss such as invasions etc
Rob J.J. Hendriks	**Chapter 7**	31	937	31	938	What is meant with 'where land use changes ans human interventions have already occured'? Is an indication of time (period) lacking here?	This sentence has been moved and revised.
Wang Yujie	**Chapter 7**	31	937	31	937	change "was lowest" to "was the lowest"	change as suggested
Wang Yujie	**Chapter 7**	31	968	31	968	change "cost to food" to "cost of food"	intention here as that the cost is one of foregone food production therefore 'cost to food' is correct. Leave as is
German government	**Chapter 7**	32	981	32	981	Provide examples of narrow definitions used by previous assessments of what constitutes land degradation.	reworded
Wang Yujie	**Chapter 7**	32	995	32	995	"at a 6′ scale" , not clear	I cannot find the sentence to which this comment refers
Rob J.J. Hendriks	**Chapter 7**	32	1005	32	1006	Could/should this notion also be added to the key message at line 141 of page 5?	Has been taken into consideration before the SOD.
Wang Yujie	**Chapter 7**	32	1006	23	1006	"local level the, scenarios"--> local level, the scenarios	corrected
Wang Yujie	**Chapter 7**	33	1014	33	1014	change "yield" to "yields"	corrected
Wang Yujie	**Chapter 7**	33	1017	33	1017	change "biodiversity are expected" to "biodiversity is expected"	Subject is "declines", "are expected" is correct
Wang Yujie	**Chapter 7**	33	1043	33	1043	delete "associated"	reworded
Panos Panagos	**Chapter 7**	34	1078	36	1078	I doubt about the sentence that "There is a scarcity of local soil scenarios". There are publications and studies (even at Continental scale) with scenarios on soi threats.	We included additional publications
Wang Yujie	**Chapter 7**	34	1085	34	1085	change "growth in global demand" to "growth of global demand"	"in" is correct
Panos Panagos	**Chapter 7**	34	1086	34	1086	the author is Bouma and not "Bourma".	changed
Panos Panagos	**Chapter 7**	37	1090	37	1090	the word "Restauration " in the title is not correct.	corrected
Wang Yujie	**Chapter 7**	35	1100	35	1100	change "messofauna" to "mesofauna"	changed
Emanuele Lugato	**Chapter 7**	35	1105	35	1106	Scenarios related to Soil Organic Carbon (SOC) get comparatively little attention'. Actually, there are high resolution pan-European assessments of SOC changes under different scenarios [see ref. Lugato E, Bampa F, Panagos P et al. (2014.) Potential carbon sequestration of European arable soils estimated by modelling a comprehensive set of management practices. Global Change Biology, 20, 3557-3567.]	Thank you for your comment and the valuable information provided, we are going to revise and include of the publication
Brajendra (ITPS)	**Chapter 7**	36	1128	1128	same line	ammonia subscript is wrongly written	made sub

Panos Panagos	**Chapter 7**	36	1134	36	1144	In this paragraph, it is reccomended to add a recent well known published Study regarding the effectiveness of soil conservation measures of the Common Agricultural Policy (CAP) in reducing soil erosion by 19% between 2000-2010. Those conservation measures include reduce tillage, cover crops, plant residues, terraces, grass margins and contours. More information about the publication in: - Panagos P., Borrelli P., Poesen J., Ballabio C., Lugato E., Meusburger K., Montanarella L., Alewell C. 2015 . The new assessment of soil loss by water erosion in Europe. Environmental Science and Policy, 54 , pp. 438-447	Thank you for your comment and the valuable information provided. We revised the section and included the publication.
Brajendra (ITPS)	**Chapter 7**	37	1190	1190	same line	spelling of resturation is wrong	corrected
Wang Yujie	**Chapter 7**	40	1273	40	1273	7.3.8.1 Biochar this sub-title is not necessary, as there is no sub-titles for Fibre and Timber in this section.	deleted
Hamid Custovic (SPI)	**Chapter 7**	40	1280			It would be appropriate to cite one or more of the recent meta-analyses on the impacts of biochar on plant yield (eg **Jeffery,** S., Verheijen, F.G., Van Der Velde, M. and Bastos, A.C., 2011. A quantitative review of the effects of biochar application to soils on crop productivity using meta-analysis. Agriculture, ecosystems & environment, 144(1), pp.175-187. **Biederman,** L.A. and Harpole, W.S., 2013. Biochar and its effects on plant productivity and nutrient cycling: a meta-analysis. GCB bioenergy, 5(2), pp.202-214. **Liu,** X., Zhang, A., Ji, C., Joseph, S., Bian, R., Li, L., Pan, G. and Paz-Ferreiro, J., 2013. Biochar's effect on crop productivity and the dependence on experimental conditions—a meta-analysis of literature data. Plant and soil, 373(1-2), pp.583-594.	agree; Biederman & Harpole (2013) added
Hamid Custovic (SPI)	**Chapter 7**		1281			There is published evidence of this - it is not merely speculation eg Singh, B.P., Cowie, A.L. and Smernik, R.J., 2012. Biochar carbon stability in a clayey soil as a function of feedstock and pyrolysis temperature. Environmental Science & Technology, 46(21), pp.11770-11778.	Reworded, cited
Gerardo Ojeda	**Chapter 7**	40	1286	40	1286	I suggest to add the following sentence after "(... Lehmann, & Joseph, 2010)." ->"However, the ecological role or impact of biochar once it has eroded from soil or moved through a soil profile into watercourses, must be assessed (Rumpel et al. 2006; Biederman and Harpole 2012), taking into account the potential risks associated to its use in terms of contaminants contained on it (Kuppusamy et al., 2016). " Rumpel C, Chaplot V, Planchon O, Bernadou J, Valentin C, Mariotti A (2006) Preferential erosion of black carbon on steep slopes with slash and burn agriculture. Catena 65:30–40; Biederman LA, HarpoleWS (2012) Biochar and its effects on plant productivity and nutrient cycling: a meta-analysis. GCB Bioenergy 5:202–214. Kuppusamy S, Thavamani P, MegharajM,Venkateswarlu K, NaiduR(2016) Agronomic and remedial benefits and risks of applying biochar to soil: current knowledge and future research directions. Environ Int 87:1–12	Thank you. This has been added and cited.
German government	**Chapter 7**	40	1301	40	1301	Provide a defination of "Baseline Agricultural Production"	inserted after Baseline Agricultural Production – 'existing land use in 2010...'
Rob J.J. Hendriks	**Chapter 7**	42	1341	42	1344	Wouldn't it be good to include this contrast in the executive summary	The Executive Summary has been substantially rewritten, although now this difference between local and global scenarios is not explicitly mentioned. We have discussed this and agreed that the hard distinction between the two sections was not warranted.
Wang Yujie	**Chapter 7**	43	1391	43	1391	delete "," after "2011"	ok

Wang Yujie	**Chapter 7**	44	1433	44	1435	Reference is needed here to support the point.	Two references for inclusion: Foresight, 2011. Future of Food & Farming Project, The Future of Food & Farming: Challenges and Choices for Global Sustainability, The Government Office for Science, London, 2011 .....Royal Society , 2009 The Royal Society, Reaping the Benefits. Science and the Sustainable Intensification of Global Agriculture, The Royal Society, London, 2009
German government	**Chapter 7**	45	1443	45	1465	Check the statements in this section against the findings of the IPBES methodological assessment of scenarios and models of biodiversity and ecosystem services (IPBES/4/19)	Checked, and Deliverable 3c on modelling and scenarios has been referenced.
German government	**Chapter 7**	45	1459	45	1459	Are "visionary scenarios" a new type of scenario? Or under which of the four types of scenarios outlined on pages 5 and 6 of this chapter would they belong?	Reworded as 'Visioning, target seeking scenarios .....'. This links to typology on pages 5 and 6, specifically to 'target seeking' and provides a link to the next section that develops concept of 'visioning LDR'
Wang Yujie	**Chapter 7**	46	1485	46	1485	"valuation" to "evaluation"	No change : the term valuation here is used with respect to 'social and economic valuation' and is correct as such . The second clause ibn the sentence coprrectly uses the term 'evaluation' (of systems of governance) Valuation and evaluation are different here .