

From Edvin Aldrian, IPCC Working Group I Vice Chair and Review Editor  
Chapter One of the SRCCL

Prepared in collaboration with María José Sanz and Bruce McCarl

Re Review editor report on Chapter 1 in **Climate Change and Land: an IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security and greenhouse gas fluxes in terrestrial ecosystems**

Here we note activities undertaken by myself and the other chapter 1 review editors plus our opinions on the author team responses and interactions.

First before interacting with the author team I responded to a TSU email providing names of some suggested reviewers. I also noted during the response process that several of the suggested people did provide comments.

Second, myself and the other chapter 1 review editors worked with the Chapter 1 author team in responding to comments during the our attendance at the 3<sup>rd</sup> and 4<sup>th</sup> authors meetings. In working with the author team we as review editors: a) carefully read the FOD and SOD chapter drafts in preparation for a meeting with the author team over the review comments; b) considered each comment in response to the FOD and SOD drafts identifying major classes of comments and a judgement on priority of a response to the classes and comments therein; c) made a preliminary list of cross-cutting issues raised in the comments that might be best left to other chapters or might require a joint response coordinated with other chapter; d) dialogued with the author team on ways to respond to the comments including developing a coded system of basic responses; e) discussed the role of an introductory chapter as opposed to more in depth chapters; f) made suggestions on the fundamental nature of author team redrafting to address reviewer comments; g) made suggestions on issues to add and sections to shorten in both response to comments and in an effort to better fit the chapter into the total SRCCL document as an introductory chapter; h) did not do any of the redrafting and content alteration in the chapter; i) evaluated all of the author team responses and any associated redrafting done in reaction to both FOD and SOD draft stimulated comments; j) in cases interacted with the author team during the drafting period identifying needs for more complete responses and then evaluated any response or drafting alterations and k) refrained from commenting in the formal process on the FOD or SOD.

In working through this process we noted several significant differences of opinion between the team and the commenters that required resolution. The notable points of disagreement involved a) chapter role as an introduction and b) appropriate content to include in an introduction. In particular a number of commenters criticized what we considered to be excess detail in the chapter that rather could rely on treatments in the rest of the SRCCL or called for detail beyond what the chapter had available pages and scope to cover. In those cases we dialogued over increased use of forward references in the SRCCL, more references to fundamental treatments elsewhere in the literature and an author evaluation process that considered whether some detailed draft sections really belonged in the document introduction. As a consequence we saw a strong reorientation in the revision from more of a subject matter chapter to more of an introductory chapter.

In between authors meetings we received several versions of the responses and associated changes in the draft from the Chapter 1 team members or the chapter scientist and held an iterative discussion on how to respond to the comments and implicit criticisms. The result was in cases a change in the chapter text and in other cases no changes were

made. Nevertheless in all cases the team constructed a satisfactory response that we felt was quite adequate and addressed the comment nicely. In our opinion, the comments lessened in severity for the SOD relative to the FOD indicating a good response from the whole team during the FOD process. SOD responses were also good.

The result of this was an appropriate chapter 1 revision in reaction to both FOD and SOD comments that took into account the vast majority of the writing, referencing, and subject matter comments. This was coupled with responses to a subset of the comments that referred the commenters to more complete treatments in other chapters or responses indicating some comments were beyond the possible scope of the introductory chapter.

In my judgement and that of my fellow review editors we feel all review comments have been sufficiently addressed in the responses or redrafting.

From Bruce A. McCarl, University Distinguished Professor of Agricultural Economics, Texas A&M University and Review Editor Chapter One of the SRCCL

Prepared in collaboration with María José Sanz and Edwin Aldrian

Re Review editor report on Chapter 1 in **Climate Change and Land: an IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security and greenhouse gas fluxes in terrestrial ecosystems**

Date July 5, 2019

Here we note activities undertaken by myself and the other chapter 1 review editors plus our opinions on the author team responses and interactions.

First before interacting with the author team I responded to a TSU email providing names of some suggested reviewers. I also noted during the response process that several of the suggested people did provide comments.

Second, myself and the other chapter 1 review editors worked with the Chapter 1 author team in responding to comments during the our attendance at the 3<sup>rd</sup> and 4<sup>th</sup> authors meetings. In working with the author team we as review editors: a) carefully read the FOD and SOD chapter drafts in preparation for a meeting with the author team over the review comments; b) considered each comment in response to the FOD and SOD drafts identifying major classes of comments and a judgement on priority of a response to the classes and comments therein; c) made a preliminary list of cross-cutting issues raised in the comments that might be best left to other chapters or might require a joint response coordinated with other chapter; d) dialogued with the author team on ways to respond to the comments including developing a coded system of basic responses; e) discussed the role of an introductory chapter as opposed to more in depth chapters; f) made suggestions on the fundamental nature of author team redrafting to address reviewer comments; g) made suggestions on issues to add and sections to shorten in both response to comments and in an effort to better fit the chapter into the total SRCCL document as an introductory chapter; h) did not do any of the redrafting and content alteration in the chapter; i) evaluated all of the author team responses and any associated redrafting done in reaction to both FOD and SOD draft stimulated comments; j) in cases interacted with the author team during the drafting period identifying needs for more complete responses and then evaluated any response or drafting alterations and k) refrained from commenting in the formal process on the FOD or SOD.

In working through this process we noted several significant differences of opinion between the team and the commenters that required resolution. The notable points of disagreement involved a) chapter role as an introduction and b) appropriate content to include in an introduction. In

particular a number of commenters criticized what we considered to be excess detail in the chapter that rather could rely on treatments in the rest of the SRCCL or called for detail beyond what the chapter had available pages and scope to cover. In those cases we dialogued over increased use of forward references in the SRCCL, more references to fundamental treatments elsewhere in the literature and an author evaluation process that considered whether some detailed draft sections really belonged in the document introduction. As a consequence we saw a strong reorientation in the revision from more of a subject matter chapter to more of an introductory chapter.

In between authors meetings we received several versions of the responses and associated changes in the draft from the Chapter 1 team members or the chapter scientist and held an iterative discussion on how to respond to the comments and implicit criticisms. The result was in cases a change in the chapter text and in other cases no changes were made. Nevertheless in all cases the team constructed a satisfactory response that we felt was quite adequate and addressed the comment nicely. In our opinion, the comments lessened in severity for the SOD relative to the FOD indicating a good response from the whole team during the FOD process. SOD responses were also good.

The result of this was an appropriate chapter 1 revision in reaction to both FOD and SOD comments that took into account the vast majority of the writing, referencing, and subject matter comments. This was coupled with responses to a subset of the comments that referred the commenters to more complete treatments in other chapters or responses indicating some comments were beyond the possible scope of the introductory chapter.

In my judgement and that of my fellow review editors we feel all review comments have been sufficiently addressed in the responses or redrafting.

From María José Sanz, Basque Centre for Climate Change (BC3) and Review Editor  
Chapter One of the SRCCL

Prepared in collaboration with Bruce A. McCarl and Edvin Aldrian

Re Review editor report on Chapter 1 in **Climate Change and Land: an IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security and greenhouse gas fluxes in terrestrial ecosystems**

Date July 10, 2019

As review editors we interacted with followed the actions taken by the authors to address the comments given by experts and governments, here we summarize our recollection of the process.

Myself and the other chapter 1 review editors worked with the authors team in responding to comments by experts and governments during and between our attendance at the 3<sup>rd</sup> and 4<sup>th</sup> Lead Author meetings.

In working with the author team we as review editors: a) after considering the FOD and SOD chapter drafts, went over the all review comments and got an overview of the issues raised, as well as identified cluster of comments dealing with similar topic/issue; b) shared our views on the cluster of comments and made a preliminary list of issues raised in the comments that might be best left to other chapters or might require a joint response coordinated with other chapter; c) dialogued with the author team on ways to respond to the comments including developing a coded system of basic responses; d) given the fact that many comments raised the issue of the role of an introductory chapter as opposed to more in depth chapters, we discussed with the authors how to address this important overall framing comment; e) made suggestions on issues to add and sections to shorten in both response to comments and in an effort to better fit the chapter into the total SRCCL document as a framing chapter, yet to keep in it the necessary content; f) did not do any of the redrafting and content alteration in the chapter; g) evaluated all of the author team responses and any associated redrafting done in reaction to both FOD and SOD draft stimulated comments; h) interacted with the author team during the drafting period identifying needs for more complete responses and then evaluated any response or drafting alterations, this was done in several iterations to ensure consistency with the new drafts and completeness of the responses; and i) refrained from commenting in the formal process on the FOD or SOD.

In working through this process notable points of disagreement respect to the comments were expressed by the authors that related mostly to issue of the extent to which the chapter should include detailed information or be more and introduction to the report. The fact that the chapter was disconnected from the rest of the chapters and that in some cases contradicting the content of other chapters, including in the treatment or inclusion of references. As a

consequence, authors made a great effort in reorientation in the revision, and in the final draft the chapter was better frame and reflected the structure and provided good hints for navigating the rest of the report.

In our opinion, the comments lessened in severity for the SOD relative to the FOD indicating reflecting the whole team efforts in addressing the comments during the FOD process.

The result of this was an appropriate chapter 1 revision in reaction to both FOD and SOD comments that took into account the vast majority of the writing, referencing, and subject matter comments. This was coupled with responses to a subset of the comments that referred the commenters to more complete treatments in other chapters or responses indicating some comments were beyond the possible scope of the introductory chapter.

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# Final Review Editor Report

## IPCC SRCCL

### Chapter 2 « Land-Climate Interactions »

Pierre Bernier

#### 1. INTRODUCTION:

This final report follows two interim report by all three review editors assigned to Chapter 2. Unlike the interim report, this last final report is to be submitted individually by each review editor, and is meant to identify outstanding issues. In particular, in this short text, I will therefore cover the following points:

- Issues with the review process
- Potential controversies or disagreements in the text

#### 2. ISSUES WITH THE REVIEW PROCESS

This was my first time as a participant to an IPCC report process, not counting my participations as expert reviewer over the years. I entered my RE role with only a theoretical understanding of my responsibilities. My first observation at LAM 3 was that the role of Review Editor was officially defined narrowly (to evaluate the responses of authors to comments by reviewers), but that unwritten expectations were much broader. In fact, my impression was that an RE was expected to do all in his or her capacity to support the production of a high quality document. This included at a minimum being very pro-active in getting authors to consider comments and provide responses, but could also include helping clarify or correct text, up to providing content if necessary.

In light of this point, I would recommend that the TSU provide a better description of its expectations with respect to the role of the Review Editors. With this in hand, review editors for a given chapter could agree among themselves to a common standard with respect to their role.

There was also an issue of timeline. As REs, we tried as much as possible to use the review comments to help authors improve their text. However, for this we needed to get author responses before final text submission to the TSU so that there was time to give feedback to the authors. I believed that this was particularly critical for the SOD because this was the last chance at correction. Given the very tight deadline, we were only partially successful in this task as we received a large fraction of the responses to comments after the text submission deadline to the TSU.

#### 3. POTENTIAL CONTROVERSIES OR DISAGREEMENTS IN THE TEXT

There were no controversies among authors as to specific technical points within the text, in part because there was not a great deal of overlap in expertise between the different authors given that large breadth of topics covered.

The only real controversy that came up among authors was with respect to the organization of the chapter itself. Following LAM 4 and substantial discussions, the team decided to radically modify a section of the text, dispatching portions to other sections, and moving the remainder to the end of the chapter as supporting information to the previous section. The resulting changes to all section numbers, two weeks before submission deadline to the TSU, had many ramifications, including notifying authors in other chapters so that references to our chapter would use the new section numbers. This should have been done much earlier in the process, but lack of agreement on other points delayed this decision.

In terms of controversy on scientific points as raised by reviewers, I believe that the portion of section 6 (former section 7) dealing with results from Integrated Assessment Models (IAMs) may raise some concerns. As mentioned in the second interim report, reviewers raised two issues with the IAM models. The first was that these models do not represent biophysical feedbacks such as albedo in their modelling structure. The lack of biophysical feedback was striking since other sections of chapter 2 specifically state their feedbacks.

The second issue with IAMs that was raised by the reviewers is that they do not incorporate socio-economic or other feasibility constraints. This turned out to be particularly critical to reviewers for BECCS, one of the preferred mitigation options in many of the IAM outputs. In response to these comments, the authors simply referred to another chapter for further explanations.

Finally, I thank my two colleague Review Editors, Sergey Semenov and Jhan Carlo Espinoza, for their enthusiastic participation in this process. It was a real pleasure to work with both.

PB

2019-06-10



## **Final Report of Reviewer Editor**

July 6<sup>th</sup> 2019

By Jhan Carlo ESPINOZA

RE, Ch2 'Land-Climate Interactions', IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial Ecosystems (SRCCL)

### **1.- Overall summary of the chapter team's work in the reviewing process**

The chapter team of the Ch2 was composed by expert scientists of land-climate interaction which have large experience in their respective research fields. During the redaction and reviewing processes they have been working in a coordinated and efficient manner. In addition, expert reviewers of worldwide provided suggestions, comments and remarks in each step of the reviewing processes. In consequence from the first version of the Ch2 to the final version, Ch2 was substantially improved.

The FOD received 1981 comments (from 135 reviewers) and SOD received 2917 comments (from 192 reviewers). The percentage of substance comments from total comments for Ch 2 was 50% and 57% in FOD and SOD, respectively. Regarding the FOD, some subsections were under-reviewed, however, the SOD review generated a distribution of comments that is far more homogeneous across all sections and subsections.

Some relevant comment needed substantial attention of the authors such as:

- Text complicated and too long in some subsections.
- Overlaps between chapters, and between sections.
- Overlapping and repetition in some parts of the chapter.
- Over-reliance on model results.
- Unequal inclusion of systems components across the sections: forest management, agricultural practices, biophysical feedbacks.
- Reliance on too few references or on older references in the FOD.
- Issues with assessment language.

All of these issues were well addressed by the authors team, including many others more specific points.

### **2. Issues required serious attention of Ch2 team at the final stage of the preparation of SRCCL**

Since the end of the LAM4 authors worked on a new version of the chapter including suggestions from reviewers on the SOD. The more relevant improvements included restructuration of the chapter in order to avoid repetitions and overlapping. One subsection was removed, and the key messages were moved to other sections. Authors have conducted this process in a very organized manner, which required additional efforts for authors and also for REs in the track of the response to reviewers' comments.

Other improvements were done, providing assessment (in addition to review of literature) and including new scientific references.

Two additional points have received serious attention of the chapter team:

- Including additional information regarding regional particularities of land-climate Interactions.

- Avoid unnecessary technical information in the ES.

I was very pleased to participate in the production of the Ch2 of SRCCL, which in my opinion provide unprecedented assessments of our understanding of land-climate interactions. During this process, it was really a pleasure for me to work with my RE colleagues, Pierre BERNIER and Sergey SEMENOV, and Ch2 authors. Finally, I would like to thank Sarah CONNORS and Andreas FISCHLIN for facilitating the work.



Jhan Carlo ESPINOZA,  
IPCC SRCCL Ch2, RE.

## **FINAL REPORT**

by Sergey SEMENOV, RE, Ch2 'Land-Climate Interactions' ,  
IPCC Special Report on Climate Change, Desertification, Land  
Degradation, Sustainable Land Management, Food Security, and  
Greenhouse gas fluxes in Terrestrial Ecosystems (SRCCL)

### **1. Remarks on the chapter team's work in reviewing and addressing comments at all stages of the preparation of SRCCL**

The chapter is of high importance for the report and for the modern climate science in general. It is a successor of the IPCC Special Report on Land Use, Land-use Change, and Forestry (2000). Twenty years passed since that. Reviewing and assessing the new knowledge, which has emerged since that time, is one of the major achievements of SRCCL

The chapter team consists of worldwide known experts in the field from different regions. They have been working in a very efficient manner and in good spirit of cooperation. This allowed to prepare the text of high scientific quality in accordance with the outlines approved by the Panel and general principles for the preparation of the IPCC reports. The main findings and conclusions are supported by relevant literature cited.

From the very beginning of the work, from the FOD, the authors faced some serious challenges reflected in the comments. Amongst them:

- The page limit for the chapter was substantially exceeded;
- The text was rather a review (sometimes even a textbook) than an assessment;
- Policy relevant findings needed more attention;
- Confidence and/or likelihood levels of some statements were missed;
- Some statements were supported by too poor amount of literature;
- Some overlaps between sections of Ch2 (also Ch2 and other chapters) were observed.

The author team has successfully managed with these and many others problems while addressing the reviewers' comments during the editorial period in winter and spring of 2019.

### **2. Issues required serious attention of Ch2 team at the final stage of the preparation of SRCCL**

The final stage of the preparation of Ch2 was not easy. The SOD received substantially more comments than the FOD. Many of them were of substantive nature, some recommended to involve more processes into the consideration. In many cases, the latter was not possible at the final stage of the work or even not

needed at all. The authors have responded to the comments and taken them into account in a very balanced manner.

The team has decided to restructure the chapter in order to avoid overlapping. As a result, one section was omitted, and respective bits of information were moved to other sections, or references to other chapters of the report were made.

I would like to particularly emphasize two points:

- Land impacts on climate and weather through biophysical and GHGs effects;
- differences in land-atmosphere GHG fluxes estimated with different methodologies, in particular, Dynamic Global Vegetation Models (DGVMs) and bookkeeping models.

These issues are extremely important both theoretically and practically. They have been considered by the team in a very fundamental manner with the use of relevant modern literature.

In some cases, problems with uncertainty qualifiers arose. However, needed expert judgments were finally made by the group in the frameworks of existing IPCC approaches (which need some refinement, I think).

Ch2 team has made substantial efforts towards the proper reflection of the major statements in the ES and SPM. As a result, the main findings and conclusions of Ch2 are presented in the SPM accurately and in objective and balanced manner.

It was really pleasure for me to work with Ch2 authors, notably CLAs Elena SHEVLIAKOVA and Gensuo JIA, my RE colleagues Pierre Bernier and Jhan Carlo Espinoza, and the IPCC TSUs members facilitating the work.



Sergey SEMENOV,  
IPCC SRCCL Ch2 RE

## Final Report on IPCC SRCCL, chapter 3 „Desertification“

Dr: Mariam Akhtar-Schuster, Review Editor Ch. 3 „Desertification“ (5th July 2019, Berlin)

### **Responses to queries: Do any significant differences of opinion on any scientific issues that arose during the drafting and review processes exist? How were these issues reconciled in the final text?**

The following scientific issues became visible during the review processes of the FOD and SOD. Although these have been carefully analysed and addressed by the authors of ch 3, they may require further attention in the final stages of the process:

#### • **Definitions used to define desertification and land degradation:**

Comments provided during the review process asked for clarification on how ‘desertification’ is defined. Clarification on this issue was crucial as it was the basis for understanding (a) the scope of ch 3, particularly providing a distinction between desertified areas and deserts, (b) the reason for having a chapter on ‘desertification’ (ch 3) and a chapter on ‘land degradation’ (ch 4), and (c) the relationship between ch 3 and the other chapters of the report, particularly chapter 4.

- Several comments received during the FOD and SOD review processes addressed aspects regarding the definition of desertification. These were analysed by the authors in a dispassionate scientific atmosphere (I attended the 3. and 4. Lead Author Meetings (Dublin & Cali)).
- The analyses undertaken by the authors showed that these comments generally did not contradict the UNCCD definition, which had been used. Rather, these comments provided aspects to further underpin the definition used. The authors considered the comments received to further frame their discussions. This effort is reflected particularly in section 3.2.1.
- The Executive Summary builds on these analyses by starting with the sentence that desertification is confined to arid, semi-arid and dry sub-humid area, collectively known as drylands. This provides a clear distinction to ch 4 that covers land degradation in other climate systems.
- The introductory chapter also clarifies that deserts (“valuable ecosystems”) are located in drylands. They are however not considered prone to desertification. Thus, desertification cannot be equated to desert expansion. With this scientific distinction, the authors have also carved out the vital economic, cultural and ecological role which favourable isolated areas play for production in hyper-arid/desert areas (e.g. oasis with their reliable water supply) as well as their exposure/sensitivity to unsustainable land use and climate change. These aspects could be useful for aspirations towards sustainable development in hyper-arid regions.
- It may be important to underscore that the definitions used for defining desertification and land degradation (ch 4) are complementary. Both definitions show that “the difference between desertification and land degradation is not process-based but geographic.” Therefore, both chapters strongly relate to each other. This may also clarify, why certain aspects are logically placed in either of the chapters (also to avoid lengthy duplications). For instance introducing the LDN conceptual framework in ch 4 is logical because the concept applies to degradation under all climate regions, including drylands. It is therefore sufficient that it is described once in the special report. On the other hand, the authors of ch 3 and 4 jointly developed a cross-chapter box (see ch 3) on policy responses to drought, a climate phenomenon which is not only restricted to drylands (this sharing of knowledge shows the inherent relationship between both chapters).

Possibly remaining issues: Regarding the numerous comments on definitions and boundary issues, it may be useful to develop a crisp scientific message on the relationship between desertification, land degradation and deserts, possibly also including the issue of droughts. At the same time the intrinsic thematic relationship between chapters 3 and 4 may need to be kept under consideration: Certain aspects may be discussed in detail once under either of the chapters.

#### • **“The AI [Aridity Index] is not an accurate proxy for delineating drylands in an increasing CO2 environment”**

This is possibly an important statement emerging from ch 3 for many outside the strictly ‘climate community’. Discussions on the implications of rising CO2 levels to estimate dryland areas may need a

brief and clear description because considering the AI has been decisive in dryland /desertification discussions during the past decades in various land-related scientific communities.

- **The issue of quantitative data**

There were many questions/requests during the FOD and SOD review processes to include more quantifiable information. The authors have included evidence-based quantifications whenever available. The confidence levels in ch 3 clearly reflect the available evidence base. This makes the message emerging from this ch solid.

(Further thoughts: Different disciplines have different methods. This may require considerations in future on how to manage more qualitative messages in IPCC assessment processes. Qualitative statements/messages that are based on a solid narrative could provide a way forward.)

- **“Limits to adaption”**

Comments regarding “Limits to adaptation” have been addressed. There is however insufficient knowledge available on this matter. It may need to be considered that the term “limits to adaptation” is being used as a scientific concept by the authors, and the comments received on the FOD and SOD on this subject are also of scientific nature. This issue may just as well have been termed “limits to adaptive capacity” (see the use of the term “adaptive capacity in e.g. SOD Review comment 12441, 12443).

- **Addressing regional imbalance**

The definitions used in ch 3 (see introduction) provide clarification for the selection of the case studies presented in this ch. Based on numerous comments emerging from the FOD and SOD review processes, the authors have improved the regional balance, particularly also through diversifying the set of case studies included in the chapter. These improvements were based on extensive scientific discussions, which took place at the 3<sup>rd</sup> and especially 4<sup>th</sup> Lead Author Meeting and extensive literature research in the immediate aftermath of these meetings. The inclusion of case-studies from hyper-arid regions (example Oasis) has closed a crucial regional gap in ch 3. This chapter now also addresses West Asia and the Arabian Peninsula (see also my comment above on the economic, cultural and ecological relevance of favourable isolated areas in hyper-arid environments).

- **Sustainable land management (SLM):**

SLM is discussed/used widely in the land-related scientific communities. SLM was considered to be an overarching theme during the scoping process for this special report, an explanation for why it was not placed in one chapter as is the case for ‘desertification’ (ch 3), land degradation (ch 4) and food security (ch 5). In the SOD review process, the number of references to SLM had visibly increased.

In order to ensure a solid understanding of the SLM approach in the further process, it may be useful to provide brief comprehensive context-specific explanations regarding SLM. This could be done jointly by the authors of ch 3 and ch 4, who both discuss SLM.

Further, SLM can help to avoid desertification, and support measures to reduce desertification. SLM has the potential to deliver on multiple SDGs. It can support aspirations for sustainable development to ensure human wellbeing – worldwide, particularly under ongoing or anticipated climate change effects. It may therefore be useful to reflect on SLM more strongly as a major policy-relevant “umbrella” option for land-based climate change adaptation and mitigation in the Summary for Policymakers; ch 3 findings can support this.

SLM could also support the development of further science interactions between ‘land’ and ‘climate’ experts.

**General comment:** It was a pleasure for me to be involved in this inspiring work and observe with how much commitment and dedication the authors worked on ch 3, thereby analysing the numerous comments emerging from the FOD and SOD review processes to further develop this chapter.

*M. Akhtar-Schuster*

Dr. Mariam Akhtar-Schuster (Berlin, 5<sup>th</sup> July 2019)

**Review editor report on Chapter 3 of the IPCC special report on climate change and land** (IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security and greenhouse gas fluxes in terrestrial ecosystems)

**Submitted by:** Fatima Driouech

- Casablanca, 07/07/2019

Hereafter I summarize the main review activities I undertaken by myself and the other two review editors of chapter 3 and my conclusions issued from this review.

The review activities included a careful reading of the first and the second order draft of the chapter, the analysis of the comments received for each of the versions and the evaluation of the author team responses and associated redrafting in the chapter. Interactions and exchange with the chapter team during the 3rd and the 4th author meetings allowed working more closely with the authors in treating the comments, especially the substance and uncertainty languages categories starting with the more critical ones. A special interest was given to how comments/suggestions were addressed, which were rejected by the authors and how the rationale provided for the rejection was solid and comprehensive. We also interacted with the chapter team to ensure that the responses are drafted on an appropriate way.

The comments received and their careful consideration by the chapter team allowed good improvements of the chapter including clear differentiation between the purpose of chapter 3 and chapter 4 (thanks also to the fruitful cooperation between these two chapters), more regional balance in the assessment, the highlighting of knowledge gaps and the assessment of relevant work carried out by other UN organisations. Thus the chapter do not duplicate efforts but can be considered complementary to recent other reports on the subject of land degradation and restoration. Taking into account different review comments, the authors enriched the chapter by the inclusion of additional aspects/topics as such as groundwater and irrigation, more emphasis on gender and poverty, dust and sand storms, climate services and ecosystem services. Future projections based on scenarios have been included for population exposure and discussed for drivers of desertification. Future changes of desertification depending on scenarios could not be included consistently due to lack of publications addressing the topic (limited to very few areas). Limits to adaptation and adaptive capacities have been mainly discussed from the scientific perspective. The Lack of scientific evidence that emerged in some cases has not affected the quality of the messages provided by the chapter.

The process review resulted in an appropriate chapter revision and the treatment of all comments by the authors who took into account a vast majority of them and provided a rationale underlying their decisions of acceptance or rejection.



In my judgment, I feel that the review comments have been sufficiently addressed in terms of both the responses and redrafting.

A handwritten signature in blue ink, consisting of several vertical and curved strokes, appearing to be the initials 'FD'.

Fatima Driouech

## **Review Editor's report: IPCC special report on climate change and land**

### **Chapter 3: Desertification**

Mahesh Sankaran, National Centre for Biological Sciences, Bengaluru, India

Chapter 3 deals with the issue of desertification under climate change, and the reciprocal nature of linkages between the two. In total, there were over 2300 comments from well over a 100 reviewers on the first and second order drafts of Chapter 3. The bulk of these comments (nearly 60%) addressed issues relating to the substance of the chapter, while the remaining was largely editorial or pertaining to the uncertainty language used. There were also several positive comments on the chapter content. Overall, the authors have done a fairly thorough job of dealing with these comments. As a result, the chapter has been considerably strengthened, and is now more focused, crisp and internally consistent. In addition, the chapter is now also better aligned with other similar assessments such as the IPBES Land Degradation and Restoration Assessment.

Specifically, the Executive Summary is now considerably improved. The language has been simplified and it is a lot easier to read. Uncertainties and confidence levels associated with estimates have been provided where relevant, as well as future projections where appropriate. The ES also now discusses gender issues, which was a concern raised earlier. In terms of the main body of the chapter, it now contains more detailed discussions on limits to adaptation, climate services and poverty. Policy prescriptive language has been removed, and confidence language improved throughout. There is also better cross-referencing between chapter 3 and other chapters of the report.

The authors have also made a commendable effort to minimize confusion associated with the definition of terms. In particular, desertification – as different from degradation in general, and from aridity – is now clarified better. Also, the authors have done a good job in clarifying issues associated with the use of the Aridity Index for future projections of desertification – comments relating to these aspects in the previous draft have been addressed satisfactorily. Regional coverage is also much improved (within the limits of the word constraints in the document), which was another major area of concern based on the comments received.

There were also several comments relating to the issue of baselines. The revised draft now includes text at the start which acknowledges issues with, and the importance of, specifying baselines. The authors clarify at the start that different studies use different baselines (typically the start of the assessment period for quantifying change), and acknowledge that providing estimates of the extent of desertification based a common baseline is not possible. In addition, the authors also acknowledge the extensive discussion on 'baselines' that is available in the IPBES LDRA. Overall, this chapter builds on, and in many ways complements the IPBES LDRA –

in particular, the interaction between climate change and degradation in drylands (desertification) is explored in greater depth here in accordance with the mandate of this report.

The chapter now contains a more nuanced discussion of desertification and conflict, as well as a more detailed consideration of issues relating to groundwater and rainwater harvesting. Potential solutions to address problems of desertification (e.g. SLM) have been highlighted where relevant. Finally, several complex sentences in earlier drafts have now been simplified making the current version much clearer and easier to read.

Overall, the authors have done a commendable job in addressing and responding to comments. Many comments that were not addressed (i.e. response noted as rejected) were comments that were either incomplete, referred to the wrong line/ page numbers, were policy prescriptive or, in some instances, not entirely relevant or within the scope of the chapter. The authors have largely done a good job of responding to such comments and have provided valid reasons for not accommodating suggestions.

Some potentially outstanding issues include:

- Afforestation is talked about as a potential solution in places (towards the end of the document/ case studies) although it can also be a cause for degradation (as the authors have noted earlier in the document). This can be a potential source of confusion for readers and policy makers. Although a lot of this text has been added in response to comments received on earlier drafts (positive effects of tree planting), these could have been accompanied with caveats pointing out the potential drawbacks of such initiatives where relevant.
- In some instances, the author responses to comments (in the spreadsheet as opposed to the main text) could have been more detailed. For example, in a few instances the author responses just say 'noted', and it is unclear exactly what action was taken to address the comments. More elaborate and clearer responses would have helped in these instances. Also, responses to some comments could have been more diplomatic.

Mahesh Sankaran

A handwritten signature in blue ink, appearing to read 'Mahesh Sankaran', with a horizontal line underneath.

July 5, 2019

# FINAL REVIEW EDITOR REPORT OF CHAPTER 4 OF IPCC SPECIAL REPORT ON CLIMATE CHANGE AND LAND (SRCCL)

## 1. Main statistics

The chapter has undergone two rounds of review, a first one by experts only and a second one by experts and governments. The following table summarizes the number of reviewers that submitted comments, the total number of comments received and their nature, based on the categorization provided by the reviewers themselves.

**Table 1.** Main statistics about the reviewers and comments received by Chapter 4 of the SRCCL.

Draft	Number of Reviewers	Total comments	Type of comment			
			Substantive	Editorial	References	Uncertainty language
<b>FOD</b>	84	1.115	722	262	87	44
<b>SOD</b>	128	1.745	1.178	361	151	55
<b>Total</b>	212	2.860	1.900	623	238	99

In both reviews, a large number of comments were substantive or provided additional references to the authors. The comments affected all parts of the chapter, which means that text was not only rather extensively commented on, but that the review was rather complete.

## 2. Topics of concern during the review

Following are some of the topics that appeared more frequently in the comments by the reviewers. They are listed in alphabetic order, without assigning to any of them more importance than to the any other:

- Clarification of the divisions of land being used
- Clarification of the naturalist and social scientist views about land degradation
- Clarification of the role of biophysical and socioeconomic factors as drivers of land degradation
- Clarifications of a number of concepts being used
- Heterogeneity among sections in the style of writing and depth
- Incorrect statements not supported by the literature
- Key messages needed to be sharpened
- Lack of examples or good examples, particularly in the case studies
- Lack of support or limited support for a number of paragraphs, at times with outdated references
- Lack of temporal and scenarios frameworks
- Lack or insufficient geographic details
- Limited cross- referencing with other chapters of SRCCL and other IPCC reports
- Limited use of the uncertainty language
- Much of the text is written in review mode rather than as an assessment
- Overlapping text with other chapters
- Poor or insufficient artwork of figures or incompleteness of these and tables
- Review was often incomplete and, at times, biased

- Unclear differentiation between Chapter 3 and Chapter 4
- Use of policy prescriptive language

### 3. Main contentious issues

- The definition of land degradation received many comments, at times contradictory between reviewers
- The separation between non-forest land and the forest-land

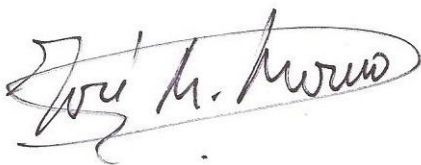
### 4. Analysis of the responses to the comments

The author team worked during the FGD preparation period, providing appropriate answers to all comments. The text was changed taking into consideration the comments made in a majority of cases when substantive comments were made, only a few comments were rejected based on solid grounds. During LAM4 the contentious issues were discussed at length and in coordination with other chapters, to clearly draw the lines of the concepts being used and to reduce overlapping among chapters. Finally, the team focused in rewriting the chapter executive summary, improving or incorporating the use of uncertainty language and assuring the traceability of the conclusions with the chapter text.

### 5. Conclusion

In my opinion, all substantive and contentious issues raised by the reviewers received appropriate consideration, and resulted in the corresponding clarifications and amendments in the text when needed. The review was successfully completed.

Toledo, July 12nd, 2019

A handwritten signature in black ink, reading "José M. Moreno", enclosed within a hand-drawn oval shape.

José M. Moreno

Review Editor of Chapter 4 of the SRCCL

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Buenos Aires, July 3<sup>rd</sup>, 2019



Carolina Vera

Review Editor of Chapter 4 of the SRCCL



**DEPARTMENT OF AGRONOMY**  
**Faculty of Crop Production Sciences**  
**The University of Agriculture Peshawar**  
**Khyber Pakhtunkhwa**  
**Pakistan-25130**



## **FINAL REPORT OF CHAPTER-5 ON FOOD SECURITY**

I checked the chapter very carefully. The chapter is now in the most improved form as compared to the one at Dublin and CIAT. All the differences of opinion arose during the drafting and review process are very carefully addressed and incorporated by the authors. I am highly impressed from the combined chapter team's work while reviewing and addressing all comments and suggestions. Moreover, the authors were also most positive to REs comments during the whole process. The authors have replied to all comments of the reviewers in a very positive way. I congratulate the whole team of chapter 5 especially the lead authors **Dr. Cynthia Rosenzweig** and **Dr. Cheikh Mbow** for their positive responses and smiles. By the way, I appreciate the reviewers who actually helped the authors to bring this chapter to the final and useful shape.

I am once gain thankful to IPCC for nominating me as the RE for food security (a major issue of my country, Pakistan). I learned a lot during the meetings in Dublin and CIAT and hope to learn more with cooperation with IPPC, thanks.

**Dr. Amanullah**

**Review Editor Chapter-5 (Food Security)**  
**July 04, 2019**



## **Review Editor Report**

### **Final Draft of IPCC SRLCC**

#### **Chapter 5 - Food Security**

**RE: Prof. Nouredine Benkeblia**

After successive editing and corrections, the chapter was significantly improved and the content thoroughly polished when compared to the previous drafts. The final draft looks clear and for sure it will be very useful for all the communities including scientific, stakeholders and policy makers all together.

After hundreds of comments that have been raised by the reviewers, the contributing authors and the lead authors and under the excellent coordination of the Coordinating authors, have addressed most of these comments, while few have been reconsidered and the text was polished. However, few points have not been adequately addressed due to the discrepancies of the reviewers' comments and lack of information and data to clarify these comments. Therefore, I noticed that the authors and contributors addressed these comments in a succinct and precise manner when possible.

Therefore, I can conclude that:

- The responses to the reviewers; comments are concise and more than to be satisfactory.
- The text is clear and well supported by the scientific evidence.
- Tables and Figures are appropriate and explanatory and supporting well the content of the text.

- The data reported are relevant and significant.
- The quality of the reported data seems to be technically sound, appropriate techniques have been cited and described
- The reported data have been well and critically analysed and interpreted.
- The data have been clearly presented and sufficient detail given to be clear and understood by the readers.
- The level of support for the conclusions is sufficient and strong evidence is provided for the authors' claims.
- The reported data are very important and useful to the field.
- The document is well streamlined.

Overall, the final draft might be considered as final version, and might be approved under its present form.



*N. Benkeblia*

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**RE: Prof. N. Benkeblia**

**Review Editor Final Report**  
**Chapter 5**

**Andy Challinor 1/7/2019**

The hard work of the authors clearly improved the report from its very sound starting point. It is clearly something to be proud of. In general, responses to comments are concise, relevant and firm where necessary.

At the FOD stage, the authors focussed the chapter on climate change and food security, rather than simply food security as a topic. The authors also provided a greater focus on regional aspects, as recommended in several comments. Awareness of the important role of uncertainty language also came in at this stage, in response to comments. The authors accepted a very high percentage of the FOD comments from reviewers, whilst being appropriately wary of responding to comments that sought to add citations.

At the SOD stage, the chapter was again improved and polished from the previous version. The framing figure was again been improved; no doubt it will prove useful elsewhere also. The wording of the ES has matured nicely into a nuanced but firm set of evidence-based conclusions, perhaps partly in response to rejections of stronger wording in the SOD.

Especially useful review comments at the SOD led to:

- Greater emphasis on the role of education, via specific text in the capacity building section.
- The adaptation section (5.3) was vastly improved, with greater background, framing and lead-in to the details that were present in the SOD. Relevant detail has also been added, for example on risk management.
- Overall, the document has been further streamlined, whilst still managing to respond to reviewers' comments. For example, a comment (21491) was made about the use of novel technology to reduce livestock emissions, stating that the two lines devoted to it were not enough. A signpost to another section and the addition of supplementary information (SM5.5) elegantly dealt with this issue.

To the IPCC Working Group III Co-Chairs

**Final Report from Review Editors for Chapter 6 of IPCC Special Report on Climate Change and Land (IPCC SRCCL: Chapter 6: Inter-linkages between Desertification, Land 2 Degradation, Food Security and GHG fluxes: 3 synergies, trade-offs and Integrated Response 4 Options.**

After the Second Order Draft (SOD), when over 1430 comments were received, and two of the Review Editors was unable to attend the Forth Lead Author meeting, it became clear that the work load had become unmanageable and more Review Editors were requested.

The TSU reacted positively. I was approached by TSU and Co-Chairs of WGIII to be additional Review Editor, as I have already been following the chapter during LAM3, therefore was in a good position to take over this task.

CLAs and LAs spend significant effort and ample time at the LAM4 addressing the ES and key messages/storyline arising from the chapter, working across chapters and cross chapter boxes and contributing to outlining the SPM. The Author Team worked very well as a team and the chapter took good shape.

**Overall comments:**

- The CLA's and LA's have responded appropriately, and where necessary in detail to the First Order Draft (FOD), which received 1128 reviewer's comments, while for the Second order Draft SOD received ~1430 reviewers' comments. Many of these are generally constructive, pointing out areas for further improvement and clarification.
- Based on the SOD and the review comments received, the Review Editors have highlighted a number of issues that seemed to be critical for a successful chapter, or were particularly pushed by the reviewers.
- The reviewers have commended the chapter for the overall high quality, major improvement since FOD, despite the extremely ambitious time frames and very high number of comments.
- The reviewers noted that there were number of repetition with other chapters, and some cross-referencing would be useful. And lack of information in the executive summary about adaptation options, and statements reflected were rather general.
- There were number suggestions to paraphrase the language where layman's could easily be read in the SPM.
- The reviewers noted that the chapter would overall benefit from tightening up the content and cut some redundant material already mentioned
- The reviewers welcomed the crossover approach used in Chapter 6. and suggested that the analysis of the available scientific literature be refined, since several additional studies could be used to better assess the effects of some land-based options on other sustainable development objectives, for example on the links between REDD+ and

food security, or the adaptation benefits associated with material substitution. These studies are indicated in various comments made throughout Chapter 6.

- The reviewers noted that the need to complement the assessment presented in chapter, in particular in section 6.4., with one more response option: The option of "inaction" beyond actions in place today. This would put the information and figures in context and convey the message that although some of these response options do come at a certain disadvantage doing nothing might not be an option.
- Some reviewers pointed out that the Ch. 2-5 would bring up a number of factors and feedbacks that are involved in climate forcings, including albedo, water retention, carbon retention and methane decomposers in upland soils. For instance, these are summarized in section 2.6.2.1. Thus, they would also know that these cycles could be managed for the sake of mitigation. However, in the holistic assessment of various response options in ch.6. (which is generally very much appreciated), perspectives on mitigation falls down to GHG emissions only.
- The reviewers pointed out to consider including biogeophysical factors that are relevant for mitigation, as well as difficulties over metrics to represent such factors.
- The reviewers also recommended to consider the consistency between the different chapters related to strategies for livestock management. Mostly, the idea for "improved livestock management" in ch. 6 (see for instance 6.3.2) is to reach higher yield per unit of input/emissions. Thus, there is an idea for "output-optimization". Similarly, in discussions over diets in ch. 5 and 6, assessment is also exclusively output-oriented, focusing on emissions per unit of output.
- They also pointed out on the other hand, the livestock sector is naturally also at the center for proposals "improved grazing land management" and "avoided conversion of grassland to cropland". Further, in chapter 5 (See 5.5.1.4,5.6.3) we are presented with "integrated responses to crop and livestock". In these proposals, some of the idea is that livestock can utilize resources that are otherwise wasted.
- They also recommend to consider a cross section box on livestock assessing merits of an output-optimized approach (i.e. emissions per unit output) compared to an input-optimized approach (i.e. including grazing land management, grazing strategies that are helpful for soil carbon, use of marginal resources, use of water and grasses from regions where such resources are plentiful etc.).
- Reviewers also pointed out the Inter-linkages between desertification, land degradation, food security and GHG fluxes: synergies, trade-offs and integrated response options.

The Chapter has improved considerably taking into all substantive and editorial comments from reviewers and the chapter is in a pretty good shape.

Signature:



Full Name: Amjad Abdulla

Date: 20 July 2019

Report by Professor Ian Noble, Review Editor for IPCC SCRRL Special Report  
Chpt 6

“Interlinkages between Desertification, Land Degradation, Food Security and  
GHG fluxes: synergies, trade-offs and Integrated Response Options”.

I attended the 3<sup>rd</sup> and 4<sup>th</sup> Lead Author Meetings in my role as Review Editor (RE) of Chpt 6 of the above IPCC Special Report. The chapter has three REs, Professor Yoshi Yamagata, who attended the 3<sup>rd</sup> LA meeting, Dr Taha Zatari, who was not able to attend either meeting, and me. All REs reviewed the comments and the authors’ responses for both meetings.

This chapter deals with the “Interlinkages between Desertification, Land Degradation, Food Security and GHG fluxes: synergies, trade-offs and Integrated Response Options”. As such it brings together the interactions between 40+ key issues discussed in the four preceding chapters.

The work was well led by the two CLAs with the participation of the entire writing team and the Chapter Scientists. At the meetings, both Prof Yamagata and I were welcomed into the drafting team and were able to provide advice while also confirming that major comments from reviewers were being taken into account.

There were 1128 comments on the Second Order Draft and 1430 for the Third. Most comments were on minor editorial points, points seeking greater clarity and suggestions for additional references. However, a common theme through both meetings was that the chapter had a very complex structure and was difficult to follow. The authors were already very much aware of its complexity and spent significant time at both meetings, and between meetings, seeking to simplify the structure to improve its readability and relevance to policy formulation.

My assessment is that the authors dealt with the comments effectively. They made extensive changes to the chapter in terms of clarifying wording, better referencing and in restructuring many sections. They also worked with other chapters to improve cross referencing and to reduce duplication.

There were no major contentious issues although on a few topics (e.g. biochar) differences in scientific assessment showed through, but the authors dealt objectively with those comments in their responses. The authors also clarified and justified their use of the relatively unfamiliar concept of “anthromes” as the most effective way of dealing with the global patterns of human-altered ecosystems.

In the Third Order Draft some reviewers still differed in their view about the coverage and structure of the chapter and sometimes it’s relationship to other chapters. A few provided multiple comments on this point sometimes with suggested alternatives. Many of these suggestions would have meant a major restructuring and redrafting of this, and sometimes other, chapters. At this stage the chapter has been through multiple reviews and by hundreds of reviewers. There is no right or wrong structure for a chapter with such cross-

cutting emphasis as Chpt 6, and the comments did not reflect on the accuracy or the main messages of the report. In my opinion the authors, selected for their expertise in this area, made significant structural changes to simplify and clarify the chapter but have had to reject the more unrealisable alternatives.

I commend the authors and Chapter Scientists for their efforts to bring together a difficult chapter and their diligence in taking account of reviewers' comments.

A handwritten signature in blue ink that reads "Ian Noble". The letters are cursive and fluid.

25 July 2019

Professor Ian Noble, Review Editor

## Report on Final Review Comments Chapter 6

I have reviewed the responses to the reviewers' comments.

My view is that the chapter final draft had responded to the comments adequately. The final draft has improved greatly by revising the sections and the explanation become clear. Reviewers comments are different in their views on the structure of chapters, but authors responded adequately by clarifying the descriptions of each chapters.

In this chapter, there are some policy relevant important messages regarding the whole report such as the SDGs implications of the sustainability of BECCS. There are some policy relevant sensitive issues regarding the differences among scientific literatures.

The authors successfully created the final assessment using useful tables and figures that integrate various assessment results. Especially, I view that it is important that implications of large-scale biomass implementation were included in the final report with enough number of literature reviews.

Yoshiki Yamagata

A handwritten signature in black ink, appearing to read 'Yamagata', written in a cursive style.



# **Review Report on Chapter 6 of SRCCL Interlinkages between Desertification, Land Degradation, Food Security and GHG fluxes: synergies, trade-offs and Integrated Response Options**

**Taha M. Zatari**

I have reviewed final draft of the sixth chapter of the IPCC Special Report on Climate Change and Land (SRCCL).

The chapter illustrates interlinkages between sustainable land management options to deliver climate change mitigation and adaptation, to prevent desertification and land degradation, to enhance food security and to assess reported impacts on ecosystems services and their contributions to the UN SDGs.

The authors, during the process of development of this chapter, have taken into consideration and responded to all of the editorial, substance, references and language uncertainty issues raised by reviewers and addressed them positively and objectively. The following points have been noted.

- The authors have responded to all of the 101 reviewers' 1430 comments which included 894 substance, 429 editorial, 68 references and 39 uncertainty language comments.
- The authors have accepted and positively addressed a large number of those comments. Nearly all of the editorial and reference comments have been addressed by the authors.
- This final draft of the chapter is a significant improvement over its previous drafts.
- The executive summary has been modified to be more explicit and inclusive. More examples and quantification statements have been added.
- The issues of repetitions within and with other chapters raised by reviewers have been addressed.
- The authors have revised chapter 6.4 to be quantitative in approach based on the recommendations of the reviewers.
- The text in reference to the tables and figures in the chapter has been expanded to clarify the theme.
- Some of the subheadings in the chapter have been revised to shorter and easy to understand subheadings on the reviewers' suggestions.
- Reviewers' suggestions regarding uncertainty statements have been revisited and revised where strong conclusion was drawn based on weak or limited evidence. All such statements have been revisited and revised.

- A huge number of rewording for whole chapter including executive summary has been accepted and adopted by the authors.
- Overlapping issues have been addressed by cross referencing.
- Figure 6.1 has been redrawn and new caption added to address carbon fluxes and non-CO<sub>2</sub> GHG factors influencing climate.
- Risk management has been added in chapter.

The literature survey has been further expanded and strengthened to cover this vast subject and to give credibility to the chapter and its inferences. Some issues have been dealt in more details than others.

The authors have succeeded in their effort of structuring a chapter of complex issues into a simpler and understandable form. The figures have been made simple and reflective of the contents.

The contents of chapter 6 cover all of the topics proposed as outline of the chapter adopted by the IPCC at its 45<sup>th</sup> Session. However, the size of the chapter has exceeded the allocated limit of ~40 pages. Although, I can understand that these vast subjects outlined above can't be covered in just ~40 pages

The chapter has included five case studies (Box 6.1 A-E) located in different world regions as stated in the outline, but have not included other region(s). Some parties have asked for regional balance by covering other regions in the case studies.

The overall chapter in its current form is satisfactory and addresses all of the relevant issues.

Taha M. Zatari  
Review Editor, Chapter 6, SRCCL

## Final Report - IPCC SRCCL - Chapter 7

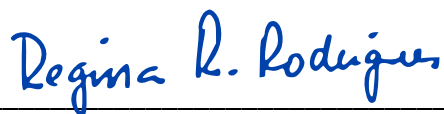
Review Editor: Regina R. Rodrigues

Several reviewers noted that the section on decision making was general in kind and should be concrete with examples as the concern to land-based decisions and that a case study would prove useful. However, this was challenging as other reviewers had asked to be more generic and to avoid using specific examples. In the end, the Coordinating Lead Authors and Lead Authors managed to balance the two approaches by including concisely in the text generic findings relevant to many countries, leaving some more specific examples in boxes, as case studies.

There was also criticism by some reviewers of the definition and discussion on risk during the first round of review, related to the First Order Draft. But once again, the Coordinating Lead Authors and Lead Authors, with the help of the Technical Supporting Unit, handled this very well. Extensively discussed during the 3<sup>rd</sup> Lead Author Meeting in Dublin provided a standard definition of risk that was consistent with previous IPCC reports and used in other SRCCL chapters.

Vast improvement was also made in relation to the Figures and Executive Summary of Chapter 7 from the First and Second Order Draft to the Third Order Draft, in response to specific requests from many reviewers.

Therefore, in my view, the work of the Coordinating Lead Authors and Lead Authors on responding to the review comments was excellent.



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Dr Regina Rodrigues Rodrigues  
Federal University of Santa Catarina  
Department of Oceanography  
Florianópolis, SC, Brazil

## Chapter 7 Comments: B. L. Turner II

Overall, C7 captures the state-of-the-art/science as it applies to its assigned topic. It lays out the main issues and problems of climate change in the land sector, foremost those identified through international programs assessing the impacts of and possible responses. It is noteworthy that C7 treats the policy dimensions (7.5) fairly, recognizing that research community at large is not sufficiently advanced to prescribe the level of specificity about evidence and agreement that can be applied in other sections of IPCC considerations. (Note that my core expertise resides in those sections of C7 section 7.5, whereas that for 7.5 I assign myself modest expertise.)

A few issues to consider.

Throughout C7 there are sentences/phrases that are correct, assuming appropriate interpretation of them. These could easily be rephrased to add clarity. Examples include:

- Page 4, line 10: “components” apparently refer to the list of items preceding the sentence but those items were not identified as components.
- Page 4: Line 22-23 appears to have a missing word: “inadequately shielded from” should be “shielded them from”
- Page 13: Line 23: all people are dependent on agricultural production; I think the intent is to say that these people are dependent on local or subsistence production.
- Throughout are various statements that “policies” can deal with x or y, but as stated imply that “any” policy can do so, as opposed to appropriate policy.

7.3.2.2 No mention is made of the positives that may come from in *international* food linkages, especially when they serve as safety nets as in famines. Note that on page 60, line 23, the positives of *global* safety nets would appear to contradict the absence of any positives from international food linkages.

7.3.2.7 There are very recent reports that permafrost thawing is well ahead of projected estimates. Perhaps this evidence is too recent to include.

7.5.4.2 carbon pricing and 7.5.6.2. PES are well treated but do not identify as an issue the inappropriate cost for carbon or other services that follow from adding non-carbon and non-services to policy, such as REDD+.