| Chapter | From Page | From Line | To Page | To Line | Comment | Response |
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| General | 0 | 0 | 0 | 0 | My comment concerns the topic 'inland and coastal flooding' and related landslides and erosion. Traditionally, this topic makes part of the scope of the hydrological science, not the climate science. According to the hydrological science, the predominant risk factors for 'inland and coastal flooding' are human interventions in river catchment areas and in delta's. Such interventions comprise: (1) deforestation and logging, (2) canalisation, (3) inappropriate agricultural practices, (4) urban development of flood plains and (5) land subsidence due to groundwater mining and urban drainage. In particular in coastal megacities, land subsidence still occurs at rates up to 100-200 mm/year, which is far more than the projected sea level rise.<br><br>Question: why are these risk factors not explicitly mentioned in the report?<br><br>Climate change (precipitation pattern, seal level rise) may indeed worsen these problems. But it's certainly not the main cause. Hence, IPPC's problem analysis is misleading. Moreover: it's also counterproductive because it provides to local governments an excuse to refrain from appropriate measures to effectively curb abovementioned trends.<br><br>My comment relates to the following sections of the SYR. SPM (because it's policy relevant) and Ch 2.5 in general. In particular to Ch 2.5.2, page 66 and Table 2.3 ('key sectoral risks').<br>[Bert Amesz, Netherlands] | Taken into account. Risks from "Inland and coastal flooding" are now explicitly mentioned in Topic 2, Section 2.3. |

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| General | 0 | 0 | 0 | 0 | In few places, the authors use british spelling (eg colour), but mostly american "color", or "behavior" is used. Please check for consistency [Lena Menzel, Germany] | adjusted |
| General | 0 | 0 | 0 | 0 | Some confidence levels are not in italics [Lena Menzel, Germany] | adjusted |
| General | 0 | 0 | 0 | 0 | Please be consistent for units you provide for something per year, as for example "/yr", or "yr (superscript -1)" [Lena Menzel, Germany] | adjusted |
| General | 0 | 0 | 0 | 0 | Please check if superscript or normal for 21th, 20th etc., as this is not consistent yet. [Lena Menzel, Germany] | adjusted |
| General | 0 | 0 | 0 | 0 | Check if "comma" or "semicolon" is needed between the references, there are few mistakes in the use of , or ; [Lena Menzel, Germany] | adjusted |
| General | 0 | 0 | 0 | 0 | For layout consistency, the authors should decide if the scales in graphs should have inner tickmarks or outer tickmarks [Lena Menzel, Germany] | has been checked |
| General | 0 | 0 | 0 | 0 | It would be helpful if panels of all figures were named with a,b,c, and so on. This would avoid long and confusing captions as for example in Figure 1.1 in Topic 1 "Left column, top panel", "Left column, middle panel", "Left column, bottom panel" [Lena Menzel, Germany] | adjusted |
| General | 0 | 0 | 0 | 0 | Check section capitalization of headings and figure headings [Lena Menzel, Germany] | adjusted |
| General | 0 | 0 | 0 | 0 | Some graphs would be better to understand if a legend would be provided. However, due to page constraints and readability of (in many places very rich) composed figures, this may not always be possible. Please check the best compromise for readability, information and space constraints for the figures. [Lena Menzel, Germany] | accepted |
| General | 0 | 0 | 0 | 0 | In some places, there are typos in the references to WGI, WGII, WGIII. For example, it reads WG1 instead of WGI, or WG11 instead of WGII. Moreover, "WG-I" and "WGI" , with or without a minus between the letters, is mixed. [Lena Menzel, Germany] | adjusted |

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| General | 0 | 0 | 0 | 0 | Parts 1, 2, 4 and UNFCCC Box use ppm for CO2, only part 3 uses ppmv in some sections. Part 3 should be edited to read "ppm". In the SPM, ppm is used consistently throughout all parts, also in part 3. [Lena Menzel, Germany] | All references are now to ppm. |
| General | 0 | 0 | 0 | 0 | WGI contributions to SPM and SYR: when mean numbers are given, they are accompanied by the range or plus/minus a number. This is already very condensed compared to the comprehensive information in the WGI chapters. But: does the audience expected to read the Synthesis Report and SPM need these numbers? are the ranges relevant for policy making? [Lena Menzel, Germany] | yes, it gives an indication of the ranges, which is policy relevant |
| General | 0 | 0 | 0 | 0 | spelling of "Cancun" and "Cancún" is inconsistent. Please check for consistency throughout SYR. [Lena Menzel, Germany] | adjusted |
| General | 0 | 0 | 0 | 0 | This Brief Report will be a valuable resource for scientists, professionals and the general public, in relation to the last results and conclusions about Climate Change. [Government of Argentina] | Thank you, noted |
| General | 0 | 0 | | | The way of displaying units is not consistent at all across SYR.We suggest to use WGI style guide :<br>- Use () around units<br>- instead of / use negative power (exception : per decade is written as it)<br>- CO2-equivalent is CO2-eq with a dash<br>Or choose an other convention but everything has to be harmonized [Thomas Stocker/ WGI TSU, Switzerland] | is harmonised |
| General | 0 | 0 | | | WGI Co-Chair / TSU review comments have been prepared by Thomas Stocker, Gian-Kasper Plattner, Flavio Lehner, and Adrien Michel [Thomas Stocker/ WGI TSU, Switzerland] | noted |
| General | 0 | | | | More balance between mitigation and adaptation is required. Mitigation is treated broadly trough sections: 4.1 Mitigation Measures, and 4.2 Mitigation Policies. Adaptation appears under 4.3 Adaptation Measures. A section on Adaptation Policies is required. [Government of Cuba] | has been incorporated |
| General | 0 | | | | Finance and cost, for adaptation and mitigation, deserve more political attention, as well as the challenges the required measures represent for social and economic development, particularly for developing countries. [Government of Cuba] | is incorporated |
| General | 0 | | | | The equity dimension, in relation to sustainable development, capacities and finance, should be incorporated in the SYR assessment. [Government of Cuba] | The SPM now has a section 3.1 on Foundations of decision making for climate change that discusses the ethical and equity dimensions: Mitigation and adaptation raise issues of equity, justice, and fairness and have implications for sustainable development and poverty eradication. Many of those most vulnerable to climate change are among the least responsible for GHG emissions. |
| General | 0 | | | | Better integration of WGII and WGIII materials is need in the current draft SYR. [Government of Cuba] | has been done mainly in topic 3-4 |

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| General | 0 | | | | Adaptation – mitigation – co-benefits – feedbacks and side effects should be consistently treated in the SYR. [Government of Cuba] | accepted |
| General | 0 | | | | First and foremost, we would like to thank the author team for the considerable efforts they have put into synthesizing the hugh amount of information contained in the contributions of all IPCC Working Groups into one draft synthesis report. The draft is already on a very good way - our comments are intended to further sharpen and improve this draft. [Government of Germany] | thanks and noted |
| General | 0 | | | | The references to the underlying reports should be harmonized and clear indications of the relevant working group should be added. References should be added for all relevant statements. Square brackets should be used as in the SPMs of the AR5. Uncertainty statements should be printed in italics. [Government of Germany] | has been checked |
| General | 0 | | | | The Synthesis Report should "synthesize and integrate materials contained within the AR5 Assessment Reports in a non-technical style" as stated in the IPCC Procedures. However, currently the SYR and its SPM rather read like Summaries of the SPMs of the WG-contributions than a real Synthesis Report with additional benefits. The SYR should not copy material from the WG reports, but provide an integrated view of all aspects related to climate changes including changes in the Earth system, their impacts and potential response options for mitigation and adaptation, linking to sustainable development and climate resilience. Integrated information should be provided for example on risks and costs for climate change impacts and response options. Uncertainties and knowledge gaps must be clearly communicated. In addition, the clarity of the language should be improved and scientific jargon should be avoided. Key messages should be conveyed in figures integrating information from all three WGs. These can be specifically produced for the Synthesis Report in support of communication of the most important findings. Numbers and figures provided must be supported by explaining text for non-academic readers. [Government of Germany] | Noted. Much more synthesis has been included (e.g. fig SPM.9, many sections in topic 3&4). Non-technical language has been worked on. |
| General | 0 | | | | Please avoid that the text in bold or in the headline statements is repeated verbatim in the paragraph that follows. [Government of Germany] | has been checked |
| General | 0 | | | | The statements on adaptation take a broad perspective and include many factors, contexts and circumstances, according to the approach taken by WG2. For example, the statement on P 21 L 14 ff "Desired adaptation outcomes and pathways to these usually require effective engagement with the range of affected stakeholders, operating in a decision environment with policy support to overcome constraints at various levels." This statement would also be true for mitigation, but the text from WG3 has a more narrow focus on mitigation actions. This leads to the incorrect impression that the integrated view does not apply for WG3. Please explain the different concepts in order to avoid this misunderstanding. [Government of Germany] | The SPM now has a section 3.1 on Foundations of decision making for climate change that discusses the factors inavolved in both adaptation and mitigation. |

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| General | 0 | | | | Auxiliary words (can, may, might etc.) are extensively used in the SYR, e.g. P 25 L 29, sometimes with uncertainty qualifiers, e.g. P 25 L 38. This makes many statements sound vague or even trivial and the messages are not helpful. Please be as concrete and as precise as possible. [Government of Germany] | has been checked |
| General | 0 | | | | Throughout the SYR and its SPM many headline statements as well as many highlighted statements printed in bold do not contain statements on the confidence or likelihood level, e.g. on P 15, P 22. It is however important for the credibility of the IPCC that the facts are communicated together with the related uncertainty in a clear manner. Please add this information throughout the SYR whenever relevant. [Government of Germany] | Where possible we include uncertainty statements in bold lines. |
| General | 0 | | | | Please ensure consistency of information from projected climate change between WG1 and WG3. If necessary, please harmonize (reference levels, target years, CO2 or CO2eq), or if they differ, please provide the reasons for this. This concerns in particular, statements concerning temperature increase or cumulative emissions. With this information provided, merge the WG1 and WG3 information as much as possible to avoid confusion for the readers, e.g. in Figure SPM.9, don't do two different panels but a single panel on temparture projections for different RCPs and scenario categories. [Government of Germany] | agrred and has been improved |
| General | 0 | | | | Please introduce the concept of risk arising from vulnerability, exposure and hazard, and apply this to impacts from climate change but also to response strategies in an integrated manner. It is suggested to copy the para on SYR P 46 L 1-9 into the SPM. The statements on risks that are distributed over the SPM in the current version should be presented in a more accessible way (currently the information is scattered in paras starting on P 13 L 26, P 14 L 21, P 22, P 26 L 1) and add information on key vulnerabilities including the reasons for concern. [Government of Germany] | The box on risks has been improved accordingly |
| General | 0 | | | | N.B. Statements in “quotation marks” and italics are quoted from the IPCC AR5. My comments are divided into three sections and one appendix. [Peter Carter, Canada] | noted |
| General | 0 | | | | SECTION 1 - This section makes general comments about my review of the SYR SPM. [Peter Carter, Canada] | noted |
| General | 0 | | | | SECTION 2 - This section gives essential short extracts of the SYR (almost all from the SPM, and from WG I and WG II content) that must be retained as written for the SPM (no compromise by IPCC policy makers), except for a few essential changes, additions or deletions I have made that are policy-relevant and key for understanding the SYR SPM. Rationales are given where I deemed them necessary. [Peter Carter, Canada] | noted |
| General | 0 | | | | * “This requires an emergency mitigation response” will hereinafter be denoted by the term “Emergency” and indicates that we are beyond DAI. [Peter Carter, Canada] | noted |

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| General | 0 | | | | SECTION 3 - The following are fundamental flaws and gross errors in the SYR SPM that are dangerously policy-misleading and must be corrected. Some of these errors will lead us to planetary catastrophe rather than prevent it. [Peter Carter, Canada] | noted |
| General | 0 | | | | ** APPENDIX: MAJOR ERROR (DAI) [Peter Carter, Canada] | Since this is a general comment, we don't know what you are referring to |
| General | 0 | | | | Numerous cases of double full stops, missing spaces and other minor copy editing issues which I am assuming will be caught and you don't want or need ten comments pointing out each one from pedants like me … [Peter Thorne, Norway] | adjusted |
| General | 0 | | | | There sees to be some degree of inconsistecy across the SYR as a whole on how tropical cyclones are characterized. Would suggest that all these bullets be pulled out into a single document and reconciled to ensure they are truly consistent [Peter Thorne, Norway] | has been checked |
| General | 0 | | | | In some limited number of cases cross-refs have been added as footnotes rather than {section}. [Peter Thorne, Norway] | adjusted |
| General | 0 | | | | WG citation should be harmonized, some times it uses Arabic numbers, some times roman ones. Some times AR5 is written, some times not. Some times it is a dash between the WG and the chapter, some time not [Thomas Stocker/ WGI TSU, Switzerland] | adjusted |
| General | 1 | 1 | 1 | 1 | I am very sorry that I did not spend more time reviewing, I simmply diid not have the time, given more time I would have provided more technical and detailed feedback [Jason Fitzsimmonz, England] | noted |
| General | 1 | 1 | 120 | 34 | The report failes to synthesize. WG2 reports on the total and marginal impact of climate change. WG3 reports on the total and marginal impact of climate policy. So why doesn't the synthesis report compare the two? [Richard Tol, United Kingdom] | Noted. Much more synthesis has been included (e.g. fig SPM.9, many sections in topic 3&4). |
| General | 1 | 1 | 120 | 34 | In most parts, the report uses CO2eq, but in some figures it also uses C, e.g.Fig 1.3 SYR-36. In my view, it would be preferable to convert all numbers to the same unit to facilitate interpretation. [Helmut Haberl, Austria] | we aim to use only CO2eq, unless C is strictly necessary |
| General | 1 | 1 | 120 | 34 | Throughout the report and the SPM there seems to be confusion about reference temperature levels. What is pre-industrial: e.g. 1850-1900 (global), e.g. 1800-1870 (NH), e.g. 1000-1900 (NH) or 1000-1900 (global). There is up to 0.5°C difference between these values which has huge implications regarding CO2-budgets. If the T-levels cannot be made consistent there should at least be consideration about the implications of different choices. [Jochen Harnisch, Germany] | we will harmonise this |
| General | 1 | 12 | 1 | 12 | to add: Fifth Assessment Report, this will be an indication that this is part of series of reports for whom who are new to the subject. I know that this is not precedented but could be a good addition. [Nedal Katbeh-Bader, Other - Palestine] | adjusted |
| General | 1 | | | | I note that the order of Topics 3 and 4 has been reversed from the original Scoping document (Annex 4). [Stewart Cohen, Canada] | noted |

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| General | 2 | 34 | 2 | 34 | For three working groups, Ssome scientists need to be made the memory such as Bert Bolin, not only S.H.Schneider. [Zong-Ci Zhao, China] | rejected: Panel decision IPCC-32 |
| General | 3 | 12 | 3 | 13 | to add a new line / topic on: Adaptation policies, after adaptation measures. This is important for many reasons including: to be consistent with mitigation that mentioned before it (Mitigation Measures, Mitigation policies). In addition, to give adaptation and mitigation equal importance and should be treated equally, and not to send a wrong message that Mitigation is of higher value than mitigation, taking into consideration that Adaptation is of high importance to developing countries. Also, adaptation policies is already covered in section 4.5.2. [Nedal Katbeh-Bader, Other - Palestine] | has been changed indeed |
| General | 3 | 13 | 3 | 13 | to change the words (Interactions among) to (Nexus) which may indicate to both interrelations and interactions. [Nedal Katbeh-Bader, Other - Palestine] | section titles have been reconsidered |
| General | 3 | 20 | 3 | 22 | deleting "changes", only keeping "ocean", "sea level" for the consistency with "atmosphere", "cryosphere". [Zong-Ci Zhao, China] | section titles have been reconsidered |
| General | 3 | 29 | 3 | 29 | to add after the word extreme: weather and climate events. [Nedal Katbeh-Bader, Other - Palestine] | section titles have been reconsidered |
| General | 3 | 31 | 3 | 31 | to delete the word: Recent. [Nedal Katbeh-Bader, Other - Palestine] | section titles have been reconsidered |
| General | 3 | 50 | 3 | 50 | to delete the word: (evolving). [Nedal Katbeh-Bader, Other - Palestine] | section titles have been reconsidered |
| General | 3 | 51 | 3 | 51 | to delete the word: (evolving). [Nedal Katbeh-Bader, Other - Palestine] | section titles have been reconsidered |
| General | 3 | 53 | 3 | 53 | to change the words (Interactions among) to (Nexus) which may indicate to both interrelations and interactions. [Nedal Katbeh-Bader, Other - Palestine] | section titles have been reconsidered |
| General | 3 | 54 | 3 | 54 | to add after Co-benefits: of Mitigation and Adaptation. In order to be clear , linked to Climate issue and not to be vague. [Nedal Katbeh-Bader, Other - Palestine] | section titles have been reconsidered |
| General | 4 | 5 | 4 | 5 | to add after technology development: and [Nedal Katbeh-Bader, Other - Palestine] | section titles have been reconsidered |
| General | 16 | 10 | 16 | 12 | "zero- and low-carbon energy" is mentioned here but at other parts, for instance, at the note of Figure SPM 8, just "low-carbon energy" at line 4 is used although at line 13 of the same note "Zero- and low-carbon energy" is used. It is not defined "low-carbon energy" and "fossil energy with carbon dioxide capture and storage" explicitly. [Takashi Hongo, Japan] | Figure SPM 12 defines: Zero- and low-carbon energy supply includes renewables, nuclear energy, and fossil energy with carbon dioxide capture and storage (CCS), or bioenergy with CCS (BECCS). |

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| General | 17 | 8 | 12 | | Original text states: "For medium- to high-emission scenarios (RCP4.5, 6.0, and 8.5), ocean acidification poses substantial risks to marine ecosystems, especially polar ecosystems and coral reefs, associated with impacts on the physiology, behavior, and population dynamics of individual species from phytoplankton to animals (medium to high confidence)." The massive body of new science on impacts of acidifciation, especially in warm water corals, is exceptionally difficult to synthesize, especially verbally. I recently worked with several collagues to do this for a section of a book chapter (Bruno, J.F., C.D.G. Harley, and M.T. Burrows. 2013. Climate change and marine communities. In: Bertness, M.D., B.R. Silliman, J.F. Bruno and J.J. Stachowicz (eds.) Marine community ecology and conservation. Sinauer, Sunderland, MA). In general, we felt the literture was trending away from the statement in this report; ie, the risk for large impacts seems to be diminishing as new science becomes available and better experiments are performed, especially for RCP 4.5 and 6.0. E.g., some text from our review: "A meta-analysis of the response of scleractin- ian corals to experimental acidification (Chan and Connelly 2013) concluded that “under business as usual conditions, declines in coral calcification by end-of-century will be ~22%.” This conclusion is similar to that of the meta-analysis by Kroeker and colleagues (2013), but contrasts with that of Edmunds and colleagues (2012), who found little evidence of a general relationship between seawater pH and coral calcification. Such variable outcomes and interpretations unfortunately characterize even the synthetic literature on OA experiments (e.g., see Hendriks et al. 2010 versus Kroeker 2010), obscuring simple take-home lessons rel- evant to policy makers and nonspecialists." [John Bruno, United States of America] | This comment is appreciated (unfortunately not traceable to the reviewed SYR version) and reflects the diversity of findings in various species. It does however not reflect the picture emerging from recent meta-analyses, e.g. Kroeker et al. (2013) for biogeochemical processes, Wittmann and Pörtner, (2013) for species sensitivity distribution which were instrumental in sorting and putting such diversity into perspective. The distribution of sensitivity within taxa supports statements on their relative vulnerability. |
| General | 17 | 12 | 12 | | This is a comment on the section "Marine systems" under the section "B-2. Sectoral Risks and Potential for Adaptation" line 12, orginal text: "and reef-building corals are more sensitive than crustaceans…" I would add SOME reef-building corals… as there is very large variance among coral species in the repsonse to experimental pCO2 in laboratory microcosms. Also, I dont think the data really support the general ranking of taxa-specific sensitvity (due to large varince among species, within taxa and the small proportion of sampled species for many taxa). Thus I would reduce confidence in this statement. [John Bruno, United States of America] | This comment is appreciated (unfortunately not traceable to the reviewed SYR version, it possibly refers to WGII SPM) and reflects the diversity of findings in various species. It does however not reflect the picture emerging from recent meta-analyses, e.g. Kroeker et al. (2013) for biogeochemical processes, or Wittmann and Pörtner, (2013) for species sensitivity distribution which were instrumental in sorting and putting such diversity into perspective. The distribution of sensitivity within taxa and depending on CO2 concentration supports statements on their relative vulnerability. Confidence levels have been differentiated depending on the comparison made. |

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| General | 18 | 14 | 81 | 19 | The claim regarding limited effects on long term concentration lacks explicit reference and basis for judement. The bold text needs to be reforumlated to reflect both the cost effective mitigation potential in the short term and the uncertainties regarding these estimations. For instance in SPM WG1 it explicitly mentions "these values should be understood as indicative only, as the climate forcing resulting from all drivers varies between models due to specific model characteristics and treatment of short-lived climate forcers". What could be better reflected however is that near term climate forces effect on climate is predominantly in the near term following their emission (WG1) [Government of Sweden] | Taken into account. The text was reformulated to more clarify the point that, in the long-run, CO2 concentrations will be the dominant forcing agent. However, there is insufficient room to discuss the various nuances of different ways that non-CO2 mitigation might fit within a cost-effective mitigation framework. |
| General | 26 | 52 | 26 | 52 | To include: considering that transformation implies A change in the fundamental attributes of natural and human systems. Within this summary, transformation could reflect strengthened, altered, or aligned paradigms, goals, or values towards promoting adaptation for sustainable development, including poverty reduction. [Government of Bolivia] | Defined in Glossary as agreed by WGII&III approval sessions |
| General | | 34 | | 34 | IPCC has successfully completed five assessment reports with remarkable contribution from many outstanding scientists. The Synthesis Report should also pay tribute to many other scientists who have made major contribution and passed away. [Government of China] | thank you and noted |
| General | | | | | References to the SPMs of the contributions of Working Groups I, II and III should be prioritized throughtout the SYR and made as complete as possible, with designation of sections of the Summaries related to the issues on the SYR. Also, the SPM of SYR should be consistente withe SPMs of the WGs. For instance, tables and figures should be coherent with the ones in the SPMs of WGs I, II and III. [Government of Brazil] | Agreed, except for the synthesis parts |
| General | | | | | Well written and brings out clearly the findings of WGI, II,&II as well as the two special reports.However, most figures and some tables are extremely faint, thus making reading and reference to them very difficult. [Government of Kenya] | Thank you. Remark on figures and tables is well taken; we will work on it. |
| General | | | | | A COMPREHENSIVE AND WELL BALANCED DOCUMENT FOR A FOD. [NIRIVOLOLONA RAHOLIJAO, MADAGASCAR] | thank you and noted |
| General | | | | | The Netherlands finds this an excellent draft, but it still has a major omission: it lacks true synthesis. A SyR should include a synthesis of the working group (SPM) conclusions and not in copy paste form. The latter does not lead to added value but merely to a summary of the three SPMs. His cannot be the purpose of the SyR. We will make several suggestions to remedy this deficit further down. [Government of Netherlands] | noted |

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| General | | | | | There seem to be two "languages" or "definitions" concerning emission scenarios. RCPs (which are the main focus of topic 2) and baselines (measured in ppm, mainly used in topics 3 and 4). There is a lot of overlap between these and even though attempts are made to reconcile them (such as table 3.1), it is still unclear why these two are needed and where exactly they differ. I propose to have a box early on in the roport explaining thier purpose, differences, similarities and how they can be interpreted/used/compared. [Government of Netherlands] | Taken into account. We have added Box 2.2: The 'Representative Concentration Pathways' (RCPs). The box describes the basic characteristics of the RCPs and compares them to the wide range of scenarios in the mitigation literature assessed by WGIII. In addition, the RCPs are placed into contex with regard to scenarios used in earlier IPCC assessments, such as the SRES scenarios. |
| General | | | | | Sustainable development is mentioned abstractly multiple time (especially in Topic 3). However its goals and means are not defined anywhwere [Government of Netherlands] | There is insufficient space in the SPM to define the goals and means of sustainable development, which are discussed in underlying chapters (WGII ch 20, WGIII ch 4). |
| General | | | | | As it is extremely policy relevant to understand the consequences of delayed action/mitigation. We suggest to include a figure like the ones in the UNEP app (https://itunes.apple.com/nl/app/the-emissions-gap/id731897736?mt=8) or to compile comparable figures from WG reports. [Government of Netherlands] | Table SPM.2 has been added |
| General | | | | | The policy relevance of some of the figures from the synthesis report would increase if they would be represented by an interactive infographic in the online document, by allowing the user to select the variables. This is especially valuable for figures SPM.2, SPM.5b, SPM.6 right side, SPM.7, Figure 2.2(c) (Arctic sea ice in September based on satellite imagery from NASA on a map evolving in time), figure 2.8, [Government of Netherlands] | Out of our mandate, but certainly worth it |
| General | | | | | RCP2 scenario is presented throughout the report as a credible possibility to policy makers, however, it is clear that current evidence show that RCP2 scenario will not be achievable given current fossil fuel use and the fact that in the later period of this century negative carbon emissions will be required. Current projections show that it is more likely that the RCP8.5 scenario is more likely. Clarity is needed for policy makers to ensure that they understand the gravity of the situation and act accordingly. [David Gale, United Kingdom of Great Britain & Northern Ireland] | is included in topic 3 |
| General | | | | | It is not comprehensively clear from the report what the higher RCP scenarios, such as the RCP 8.5, will mean for a future world. Policy makers and the Public should be made aware of the effects and consequences of the higher temperature RCP scenarios as these scenarios are more likley due to current trajectories given that GHG emissions are not being reduced at the rate requried to achieve RCP scenarios of lower GHG emissions. This report needs to be more hard hitting in order for policy makers to realise the potential scope of man made climate change and to engender a sense of urgency in the instigation of approproate positive action by Governments and others to reduce GHG emissions in the shortest timeframe possible. [David Gale, United Kingdom of Great Britain & Northern Ireland] | The Art. 2 box is meant to do so. |

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| General | | | | | Lack of consistency with approved texts as appeared in adopted SPMs (WGI, WGII, WGIII) • It is surprising that controversial issues have been re-introduced in SYR and its SPM.<br><br>• We strongly advice to introduce texts and issues that we already approved during adoption of 3 SPMs (WGI, WGII, and WGIII).<br><br>• Otherwise what were the needs and requirements spending weeks to adopt texts in SPMs we are not going to utilize for a successful outcome of AR5.<br>[Government of Saudi Arabia] | We will use approved texts and figures as much as possible, but synthesis sometimes requires new tekst / figures |
| General | | | | | It is highly recommended that the report include a glossary for the terms used in order to help the target readr especially decision and policy makers to understand the new introduced terminology. i.e virtually certain, likely, .. [Nedal Katbeh-Bader, Other - Palestine] | has been included |

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| General | | | | | The Chinese government appreciates the author team and the Technical Support Unit (TSU) of the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC) for their contribution to the preparation of this report and wishes to take this opportunity to make the following comments on it in the hope that they can be adopted in the modification process.<br><br>I. Robust findings and key uncertainties. It is recalled that in the Synthesis Report of AR4, there was a dedicated Section 6 to summarize the robust findings and key uncertainties of the Fourth IPCC Assessment Report. That section informed the international community of the progress and findings made by scientific research, and enlightened the community as to where to go next. As noted, however, no similar summary is found in the current Synthesis Report of AR5. It is suggested, therefore, that either a separate section or some additional text on robust findings and key uncertainties be accommodated into the current structure of the report.<br><br>II. Box on Article 2 of the Convention. Article 2 involves a long term objective to stabilize GHG concentrations in the atmosphere at a level that 1) would prevent dangerous anthropogenic interference with the climate system, and 2) should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure the food production is not threatened and to enable economic development to proceed in a sustainable manner. It is our view that the text in this box, while being kept concise, should cover all the afore-mentioned elements stated in Article 2. In addition to the risks under different temperature rise scenarios, the box should also include descriptions on the preconditions required for achieving stabilization at a given concentration level including their interaction with food production and economic sustainability.<br><br>III. Aspects to be rebalanced. In its preface, the Summary for Policymakers (SPM) of the Synthesis Report mentions equity, fairness, justice and ethics, which however are not found in the subsequent underlying report any more. It is suggested that those elements be fortified by additional paragraphs in the SPM and the underlying report. Moreover, as the subjects of climate change adaptation, international cooperation and technology transfer are given inadequate emphasis, it is suggested that the length of texts on adaptation and mitigation should be adjusted to strike a balance between the two subjects and that texts be added to illustrate international cooperation and technology transfer . [Government of China] | Changes compared to AR4 will be presented in outreach events |
| General | | | | | Authors are encouraged to seek every opportunity to reduce the length of this document and improve the clarity and simplicity of the figures. Specific comments below identify more specific suggestions. [Government of United States of America] | Noted |
| General | | | | | Thank you for the good work for all authors! [Kaisa Kosonen, Finland] | thank you and noted |

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| General | | | | | There are many alarming observations of accelerating impacts in the last decade or two. It would be great to bring these (ice sheet loss, Arctic sea-ice melt and sea-level rise) into one para that makes an overall recognition of accelerating, non-linear impacts. [Kaisa Kosonen, Finland] | To our knowledge, there is no peer-reviewed literature that allows to make this assessment of general acceleration for impacts, and findings on the physical climate side were not considered robust enough to elevant to SYR SPM. |
| General | | | | | What should be lifted from the underlying text (page 30) to the SPM is this very important notion: "unlikely events may be more important to decision-making than likely events if their consequences are extremely harmful." [Kaisa Kosonen, Finland] | Section 3.1 on Foundations of decision-making emphasizes that "For balanced decision making, analytic methods of valuation from economics and decision analysis are available, which can reflect ethical dimensions. . These methods cannot identify a single best balance between mitigation, adaptation, and residual climate impacts, but they can take account of the full range of possible impacts, including low-probability outcomes with large consequences." |
| General | | | | | The issue of co-benefits would deserve a more prominent role in the SPM. [Kaisa Kosonen, Finland] | Box Co-benefits is included, also in SPM |
| General | | | | | Taking into account that WGII had two chapters on oceans, the SPM could give oceans a bit more focus too. [Kaisa Kosonen, Finland] | Now in headline SPM1.1 / 1.3 / 2.2 and tekst SPM2.4 |
| General | | | | | The current text does not reflect the Plenary-approved version of WG3 report. SYR is supposed to synthesize the findings across WG1, 2, 3, but is not supposed to override the wordings of individual WG. The followings, at least, have to be redrafted by reflecting the WG3 report:<br>p97 fig 4.2; the figure should be revised by approved figure in WG3 SPM.<br>p99: the statements on renewable technology and nuclear technologies have to be revised using wordings in WG3 SPM.<br>p107 4.5.1.2: the description regarding national policy have to use wordings in WG3 report.<br>p114 table 4.6 should be replaced by WG3 SPM or TS.<br>[Taishi SUGIYAMA, Japan] | adjusted where appropriate |
| General | | | | | Even a cursory look at the table of contents reveals there may be a problem with redundancy and flow (with three individual mitigation sections, two adaptation sections, and two sections on the interaction between mitigation and adaptation). Even within sections that are titled as either "mitigation" or "adaptation" both are discussed. For the sake of making this a simpler, shorter, and easier-to-undertand document, strongly recommend the following simplified re-ordering and labeling of the SPM with a parallel structure in the rest of the underlying document: 1) Observed Changes; 2) Future Climate Changes, Risks, and Impacts; 3) Transformations and Changes in Systems; 3.1) Adaptation; 3.2) Mitigation; 3.3) Interactions Among Adaptation, Mitigation, and Sustainable Development. [Government of United States of America] | Topic 3 and 4 have been adjusted |

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| General | | | | | A lot of the figures generally seem very condensed, hence they need to be bigger in the report. Some figures might be parted into more than one figure to be more readable. Especially for policymakers and non-scientific persones, who will also be presented with the figures, easily understandable illustrations are preferred. [Government of Denmark] | adjusted |
| General | | | | | The report is evidently much longer than set out in the scoping [Government of Denmark] | In general, the sections are within their word limitations. However, that does not include boxes and tables and figures. |
| General | | | | | Please consider to include an updated version of Figure 1.7 from the Special Report on Renewable Energy Sources and Climate Change Mitigation. With an updated version we mean that the numbers should be updated with numbers from the WGIII assessment report. From SRREN the following text explains this Figure. "Figure 1.7 summarizes current estimates of fossil fuel resources and reserves in terms of carbon content, and compares them with the amount already released to the atmosphere as CO2. Reserves refer to what is extractable with today's technologies at current energy prices. Resources represent the total amount estimated to be available without regard to the technical or economic feasibility of extracting it (IEA, 2005).". You should also consider to include information with respect to the amount of remaining emissions to achieve the 2 degree goal (1000 Gt CO2 when accounting for non-CO2 forcings) in this figure. [Government of Norway] | has been discussed. Not possible due to page limitations |
| General | | | | | Given the mandate of the Synthesis Report to "synthesize and integrate materials contained within the AR5 assessment cycle in a non-technical style (IPCC procedures)". We believe that the SYR should be more than just a collection of important findings from the underlying reports. The current draft is more mature than what we have experienced with the other FODs from the WGs, but especially the integration of main findings is somewhat lacking. The important task of synthesizing and integrating the main findings should be prioritized by the writing team in the upcoming draft. In addition the language used in the current draft is of rather technical character. For a policymaker to really understand the content and the narrativ of the SYR, the language needs to be non-technical, with clear messages and accompanying figures. [Government of Norway] | the final draft contains much more synthesis all over the report. We have also tried to use more non-technical language. |
| General | | | | | Please consider to use labelling a), b), c), etc. for all the individual panels in figures throughtout the SYR, and especially for the SPM to be consistent with the previous SPMs. [Government of Norway] | adjusted |

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| General | | | | | The draft report does not consider the impact of climate change on the fate and effects of environmental pollutants. One example where this is especially relevant is in the Arctic. Climate change related alterations of physical and biological conditions will affect the fate and effects of contaminants in different ways, acting on different spatial and temporal scales. Changes in physical conditions such as solar irradiation, temperature, ocean pH, and salinity will directly affect contaminant partitioning, dynamics, bioavailability and toxicity. Changes in ice cover, precipitation, land runoff, ocean currents, and wind patterns are expected to affect the mass transfer of pollutants to the Arctic in terms of both concentrations and composition. In addition, changes in species composition, food web dynamics and habitat availability may indirectly moderate the biological effects of contaminants. Please consider to include a short description of these impacts from the WGII report.<br>[Government of Norway] | Considered. However the information requested here is too detailed to be included in the SYR, where we are severaly constrained by length and where thus we are required to limit to the most relevant information. |
| General | | | | | The report deals largely with only observed direct effects of climate change, for instance the number of species that has gone extinct due to climate change alone. The consequences of biological exposures and the adaptation to these impacts needs to be seen in light of multiple stressors both related to climate change and other factors affecting ecosystems due to human activities such as habitat fragmentation and degradation, over-exploitation, invasive alien species and pollution. Intact ecosystems will have a higher tolerance to climate change than a degraded ecosystem, and it is therefore essential to look at how this be addressed when dealing with adaptation to climate change. Please consider to include a short desription of this in the adaptation section of the SYR. [Government of Norway] | The point about multiple stressors related to adaptation is mentioned in the underlying text in 3.5 (Interactions among adaptation, mitigation and sustainable development occurs both within and across regions and scales, often in the context of multiple stressors.) Topic 4 (section 4.2) includes a discussion of adaptation options for ecosystems (and the limits to their effectiveness). |
| General | | | | | One of the most important aspects with climate change is that the Least Developed Countries are the countries that has historically contributed least to global emissions of greenhouse gasses, the countries that already are and will be most severly affected in the future, and the countries that has the least capacity to implement adaptation and mitigation strategies. We believe that especially the first and last perspective is not reflected well enouhgt in the Synthesis report. [Government of Norway] | The SPM now has a section 3.1 on Foundations of decision making for climate change that discusses the ethical and equity dimensions: Mitigation and adaptation raise issues of equity, justice, and fairness and have implications for sustainable development and poverty eradication. Many of those most vulnerable to climate change are among the least responsible for GHG emissions. |
| General | | | | | Norway wants to emphasize the great mediation value of the Fifth Assessment Report (AR5). The Fifth Assessment Report facilitates a deeper understanding of the extent of climate change, and it clearly shows that climate change happens with an ever faster pace. The findings presented in this report are consistent with data obtained in environmental monitoring programs related to Norwegian marine ecosystem based management. Norway finds great interest in retaining all quantitative information that show raising sea temperatures, ocean acidification and melting sea ice in the final version of this report. [Government of Norway] | noted |

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| General | | | | | Please consider to add table SPM1 from WG1 to the SYR and SPM. [Government of Norway] | considered but not possible due to space limitations |
| General | | | | | There are too many tables and figures in too much detail with extremely long and convoluted captions that are confusing and serve no clear purpose in conveying climate change information to the public in general and to the policymakers in particular. The authors need to really seriously re-assess to use of such tables/figures and consider deleting many of the confusing items so that the SYR can be constractined in the space limit to convey the information in a clear manner. [Government of United States of America] | Captions have been carefully looked at, to simplify and to make these shorter where possible. However, in many instances details are necessary to avoid misinterpretation |
| General | | | | | The findings in WG II and WG III is described quite disconnected in the first order draft of the SYR. Please consider to integrate these findings more in the next draft. [Government of Norway] | this has been better integrated in topic 3 and 4 |
| General | | | | | I recognise the enormous amount of work that has been put into getting the SYR to this stage, but I do have a major comment. It is, in essence, that this report doesn't do much synthesising. It feels largely a concatenation of the three working group reports. This in itself has some purpose, but not while the report carries the title of synthesis. [Keith Shine, United Kingdom] | the final draft contains much more synthesis all over the report. |
| General | | | | | An overarching comment is that as well a not doing much synthesising, the language adopted in the report largrely remains "loyal" to the WG from which it comes. Coming from a WG1 background, I struggled with some of the terminology in the WG3 sections. And I suspect many from the WG3 area may have struggled with the WG1 language. Somehow I feel the report needs a "common denominator" in the level of specialist language, or perhaps a glossary to help. Perhaps my comment is unfair, as I dont actually know what the target audience is intended to be for SYR, but one way the SYR could go beyond the SPM and TS's in the WG reports is in the way it communicates the knowledge. [Keith Shine, United Kingdom] | has been dealt with, to a certain extent, during the author meetings |

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| General | | | | | In several places there is wording of the nature "Despite climate agreements, greenhouse gas emissions have continued to rise" - such wording is negative and uninformative and needs nuancing. Indeed emissions may have continued to rise but would they have risen even more without those agreements? And more importantly, have they continued to rise in the countries who have been party to these agreements and who have agreed to reduce emissions. It seems there are two different issues here. One is the continued growth of emissions, and the other is the success of climate agreements in limiting growth of emissions in the signatories to those agreements. I have not had time to read the entire SYR, but it seems that this latter issue is never addressed. I understand it is a complex issue, because of the export of emissions because of movement of manufacturing bases, but it seems the reader is just left to guess (or indeed conclude that multilateral agreements have achieved nothing). We are told that the Montreal Protocol has been successful in reducing emissions (at 107:26) but not the extent to which there has been compliance with Kyoto. This seems very strange to me. [Keith Shine, United Kingdom] | The text has been revised in several places where this issue occurs to clarify that it is premature to fully assess the effectiveness of climate policies (Topic 1). |
| General | | | | | Congratulations ! Excellent summary [Monika Rhein, Germany] | Thank you and noted |
| General | | | | | Many paragraphs in SPM particularly in topic 4 are very generic and could be found in any previous IPCC reports. Wish they were a little more targeted and focussed with quantitative values [Government of India] | topic 4 has been majorly revised, keeping this comment in mind |
| General | | | | | It is not clear in the AR5 SPM what is new as compared to AR4, SYR - SPM [Government of India] | Changes compared to AR4 will be presented in outreach events |
| General | | | | | The SPM and SYR lack truly integrative elements. For example, there is no treatment of carbon budgets, which is prominent in the WG1 report, treated in WG3. There is also no effort to integrate treatment of costs and benefits across WG2 and WG3. Both of these would be important integrative themes. [Government of India] | has been taken care of |
| General | | | | | Aside from the fact that the vast majority of captions are entirely too long (ideally they would stay on the same page as the figure or table), they are very redundant with the bulleted discussion items that surround them. Granted, those highlighted sentences at the beginning of many short paragraphs set out main points, but the two teogether (captions and discussion) are redundant to the point of confusion. In general, the caption discussion to be more relevant in explaining, so perhaps instead of [re]discussion them in the text, those bulleted sentences could be summarized into main points for that section? [Government of United States of America] | especially in the SPM, we tried to have shorter captions. |

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| General | | | | | General comments 1 on the whole report:<br><br>We do very appreciate the writing team's enormous efforts to prepare this draft.<br><br>The Synthesis Report is supposed to be an integration of key findings of the three working groups and has to be written comprehensive and communicative for decision-makers as its main readers and the audiences who would not have deep scientific knowledge. In this aspect we would like to suggest few things on improving the underlying report.<br><br>One of the newly added features in AR5 is that WGII has more comprehensive access through specifying climate changes and key risks on global sectors and regions using broad knowledge based on relevant sciences, techniques and socioeconomic literatures. However this feature is poorly treated in the SYR. Therefore we would like to suggest that this feature will be more carefully merged into the underlying report.<br><br>With regarding to the 'Box: Information relevant to Article 2 of the UNFCCC', we can see the authors have paid efforts and lots of consideration on this subject. The existing box needs to be improved with clear messages and comprehensive presentation, rather than a collection of statements from WG reports. Otherwise it would be better remove from the underlying report. [Government of Republic of Korea] | topic 3: The SPM draws attention to the diverse ways of understanding risks in 3.1, which emphasizes different knowledge and approaches. |

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| General | | | | | General comments 2 on the whole report :<br><br>Many Tables and Figures are too informative to understand, because lots of tables and figures are composed of multi-components or quite complicated. Also, some tables/figures are inappropriately informed sources/origins or omitted indications. Please simplify tables/figures through improving presentations such as numbering for each component of figures with multi-maps/graphs, i.e. Figure 1.1 and many others, as well as clarify the sources or references.<br><br>On presentation of sentences in bold and box, Figures, References, Citations and others, please put all in a standard format in order to keep consistency;<br><br>Sentences in bold and box are located randomly or irregularly in the underlying report hence it is not clear the aim of boxes whether given as key words, main messages or playing a signpost to change the subject;<br><br>Indication or caption of Figures are also written in different format section to section and many captions are unnecessarily too long;<br><br>Expressions would be better to keep the same format, such as WG1 (non- italic, without space between WG and number), WGI (non- italic, without space between WG and Roman style number), WG 1 (italic, space between WG and numbers), WGI (italic, without space between WG and Roman style number ) – whichever is standard, it shall be better to be written in the same way… [Government of Republic of Korea] | Captions have been carefully looked at, to simplify and to make these shorter where possible. However, in many instances details are necessary to avoid misinterpretation. Furthermore, we spent a lot of time on lay out and editorials, as indicated in your comment. |
| General | | | | | General comment. The box of text at the beginning of each section of the SPM is an excellent idea. Headline statements introduce the reader to the section. Please preserve them them. [Avelino G. Suarez Rodriguez, Cuba] | done |

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| General | | | | | At 90 pages, the Synthesis Report is very long and exceeds the guidelines initially set out for the length of this document. Every effort should be made to make the SYR as concise as possible, focusing on bringing added value to the existing WG reports and SPMs. That said, we are more concerned that the report be readable than we are with the length. In general, we would like to see more physical space be used to enlarge figures and effort made to break the text up visually to facilitate reading. This may be the only IPCC report that some people read and the intent is to reach a broader audience than that of the three WG SPMs. A more accessible style would differentiate these products. Efforts to replace technical jargon with plainer language are recommended, as is attention to whether sufficient background information is given to enable readers to understand the findings brought into the SYR. It is better to be more selective in what results and messages are brought into the SYR, and to make sure that these are well supported and explained, than to include more results, for which background information and context cannot be integrated due to space limitations. For the SPM specifically, it is especially important that the main messages be simple and easy to translate across the six UN languages. Consider engaging the help of an experienced science writer to assist with this. [Government of Canada] | The amount of words is within the agreed word limitations. However, that is without boxes, tables and figures. Other remarks: accepted. |
| General | | | | | Essential information for planning comprehensive multi-gas mitigation strategies is missing from the SYR, particularly with respect to the role of short-lived climate forcers (SLFCs). This would have been an ideal synthesis topic across WGI and WGIII. An opportunity is being missed here to convey to policymakers how long-lived vs short-lived forcers can contribute differently to abating climate warming and how atmospheric levels of these substances respond differently to reductions in emissions. Discussing differences between short-lived GHGs and aerosols would also have been useful. If there is material which shows the effect of mitigating SLCFs now and delaying action on CO2, vs taking action on CO2 and delaying action on SLCFs, or taking action on both fronts now, this would be very useful to include in the SYR. [Government of Canada] | Taken into account. A discussion of the role of emissions of short lived climate forcers is included in Topic 3, Section 3.4 "Characteristics and risks of mitigation pathways". In addition, short lived climate forcers are considered in the discussion on greenhouse gas metrics in Box 3.2: "Greenhouse gas metrics and mitigation pathways". |
| General | | | | | Graphics: Presumably the quite fuzzy / low resolution ones will be improved, but cartographically there is some difficult symbology to read in what are incredibly informative graphics. In SPM. 5 it is difficult to discern the red line from the organge line; in SPM. 6, it is nearly impossible to see what is cross-hatched versus stipled. In a few graphics (including SPM. 5), there are both red and green lines in there which may not be the best color-contrast choice since large populations suffer from red-green color weakness. [Government of United States of America] | have been improved |

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| General | | | | | In general, it does not seem that a equal level of detail has been preserved from each of the Working Groups in constructing the SYR (and the SYR SPM). In particular, the level of detail retained with respect to WGIII seems high, and this level of detail may be confusing to readers not familiar with the WG report. Suggest simplifying this content down to the few key messages that will be central to SYR. [Government of Canada] | noted and will try to better balance the level of detail |
| General | | | | | We recommend being consistent in how the bolded sentences are used throughout the SYR. In section 1.2, these are stand alone paragraphs which seem to function as headline statements. Subsequent paragraphs present additional results and are not necessarily connected to the headline statement. Then in section 1.3 the approach changes with bolded sentences beginning each paragraph. Our preference is to adopt the format of Section 1.2 and to have fewer rather than more bolded sentences, and to have these highlight main findings of the assessment. However, the key issue is to be consistent throughout so the reader understands how to interpret the bold sentences. [Government of Canada] | we will use the combination of headline statements and bold sentences, taking into account your remarks |
| General | | | | | While mentioned in a number of places, including some Figures, there is no description anywhere of the five Reasons for Concern in the SYR. This is to be a stand-alone document, and so information on the reasons for concern needs to be included. [Government of Canada] | box has been added |
| General | | | | | The SYR could do a better job of distinguishing between different types of abrupt and irreversible change. At present, general statements about abrupt and irreversible change often leave consideration of the type of change to the imagination of the reader. Some types of abrupt and irreversible change are possible in the physical climate system, but one suspects that often a more immediate concern might be change in ecosystems or human systems. Some indication of the systems that are relevant when making statements about abrupt and irreversible change would be useful to readers. [Government of Canada] | Definition has been added (footnote). Reasons for Concern have been better explained. |
| General | | | | | Many of our recommendations for the SPM will be applicable to the full SYR as well. We trust the process for revising the SYR will consider government comments on the SPM as well as not all our comments have been brought forward again here. [Government of Canada] | noted |
| General | | | | | It is suggested that the Introduction of the SYR increases a concise summary the major progress of this report,relative to previous assessment reports, and point out what problems have not been well understood .Therefore,they need to be further studied. [YIHUI DING, China] | Changes compared to AR4 will be presented in outreach events |
| General | | | | | The figures should be reviewed throughout the document for: clarity (ease of understanding), readability (size, graphics), and consistency with chapters (information and graphics/layout used). [Government of United States of America] | we have tried to make the figures (and captions) less complex and more communicative |

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| General | | | | | The authors should include the figure and table regarding uncertainty language from the 2010 IPCC Uncertainty Guidance early on in the SPM (i.e., to clearly explain to the reader how evidence, agreement, confidence and likelihood statements are used). [Government of United States of America] | Footnote included in introduction |
| General | | | | | The authors should consider highlighting some of the major changes and advancements in the science since AR4 early on in the report. [Government of United States of America] | Changes compared to AR4 will be presented in outreach events |
| General | | | | | In my opinion the whole report is written well. However, there is not enough emphasis on non structural measures with low cost such as education. In addition, as I specificly mentioned in my commnets above, the expansion of biofuels should be followed with cautios because of the debate on the GHG emissions associated with it. I think the emphasis should be put on other reliable options such as solar and wind energy. [Vahid Mojtahed, Italy] | The SPM discusses the importance of human and insitutional capacity, and in 3.3 notes that "Restricting adaptation responses to incremental changes to existing systems and structures, without considering transformational change, may increase costs and losses, and miss opportunities." Many examples are given in Table SPM.3. Regarding biofuels, the SPM recognizes that "there are biogeochemical, technical and societal limitations that make it difficult to provide quantitative estimates of the potential at large scales." Other energy options, as well as the constrains, are also discussed in text and figures. |
| General | | | | | The implementation of each adaptation or mitigation option should be followed based on extensive uncertainty and impact assessment including indirect effects on other sectors or regions due to possible negative consequences. For this reason, I would orderand rank the recommented policies based on the confidence on their positive effects. On the same subject, the confidence declaration about many statements is not followed in the whole text and sometime nothing is mentioned. [Vahid Mojtahed, Italy] | No attempt has been made to rank order adaptation and mitigation options in the underlying reports, as they are context-specific, hence this cannot now be done in the SYR. The SYR does not recommend policies, but rather presents policy-relevant research findings. |
| General | | | | | As a pratitioner in flood risk assessent, I should say that risk&uncertainty assessment is not widely practiced in many regions and countries due to lack of reliable databases for susceptibility functions, and high technical requirements for an integrated assessments. This raises the demand for an institution that can help and provide technical assistance for providing risk assessment by anyone who request it. This should be beyond physical and environmental risk and more toward socio-economic risk and vulnerability assessment. [Vahid Mojtahed, Italy] | This comment essentially is about risk assessment, which is part of institutional and human capacity. This is flagged in two places in topic 4 (4.1 and 4.5). It is not possible to provide further details due to space constraints in the SYR. |
| General | | | | | The SyR as a whole is a great effort to integrate the information contained in the three volumes of the AR5, and therein lies its value. However, we think there is still room to give more added value by identifying additional headlines, crosscuting and integrating the findings and results of climate projections and their impacts with responses from risk management adaptation and mitigation, developing some more infographics elements and avoiding any duplication of information [Government of Spain] | We have tried to do so. |
| General | | | | | It is suggested adding a glossary of key terms [Government of Spain] | yes, will be done |

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| General | | | | | This first draft adds little value by way of synthesis to the three working group reports (and their summaries), with almost every line and Figure lifted directly from one or other of the WG reports. Two honourable exceptions to this are Fig.SPM-9 and the Box on 'Information relevant to Article 2 of UNFCCC'. [Tony Weir, Australia] | we will work on much more synthesis in the final draft |
| General | | | | | In this report, unit of GtCO2 is used. But in reports of WG-I, especially in Ch.3 and Ch.6, unit of GtC is used. Any reason for this? Same Unit should be used through reports. [Akihiko Murata, Japan] | For SYR as a whole, it is decided to use CO2, to be consistant within the SYR report |
| General | | | | | Transformational adaptation references are vague and do not give qualitative or quantitative insights to inform approaches or decision making . This was also relevant to adaptation chapters. [Government of United States of America] | The SPM text includes a mention of qualitative insights on transformational adaptation, which is a relatively new concept in the adaptation literature: "Planning and implementation of transformational adaptation may place new and increased demands on governance structures to reconcile different goals and visions for the future and to address possible equity and ethical implications." |

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| General | | | | | General comments:<br>The SPM is a useful summary of the SYR and we thank for the authors for the time they have spent in writing this document. However, in order to improve the document further we have a number of general comments.<br><br>Firstly, we propose that the SPM and underlying text should be rewritten to make it shorter, simpler and less technical. This would make it easier for non-experts to access and understand. In order to do this, we propose setting out early on the remit of IPCC and a description of who the report is aimed at. We strongly suggest that consideration be given to the use of headings as was done in WG1 to provide a self standing executive summary type of narrative. We also propose that the following SYR SPM content structure be amended as follows:<br>1. Observed changes in greenhouse gas concentrations, the climate system, and impacts of climate change (contents same as current section 1 i.e. up to page 10 but re-ordered; start with greenhouse gases, then observed changes, then attribution, then impacts)<br>2. Future climate changes, risks and impacts (no change needed to this title) (start with RCP scenario description, most of material on p.10-20 can remain in present sequence, so this section includes pathways, put Figure SPM9 in here)<br>3. What are the policy options?<br>3.1 The interaction between adaptation and mitigation (made from sections 3.2 and 3.3 combined and Fig. SPM9 moved to earlier) (3.2 doesn't merit a section on its own as it contains no quantitative info) (pages 21-22)<br>3.2 Policy options (pages 24-26)<br>3.3 Interactions….sustainable development (4.4 OK as is)<br><br>Secondly, we suggest that the SPM could benefit from the inclusion of additional examples which will make it more practical and real to people and simple diagrams (with short footnotes!) to illustrate certain key points in the narrative.<br><br>Thirdly, we note that there needs to be a consistent use of terminology throughout the report. For example:<br>1) The report conflates 'policy making' with 'decision making', as the report is policy focused rather than necessarily decision focused the two terms should not be used interchangeably as this suggests that decision makers (and the decisions they make) are homogenous.<br>2) The terms 'risk' and 'uncertainty' seems to be used interchangeably within parts of the report but then used to describe different concepts in other parts. It is important to define them, or at least frame them more clearly as occupying different parts of a | We cannot change the outline, which has been approved by the Panel. We will work on consistency. |

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| General | | | | | RCP scenarios and modelling assumptions:<br>The relative feasibility/plausibility of the RCP scenarios isn't addressed in the draft SYR, although the technical summary and full report of all WGs include evidence and analysis that would inform such a statement. It would therefore be useful to include a statement at the front of the SYR which states whether or not historical and observed data (e.g. recent observed emissions increases, CCS scalability, land-availability for BECCS, inertia in the build of coal-fired power stations with 40 year life spans, historic maximum rates of decarbonisation ever achieved) supports each scenario being achieved. The message in the WG3 SPM should be quoted "The availability and scale of these (BECCS, afforestation) and other Carbon Dioxide Removal (CDR) technologies and methods are uncertain and CDR technologies and methods are, to varying degrees, associated with challenges and risks (high confidence).<br><br>There also needs to be some consideration of the different models used in the three reports, as comparing the different scenarios (without discussion of the underlying differences) may lead to inaccuracies. The text needs to make it clear what is and what isn't included in different emissions projections. For instance, have forcing factors have been included within the model as currently some models consider short-lived gases and the negative forcing of volcanoes and black carbon etc. whereas others do not. This could lead to confusion and may be misleading.<br>[Government of United Kingdom of Great Britain & Northern Ireland] | Taken into account. The set of RCP scenarios is now introduced in the separate Box 2.2: The 'Representative Concentration Pathways' (RCPs). The box describes the basic characteristics of the RCPs and compares them to the wide range of scenarios in the mitigation literature assessed by WGIII, thus also considering feasibility. In addition, the RCPs are placed into contex with regard to scenarios used in earlier IPCC assessments, such as the SRES scenarios.<br>Furthermore, the sentence proposed by the reviewer on the uncertainty, challenges and risks associated with BECCS and CDR is included in Topic 3, Section 3.4 "Characteristics and risks of mitigation pathways" |
| General | | | | | Peak emissions statements:<br>The SYR would benefit from a clear statement on the peak emissions year necessary if we are to have a 50% chance of reaching the 2C target. Taking data from the IPCC reports, that there is a 802 GtC budget and a 3% annual reduction in emissions, we calculated that the emissions peak year would be soon after 2010. (Note: this is for CO2 alone and should not be applied to CO2 equivalent emissions.)<br>The method we used is below:<br>1. Take the budget from the best fit line of WG1 SPM 10 - note: using the line of best fit will stop the budget from being scenario dependent<br>2. Introduce the RCP scenario as a time series - note: using the historic emissions until the RCP 8.5 starts will remove the risk of inconsistent baselines.<br>3. Apply long-term reduction rate from some year in the RCP8.5 emissions and integrate over time to give a cumulative total.<br>4. Compare the number you calculate from 3. with the number from 1.<br>[Government of United Kingdom of Great Britain & Northern Ireland] | Reject. The "peak year" for emissions was not specifically assessed by neither WGI nor WGIII. There is thus not sufficient information to support the addition to the SYR. |

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| General | | | | | The resolution of some Figures and Tables needs to be improved for readability. The texts are often too small and hardly readable. [Government of Switzerland] | adjusted |
| General | | | | | As a summary for policy makers, who are mostly not experts in climate change, the language used should be as much direct and less complicated as possible. The current version of SPM contains some sentences which are indirect (unnecessarily) and/or too long. E.g.: "Delaying mitigation efforts beyond those in place today through 2030 is estimated to substantially increase the difficulty of the transition to low longer-term emissions levels and narrow the range of options consistent with maintaining temperature change below 2C relative to pre-industrial levels". "Cost-effective mitigation scenarios that make it at least as likely as not that temperature change will remain below 2C relative to pre-industrial levels (....) are typically characterized by annual GHG emissions in 2030 of roughly between 30 GtCO2eq and 50 GtCO2eq." (page SYR-16, lines 17-23). [Government of Switzerland] | we have tried to use as little technical language as possible. |
| General | | | | | The topics and major tasks of the three working groups should be stated briefly in the introduction. Not all readers/policy makers know what they are about. Interactions among the three working groups should be explained as well. There is an apparent sequential linkage among them. Also, it would be good to give a guidance to the sections of the SPM in Introduction. [Government of Switzerland] | there is better guidance on the SPM and topics now |
| General | | | | | In order to facilitate undertanding of the concepts, more key data have to be mentionned in the SPM, as some readers will not read the WG's SPM and Report. These key data have to refer, inter alia, to temperature (including details as those presented in Table 12.2, Chapter 12 WG I), sea level rise; etc.. In this context, reference to paleoclimatic data form WG I would be intersting for the reader, including the rate of temperature change as compared to the ones of RCPs. [Government of Switzerland] | It is not the role of the SYR to repeat key data from the reports. Much attention has been paid to ensure that citations are correct, and the online version of the report will allow direct hyperlinking. Note that there is reference to palaeoclimatic results in the SYR SPM |
| General | | | | | CO2eq concentration is used in many places but the place that it is defined at the bottom of page 51 does not specify which of 2 definitions given is used in the SYR (it is good that it is noted that there are multiple possible definitions of CO2eq but there still is the need to say which one is being used). I note that WG3 used one definition (includes aerosols); this needs to be indicated clearly in the report. [Haroon Kheshgi, United States of America] | Accepted, footnote added at first point of use of different types of CO2 equivalent |
| General | | | | | The authors should expand upon the mention of institutional capacity limitations. [Government of United States of America] | There is no room to expand on this concept in the SPM. The importance of institutional capacity is flagged in the SPM, with further details provided in Topic 4 in two places (4.1 and 4.5). |

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| General | | | | | The frequent use of adjectives such as "substantial" throughout the draft without definition and where there are other more substantial effects occurring at the same time reduces the transparency and credibility of this draft. Suggest avoiding such adjectives, and if needed suggest explaining why the effect is more substantial or significant than other effects. [Haroon Kheshgi, United States of America] | Now 69. First Order Draft had 62. So unfortunately we have not succeeded in bringing this down. |
| General | | | | | Personal Summary:<br>If policy makers negotiate in good faith, and achieve a binding legal agreement for emissions reductions on the basis of AR5, and in particular RCP2.6, at the scheduled UNFCCC meeting for Paris in December 2015, the most likely long-term outcome will be catastrophic impacts on society; most certainly the well-being of future generations is severely threatened. This statement is based on omitted identifiable risks, and understated assessments, within AR5, summarized in the Synthesis Report, which far exceed the standards implied by Article 3.3 of the UNFCC regarding the use of the 'precautionary principle', however policy makers will not have been adequately briefed in order to make this judgment.<br>[Harold David Tattershall, United States of America] | noted |
| General | | | | | Thank you for the 1st draft. It draws rather well together the key findings of AR5 and aims at simplifying the text. We also appreciate that some new figures compared to the existing SPMs are presented. [Government of Finland] | thank you and noted |
| General | | | | | Clear formulation of the key messages is crucial. The key messages should be made clearly visible also in final editing. [Government of Finland] | we will use headline statements |
| General | | | | | Please, add glossary of terms (e.g. uncertainty definitions), this would help very much readers not familiar with scientific and climate policy terminology. [Government of Finland] | has been included |
| General | | | | | Tables and figures should be reviewed to improve their clarity (by reducing their complexity) and increase their size to improve readability, in particular Fig SPM.5(a) and (b) SYR-11; Fig SPM.9 SYR-23; Fig 2(f) SYR-14); Fig 2.2 (b) SYR; Fig 3.2 SYR [Government of Australia] | adjusted |
| General | | | | | Suggest additional text. Incorporate a footnote that describes the summary terms used to describe the available evidence (as with WGI) [Government of Australia] | has been done |
| General | | | | | Suggest additional text to reflect the risk of wildfire to Australasia, particularly as a key future risk in SPM7 and Fig 2.5. The Australasian chapter of WGII report (chp 25) notes wildfire as one of eight key risks to the region during the 21st century. [Government of Australia] | Reject. Wildfires are already being specifically mentioned in both Topic 1, Section 1.5 and in the SPM, Section 1.4 (new). We prefer not to add more details for one particular impact due to limited space available in the SYR. Cross-reference to the underlying WG reports will make sure the reader has access to the additional detail. |

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| General | | | | | The SYR contains much information taken literally from the SPM's. In one way this is fine, in another I would have wished for more integration. On the other hand I am fully aware of the challenges that would result from more ambitious integration.<br><br>Apart from above point the SYR is all in all quite good. [Andreas Fischlin, Switzerland] | the final draft contains much more synthesis all over the report. |
| General | | | | | GENERAL COMMENTS: The document does not stand properly the responsibilities at the level of emissions of developed countries and the consequences that this brings in global climate variability and the high economic costs in developing countries. Also, throughout the document is omitted the categories of countries Annex I, Annex II and Non Annex I and the fundamental principle of Common but Differentiated Responsibilities (CBDR). [Government of Nicaragua] | The issue of responsibility in relation to developed/developing countries is to some extent and at a general level addressed in the SPM ( page 19 line 14-16) and the longer report ( p. 82 line 37-39: " Mitigation and adaptation raise issues of equity, justice, and fairness and have implications for sustainable development and poverty eradication. Many of those most vulnerable to climate change are among the least responsible for GHG emissions" . The high economic costs in developing counties related to Climate Change are addressed at several places in the report including on p. 73 line 37- 39 ,p. 74 line 1-3; p.84 line 34-37 and p.99 line 56- p.100 line 1. With regard to Annex I / non annex I, the authors have made the choice to mention only 'developed' and 'developing' countries as categories in order to avoid UNFCCC jargon. 'CBDR' is a part of the legal language of the UNFCCC, while IPCC has no position in this matter, being a scientific body, with the mandate to provide policy relevant but not policy-prescriptive scientific , technological and socio-economic information. |
| General | | | | | The authors need to make sure all acronyms are spelled out the first time they appear. Consider adding a page of abbrevations/acronyms up front. [Government of United States of America] | will be added |
| General | | | | | In terms of extinction risks, words like "substantial", " a large fraction", "increasing" are ambiguous and should be removed. The certainty given to species extinction in the report appers to go beyond the level of science. [Government of United States of America] | Reject. Formulations are from approved underlying Summary for Policymakers. |
| General | | | | | Paleoclimate records comprise entire chapters of the last 2 IPCC ARs, are interspersed in many other chapters, and form the backbone of non-model based attribution studies [ie natural CO2 variability, millennium MAT records, equilibrium sensitivity estimates, rates of sea level rise to mention a few]. This is a serious gap in the science that is supposed to be summarized in the SYR and currently is not. [Government of United States of America] | It is included (1.3.1) |

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| General | | | | | Throughout the report mention is made to positive and/or negative impacts and of benefits, opportunities, and challenges (e.g., page 13, line 24 and many others). Perhaps it would be relevant for the reader to discern that "positive" and "negative" is dependent on who it is being considered. For instance., the opening of the Arctic to increased shipping will cut down costs and emissions for shipping companies but it's already negatively affecting native populations around the Arctic circle who rely on subsistence hunting and the presence of sea ice. [Government of United States of America] | we have tried to give a balanced view. |
| General | | | | | A number of the plots and tables are missing error bars, which provide important information. Consideradding those error/uncertainty bars where possible. [Government of United States of America] | adjusted |
| General | | | | | Both FOLU and AFOLU are used. If possible, be consistent. Also, AFOLU is not defined on first use (defined in fig 1.5 caption pg 38, used pgs 24 and 37) [Government of United States of America] | Standarisation has been made to use FOLU |
| General | | | | | Given the importance of the fact that IPCC uses multiple strands of evidence in its reports I think it is important to specify what IPCC means by consensus. I have had some email exchanges with Leo Meyer on this issue and had hoped that there would be a paragraph in the SYR explaining what we mean by consensus. Climate sceptics and perhaps the general public see consensus as resulting from an agreement of views; IPCC understands consensus as multiple lines of evidence from observations, models, expert knowledge etc from multiple fields pointing in the same direction. The model we use is more akin to a forensic process in a court of law. Thus I suggest that IPCC makes this process of consensus in the SYR clear as to what it is and to what it is not. [John R Porter, Denmark] | Uncertainty guidance note shows we do not use the word 'consensus'. However, we do use 'agreement'. |
| General | | | | | Much of the synthesis is cut and pasted from the 3 WGs, their ES and those of the SPMs. Is this what is really needed for a synthesis? I think a sysnthesis should focus on a few critical topics and then pull information from the WGs that is relevant for the topic - I would suggest that food security should be high on this list. I think also that there needs to be some idea of 'what can we expect first? to affect humans from climate change. I suggest again that food security will be one of the first areas to be affected - so I think the synthesis team needs to have some statements of the timescale over which one can expect given effects. I can see in the presented data that this would be possible but has not been done. This would be of great value to policy makers - ie for what do we first have to prepare and adapt? ie. are we going to get hungry before or after we get our feet wet from sea level rise? [John R Porter, Denmark] | Noted. More synthesis has been included (e.g. fig SPM.9, many sections in topic 3&4). |

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| General | | | | | The Government of Belgium would like to express its appreciation for the very large amount of work that went into the SYR contribution to the AR5. The comments made below are meant to further improve the text of the SYR, specifically the SPM, in order to make it more policy-relevant while fully respecting the scientific assessment made in the underlying reports. [Government of Belgium] | thank you and noted |
| General | | | | | The current SYR is 120 pages. I suggest it needs to cut its emission to about 25% of its current level - ie be about 30 pages plus refs and figs etc. [John R Porter, Denmark] | Page length has been approved by the Panel. |
| General | | | | | A general quesiton that has bedevilled the three WGs is the definition of the baseline for comparison of warming. In some places it is 'pre-industrial' in others it is a year, in others (WG2 chapter 7) it is late 20th century temparatures. There needs to be some statement that reconciles these different baselines and explains how they relate to one another. [John R Porter, Denmark] | we have discussed this and tried to be as explicit as possible about it through the whole report. |
| General | | | | | I note that the use of the term 'food security' makes it clear that this is more than 'food production' and that is good. I suggest that one of the conclusions of the SYR is a call for a special report on food security and climate change. The reason for this is that, even given no climate change, the global food system is going to be under stress on account of population increase. When post-2030 warming is added given current emission rates, the situation comes very serious and will be in the lifetime of many people. Food security is one of the most immediate and serious effects for humans of climate change. [John R Porter, Denmark] | That's not up to us (author team synthesis report). |
| General | | | | | Overallthe SYR is quite well done. Some of the figures from WG2 and WG3 are quite complex, but if carefully considered, they make important points. [Donald Wuebbles, United States of America] | thank you and noted |
| General | | | | | The SYR is very repetitive (does not refer to the SPM and the Full report where repetitions cannot be avoided) and lacks an integrated presentation of the highlights of the three working group reports. The same statements can often be found in more than one Topic. The SYR's long sentences resemble "Christmas trees". [H-Holger Rogner, Austria] | we will work on both the long sentences and the repetition. |
| General | | | | | SYR needs a comprehensive language editing job. Inconsistent use of units throughout the draft (e.g., Wm2 or W m-2, etc.) Numerous typos - not listed in this review. Many of the tables and figures border at illegibility. [H-Holger Rogner, Austria] | done so |
| General | | | | | Excellent report. Very informative. Very clearly structured. A grand effort. Not gloomy as is the reality that can be read between the lines. I do have an overall question on this. With 0.6 C increase in 40 years, we have measured this much (sea level rise, biogeographic shifts, species invasions, etc etc... it can be exactly quantified). What can we expect in the best, very-likely-unattainable + 2 C scenario? [Alessandra Conversi, United Kingdom] | covered in topic 2 |

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| General | | | | | First of all I would like to congratulate the editor and authors of this Synthesis Report for the hard effort done to synthesis the great quantity of information given by the reports of WGI, WGII, and WGIII, and outline the most relevant achievements. This SYR is of extraordinary relevance for the international community and for present and future decisions that could affect locally or globally our world.I thank you very much the opportunity offered me by accepting (including them or not) my comments. [Maria Carmen Llasat, Barcelona] | thank you and noted |
| General | | | | | General comment: Currently the report reads more like an integrated text, rather than a Synthesis Report, with a lot of text having been simply "copied and pasted" from the Working Group reports. More synthesis needs to be done around key questions (e.g. costs/benefits/limits/risks/links between mitigation and adaptation), following a narrative which is easy to follow especially from the perspective of a policy maker. The SPM could be much shorter. More quantitative information is needed (and should be provided where available), particularly when discussing impacts. [European Union] | Noted. More synthesis has been included (e.g. fig SPM.9, many sections in topic 3&4). Quantative info on impacts is limited. |
| General | | | | | Ths SPM and the full report lack a clear narrative. Some of the figures provided (e.g. on projected changes under different scenarios) are somehow confusing and there are often shifts in the reference periods, when they are presented (not always the case). Maybe all this numeric information could be summarized in a table format (for the SPM) and removed from the SPM text. [European Union] | has been improved. |
| General | | | | | A clear storyline is offered by the joint reading of the three WG reports. It can be summarised as: "Warming is unequivocal, and it is essentially due to anthropogenic GHG emissions, in particular to CO2 from fossil fuel burning. If we wish to maintain the planet within the 2°C warming we have to know that we have already used more than 50% of the allowable cumulative GHG emissions to stay within this target; at current growing emission trends, this limit can be reached around 2050. Warming is already producing sensible impacts, and even if emissions are stopped today, the impacts will continue and grow (e.g. sea-level rise). Adaptation is possible, but the warmer the planet will become, the higher will be the likelihood of severe, pervasive and irreversible impacts. There are limits to adaptation, and adaptation costs grow with warming. Emission are growing, their distribution among countries have changed, as they are linked to the growth of income. Reversing previous trends, the growth of emissions in the last decade was combined with a worsening of the carbon intensity of energy production. Several mitigation trajectories are still possible in order to stay below 2°C warming; however, the later emissions peak and decrease, the higher the costs will be, also because those trajectories will require considerable contribution from negative emissions." The current SPM and the full SYR do not offer this straightforward reading. [European Union] | Noted. We will improve the headlines to tell the overall storyline. |

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| General | | | | | Topic 4 should be placed before topic 3. Current topic 3 is an attempt to integrate everything (adaptation, mitigation, development…), therefore the natural placeholder would be the end, after presenting adaptation and mitigation. [European Union] | Decision made by the authors team at Core Writing Team meeting 1. Panel has been informed at 37th session of the IPCC (Batumi).Panel agreed. |
| General | | | | | Some very important messages appear hidden due to the report's long paragraphs: shorter paragraphs, probably with parts of the text in bold, would emphasise key message and facilitate the quick reading and better understanding of the document. This weakness affects both the SPM and the full report. [European Union] | We have now shorter paragraphs and in the topics bold sentences have been used. |
| General | | | | | Boxed headlines should avoid excessive redundancy with text highlighted in bold. [European Union] | we have tried to remove redundancy as much as possible. |
| General | | | | | It would be valuable to policy makers to clearly discuss the near-term implications of climate change and the importance of near-term action. [European Union] | covered in topic 2 and 3 |
| General | | | | | There needs to be consistency in the temperature baseline used in this report. Too many different baselines are used which makes the report difficult to follow and in certain cases quite confusing. [European Union] | accepted and adjusted and clarified where possible |
| General | | | | | The subject of Carbon Budgets is covered in Table 2.2, but not much elsewhere, when this is a key policy relevant topic. [European Union] | We fully agree that the subject of cumulative carbon budgets is of key relevance. This is the reason why the topic of carbon budgets and cumulative carbon emissions is covered in a number of places across the SYR and the SYR SPM. For example, in addition to Table 2.2, several paragraphs in Sections 2 and 3 deal with cumulative carbon emissions. The carbon budget is also covered in key figures in the SYR SPM, in particular Figures SPM.5 and SPM.10, as well as in the underlying SYR text, in particular Figures 1.5, 2.3, and 3.1. |
| General | | | | | The subject of cumulative emissions is covered in the SPM and Topic 2 but it is not described in a synthesised way for what it means for mitigation, adaptation, impacts etc. This topic has great policy relevance so should be covered in the report in a way that is more integrated with the other results. [European Union] | has been done in the Box Art.2 |
| General | | | | | Please ensure that all categories used for grouping countries are consistent with the scientific literature. Valuable information is lost when sweeping statements are made using large aggregated terms such as developed/developing which do not reflect the large diversity between and aross regions. [European Union] | adjusted where possible |

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| General | | | | | The report will benefit from a clear discussion of what the differences mean between low and medium temperature scenarios for impacts and adaptation and the links between them over time. [European Union] | A systematic overview of the differences in impacts and adaptation at low and medium temperature scenarios is not available as the report is limited to what can be found in the underlying reports ( in this case WG II). However there is some material relevant to this question. Relation between impacts and temperatures are described in the Reasons for Concern (Box 2.4, Box on Article 2). The relation between temperature and adaptation potential is described for 2 and 4 0C worlds in figure 2.4 ( regional key risks and potential for risk reduction) and table 2.3 (global key risks including adaptation issues and prospects). |
| General | | | | | The phrase "low cost" only occurs twice in this report. Policy makers are interested in low cost options. Is there more that can be said about them? [European Union] | Costs have been better included in topic 3 and 4 |
| General | | | | | The term 'Transformation' is frequently used without ever explaining what it actually means, leading to confusion or multiple interpretations. The term appears all the time, and will generate confusion among policymakers. [European Union] | Defined in Glossary as agreed by WGII&III approval sessions |
| General | | | | | The risk framing used is a very good way of presenting information in a policy relevant way, but more could (probably) be said in a risk framework about low frequency-high impact climate system events. [European Union] | Treatment of risk being enhanced |
| General | | | | | More info about 'adaptation parhways' would make this report more policy relevant. [European Union] | topic 3 and 4 have been majorly revised and this subject is better covered now |
| General | | | | | More on 'adaptation decision making' under climate change would make this report more policy relevant. [European Union] | topic 3 and 4 have been majorly revised and this subject is better covered now |
| General | | | | | Seasonal Forecasts are not explicitly mentioned in this report. The phrases "marine forecasting" and "climate forecasting" do occur, but it is not clear what timescales these forecasts are for. [European Union] | The first para of section 4.2 refers to early warning systems as a key adaptation approach, which includes climate forecasting. The time scale for climate forecasts is not fixed, as it depends on the system and decisions that are intended to be informed by such forecasts, hence we have not specified a time frame in this report. |

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| General | | | | | The storylines behind the RCPs need to come together at the end of the report (or maybe even in the SPM). At the moment, they are mentioned associated with a range of numbers in several places. It would be extremely valuable to have a paragraph each that says, e.g. 'Based on the synthesis of results presented in this assessment, RCP2.6 represents a world where energy systems have been transformed rapidly. Climate has stabilised below 2C, the Arctic and cryosphere have shrunk but not entirely melted, and some extreme events have increased in frequency and/or intensity. The adaptation efforts have been low compared to mitigation efforts. Important investments have been made in CCS technology.' and same for the other RCPs, with equal attention given to RCP4.5 and RCP6.0, particularly to make clear that important mitigation efforts are also required by these scenarios. [European Union] | This has been attempted in the box Art.2 |
| General | | | | | The Synthesis report is well written. Most of the Key issues and important findings of the Working Group Reports have been well reflected in the draft sysnthesis report [Government of United Republic of Tanzania] | Thank you and noted. |
| General | | | | | The more holistic view of the SYR should result in more additional insights that go beyond those from the individual working groups. [Government of Austria] | Box art.2, figure SPM.9 and many paragraphs, especially in topic 3 and 4, aim to do so. |

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| General | | | | | Base Data: People tend to act quicker when they have information with a pathway for understanding. This is beacuse they are in a position to ask good questions and independently assess risk. It is therefore important that some key base data is included so the reader understands the context in which data on change is presented. If this is not done the SYR will be like an accountancy audit report that just mentions the quantity of change without the absolute turnover or profit etc. (no accounting firm writes such reports as they would be very confusing - just imagine the economic chaos. Nobody could make an informed investment decision). Your readership are not experts so you must provide the base data so they can make an informed decision. Examples of base data include: absolute global surface temperature and its two components: mean ocean surface temperature and mean surface air temperature over land . Another example would be the SLR potential stored in the ice sheets of Greenland and the whole of Antarctica. Another would be local/regional mean temperature. Almost nobody knows what their country's seasonal or annual mean temperature is so saying it rises by xC means very little as the reader has no context unless they happen to be a meterologist. But if th IPCC was to say the mean of RCP8.5 would lead to a 7.5C warming in Germany raising the annual mean temperature from 7.8C in 1850-1900 to to 13.3C by 2100 it may generate a glimmer of understanding. Climate Atlas AR5 models: http://climexp.knmi.nl/atlas/series/CMIP5one/eps_transparency/Germany/time_tas_Germany_mon1_ave12_ref0-0_1880-2100_CMIP5one_rcp85.png Why not pick the five largest emitters of CO2 and give that example? And if not for countries then for the regions in the Climate Atlas e.g. central europe: http://climexp.knmi.nl/atlas/series/CMIP5one/eps_transparency/CEU/time_tas_CEU_mon6_ave3_ref0-0_1880-2100_CMIP5one_rcp26_rcp45_rcp60_rcp85.png Notice the map is not that helpful if one does not know the ,mean temperature: http://climexp.knmi.nl/atlas/maps/CMIP5one/rcp85/diff_tas_Amon_onemean_rcp85_000_2090-2100_minus_1880-1900_mon6_ave3_withsd_CEU.eps [Michael Casey, Ireland] | Noted, but too detailed to incorporate in the synthesis report |

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| General | | | | | Paleoclimate data from WG1 has been entirely omitted from the SPM and SYR. This is very serious as it is Earth's climate history. Paleoclimate records as reported in AR5 indicate that a global average warming of less than 2C (perhaps 1C) relative to pre-industrial is consistent with at least a 5m sea level rises during the Eemian (WG1) and perhaps 10m. The report also shows that a global average warming of less than 2.7C relative to pre-industrial produced a 15m SLR (mid pliocene) (likely less than 2.3C infact as box 5.1 wg1 ch9 is in error. this error can be explained if you want). Paleoclimate gives the atmospheric CO2 thresholds for these events e.g. 400ppm mid Pliocene. Describing climate risks in the SYR without mentioning what has happened in Earth's history is poor communication. The omissions guide the reader to rely exclusively on digital model outputs. The RCP 2.6 budgets deliver atmospheric CO2 levels identical to the mid Pliocene. It is important that this is mentioned so policymakers understand the potential long term implications from their policy decisions. Paleoclimate and basic physcics make that clear. [Michael Casey, Ireland] | It is included (1.3.1) |
| General | | | | | The rates of global average temperature change relative to known paleoclimate events have also been omitted. Saying the rates of change is unprecedented or many times faster (as the SYR does) is abstract, vague and definately not scientific. Policymakers deserve better. A 4C global average warming is easily 50 to 80 times faster than the PETM or the emergence from the last ice age. One does not need a peer reviewed paper to make that calculation - just a pocket calculator and all the papers on the PETM and LG (which you have in the AR5 bibliography). There is a peer reviewed paper on this exact point that reviewed the paleo peer reviewed papers and was published in 2013 after the cut off date (author C Field. Incidently lead author of WGII AR5. 2013 "Changes in Ecologically Critical Terrestrial Climat Conditions. Science). That paper came to the conclusion rcp8.5 is 100 times faster than the petm. But the IPCC job is to review peer reviewed papers is it not? facts are facts. [Michael Casey, Ireland] | The term 'unprecedented' is from a headline statement, which needs to be broad. However, the detail text following the headline provides more information, and the section has been revised. |

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| General | | | | | Warming over Land: Please highlight that warming over land will be much larger than that presented in the global average warming numbers. Humans live on land. A rule of thumb for the AR5 report is the warming over land globally is 1.3x global average temperature (See ensemble mean WG1 CH12 table 12.2). This is conservative as it has been 1.4x to 1.5x in the observed global average data sets i.e. a 1.2C warming over land for the 0.78C global average warming since 1850-1900 to present. Then highlight in words that the precise change over land will be different in regions which is influenced by their altitued, latitude, longitude, vegetation cover and proximity to large water masses among other factors. For instance some areas of central Europe have been warming at almost 2x global average change e.g. Ukraine, Poland, Black Sea region (all useful wheat growers). The model mean agrees this will continue. It is not sufficient to publish a map that is colour coded. One must describe it in text if understanding is to be imparted. The Polish politicians have no idea their country is that vulnerable. By 2100 in RCP 8.5 Polish summers will be as warm as Greece today: Attached are CMIP5 model outputs: http://climexp.knmi.nl/atlas/series/CMIP5one/eps_transparency/Greece/time_tas_Greece_mon6_ave3_ref0-0_1880-2100_CMIP5one_rcp85.png Poland: http://climexp.knmi.nl/atlas/series/CMIP5one/eps_transparency/Poland/time_tas_Poland_mon6_ave3_ref0-0_1880-2100_CMIP5one_rcp85.png http://www.factfish.com/statistic/wheat%2C+yield [Michael Casey, Ireland] | Noted. However, the regional differences in warming are (and have been) specifically mentioned in SYR Topic 2, Section 2.2.1 (previously 2.4.1) "The Arctic region will continue to warm more rapidly than the global mean. Warming globally will be larger over the land than over the ocean (*very high confidence*) (Figure 2.2). " In addition, Figures SPM.7, SYR 1.1, 1.10, and 2.2 all visually support the regionally differing warming over the globe over the recent past and projected for the future under different scenarios. |

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| General | | | | | Monetary policy (WGIII) has been omitted from the SPM, SYR and SPM WG III and was only covered fleetingly in the underlying WGI report. This is disappointing given that financial investment flows are to a large degree influenced by what Central Banks and Financial Regulators do with interest rates, other tools and financial regulations. Climate Change at it's very core is an Infrastructure Finance problem. Central Banks could by using interest rate policy, other unconventional tools and financial regulation accelerate and reduce the cost of mitigation. No large economic problem or large war has ever been solved/fought without active monetary policy engagement. Climate Change is easily a big enough problem to warrant preventative Monetary Policy. It is far too big a challenge for development banks. Monetary Climate Change Mitigation (MCCM) must be at the core of the financial system. If there is non then the central banks, banks hedge funds etc will continue to implicitly support business as usual. They would have no choice. Given the vast amounts of capital sloshing around chasing asset prices higher for no productive purpose it is very disturbing that no government has mandated their central banks or financial regulators to assist in climate mitigation by tilting investment flows. WGIII - should wake up and be practical: The Money Supply and its lack of Management with regard to climate are critical factors in the recent rize in emissions (E.g. Basel risk weightings for banks). Money (a notional medium) and its direction now determines Climate. If we do not use the powerful monetary tools which already exist then the problem cannot be solved. Once the ocean has heated up monetary policy will be a useless tool to use (This is not an original concept. Keynes wrote at great length on the role of monetary policy and investment flows in to long term projects. Modern mainstream economists won't propose it as the majority are neo-classicals that believe in market solutions for market failures. The ECB has recently taken steps to target the real economy with monetary policy giving contemporary precedent for the proposal. Another example would have been Central Bank purchases of assets in certain clases of products. ) [Michael Casey, Ireland] | Tekst should be covered by WG reports, and there is no key issues arising on monetary policy from the WGs. |
| General | | | | | Energy for WGIII part: It is important to mention that the challenge is huge because as it stands less than 5% of energy use world wide is CO2 emission free. (IPCC renewable report). Over 95% of global energy sources emit CO2 of which 10% is biomass related. It is uncertain how sustainable this biomass use is. [Michael Casey, Ireland] | This message is being covered |

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| General | | | | | Permafrost & Mitigation budgets (WG 1 & WG III): Given permafrost is already degrading rapidly (WG 1 Fig 12.33) one should mention that the emission budgets proposed by WGIII exclude GhG emissions from permafrost. Chapter 12 WG1 clearly states that permafrost is excluded from the models: WG 1: 12.4.8.1. Therefore, the final budgets of WGIII also exclude it as they are designed to avoid the warming in the AR5 models. The consequence is that it makes the mean temperature statements of RCP 2.6 and the other RCPs implausible without solar radiation management and large scale CDR. Therefore the budgets are too high for this RCP and others. This implies that the probabilities given in WG 3 for a given temperature target are factually wrong and too optimistic e.g. the claim CO2 budget claim for 66% probability of staying below 2C or below 1.5C. Explanation: It is established that 15% to 40% of human emitted fossil fuel CO2 will remain airborne for at least 1,000 years (Archer 2009 and others and in WG1 and the SYR SPM). That fact after accounting for the non-airborne fraction means 30% to 80% of the human caused airborne fraction as calculated in the atmospheric CO2 concentration remains airborne in 1000 years (Solomon et al 2009 did a worked example). The human airborne fraction of a peak concentration of 450ppm - 280ppm = 170ppm human contribution as 280ppm was in the air in pre-industrial. Therefore, if we ceased emissions tomorrow 30% to 80% of 170ppm would still be airborne in 1000 years (excluding carboncycle feedbacks). That means the atmospheric CO2 concentration would be 331ppm to 416ppm in year 1000 according to Archer 2009 and Solomon 2009 for a 21st C peak of 450ppm. Thus the average rate of decline in atmospheric CO2 ranges from 0.12ppm to 0.034ppm per year over the 1,000 years. All these calculations exclude carbon feedbacks like permafrost. The papers clearly state that. Therefore, as permafrost contains 1700bn tons of carbon (WG1), twice that in the atmosphere, only a small amount need be leaked each year to prevent Atmospheric CO2 declining in an overshoot scenario. You can check this in the climate models. The rate of atmospheric decline is very slow averaging less than 0.6ppm each year between 2050 and 2200 and then slows further. In WG1 table All4.4 page 1422 the decline averages 0.45ppm p.a. between 2050 and 2100 (<1bn ton carbon) for RCP 2.6. Note: 1ppm CO2 = 7.8bn tons of CO2 or 2.13bn tons carbon. So it is ptoven that Permafrost need only leak 0.11% 0.22% of its carbon store to the atmosphere each year (2 to 4bn tons) for a couple of hundred years to prevent atmospheric CO2 declining naturally in the overshoot scenarios (or increase it). What is the probability that permafrost loses 0.11% p.a. from 2050 on? In fact it could already be in this condition - we just do not know. The decline in Atmospheric CO2 in RCP 2.6 is illusory and cannot happen in the real world for these budgets without CDR and Solar shielding. The other budgets for the other RCPs are also over generous. (By the way there is an error in AR5 WG 1 table All2.16 that gives | Noted. Assumptions and caveats associated with the assessment of emission budgets in the AR5 are discussed in detail in the underlying WG reports. We cannot repeat all the details here in the Synthesis report given the length limitations and the synthesis character However, explicit references to the underlying WG reports are being provided for easy and direct access to the detailed discussions in the WG reports. |

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| General | | | | | Risk (WG 1, 2, 3): If the reader of the SYR is not told the speed and magnitude of change relative to Earth's Climate History he/she cannot appreciate the nature of the evolutionary challenge and risks confronting all species on Earth from continued fossil fuel use. Example: At present measured atmospheric CO2 is rising over 200 times faster than the average rate of rise during the 12kyr year emeragence from the last ice age. So it is not unreasonable that a 4C warming this century is 100 times faster. All this data is in the underlying WG1 report. One just needs to use a pocket calculator and summarize it into facts people can relate to. [Michael Casey, Ireland] | Reject, relative levels of rise of atmospheric CO2 or temperatures, from different kinds of datasources and over different time periods WITH credible uncertainties were not assessed in the underlying WGI report |

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| General | | | | | Country Case Study: If one was to do a short case study for Germany this may improve understanding within the IPCC and policymakers in charge of improving the SYR. In the IPCC AR5 models Germany's summer mean temperature is 22C by 2090-2100 for the model mean of RCP 8.5 (june/july/august). That is the same as Turkey's mean summer temperature in the early 21st Century (now). The risks of climate change become intuitively clear for a policy maker if given such an example (it is no longer abstract). In the early 21stC (now) wheat production per hectare in Turkey is less than 50% that of Germany and the biomes are different (no lush oak forests are in Turkish lowlands). It is also a solid case study. The historic change in Germany's summer temperature since 1880-1900 to 2000-2010 is 1.4C. That is 1.8x global change of 0.8C. If this rate of change relative to global change were to continue Germany's summer mean temperture would be 24C by 2090-2100 which would be that of Greece's summer mean in the early 21stC. WG1 of AR5 clearly documents that the patterns of warming in the models do not match the observed patterns and may be too conservative (van Oldenborgh 2009 and WG1 AR5). Paleoclimate is also very supportive of these large changes in Europe relative to global change (Boehme 2003). Quite why the IPCC does not just give a list of countries and their 2003-2012 and 2090-2100 summer mean summer temperatures for the median of RCP8.5 and cross reference to the observed changes to date I do not know. These are the IPCC climate models and observations so there should be no problem mentioning it for several large emission countries. Attached is Germany RCP 8.5: http://climexp.knmi.nl/atlas/series/CMIP5/eps_transparency/Germany/time_tas_Germany_mon6_ave3_ref0-0_1880-2100_CMIP5_rcp85.png Turkey summer Observations up to 2014 and then model: http://climexp.knmi.nl/atlas/series/CMIP5one/eps_transparency/Turkey/time_tas_Turkey_mon6_ave3_ref0-0_1880-2100_CMIP5one_rcp85.png This is a useful exercise because PIK in its climateimpactsonline.com ( klimafolgenonlin.com) portal says German summer mean will be 19.8C in 2090-2100 for RCP 8.5 i.e. similar to north central France. That is well below (2.2C less) than the IPCC mean for that period. The difference is a transition to a Turkish summer mean temperature. That is the quality of advice the German people and Government are getting from PIK . This is very important because PIK representatives are heavily involved in writing the IPCC SYR and other reports. If they don't know what the IPCC mean is how can their governmnent policymakers? I am making this point as it is very obvious that leaving out absolute base mean temperatures is causing allot of confusion - even among experts. Boehme, M. 2003. “The Miocene Climactic Optimum: evidence from ectothermic vertebrates of Central Europe”. Elsevier. [Michael Casey, Ireland] | Not possible due to space limitations |
| General | | | | | ADD Figure SPM 5 WGII is useful as it shows the existing forests and the remnant primary forests will have great difficulty moving with even RCP 2.6. [Michael Casey, Ireland] | Not possible due to space limitations |

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| General | | | | | Extinction risk would be better understood if the UN Red List threatened species statistics were reported. For example as it stands 36% of all mammal species are at risk of extinction and 80% of primary forest have been eliminated globally.The abundance of most other wild mammal species is a fraction of what it was fifty years ago. Once one has this information one understands the climate risk as biomes disappear and animals have difficiulty crossing fragmented landscapes created by humans. [Michael Casey, Ireland] | These issues have been dealt with, in unprecedented detail, by chapter 4 in the WGII report. The statements here have been expanded somewhat, but they cannot cover the full depth of the issue. |
| General | | | | | It is important that Policymakers are given the information to understand the End Game from CO2 emissions. The statement that 15% to 40% of human fossil fuels CO2 emissions remain airborne for 1,000 years must be explained. For instance if CO2 went to 560ppm and then humans stopped entirely CO2 would still be 364ppm to 500ppm in 1000 years (Solomon 2009, Archer 2009). That is within and above the estimates for the Pliocene when SLR was 15m higher. That analysis is entirely without carbon feedbacks such as permafrost. There is just no point excluding time frames after 2100 if the science can be explained accurately and simply in one paragraph due to the cumulative nature of CO2 and its radiative properties. All the RCPs push the CO2 levels to those similar to when Earth's ice sheets were much smaller or had not yet formed and sea levels were several tens of meters higher. We know this (CH 6.3.1 WG1 AR4 and CH 9 WG1 AR5). So why not tell them. That is real quantifiable risk based on Earth's history and not climate models. Leaving this logic sequence out of the SYR is like the police rejecting the fingerprints in favour of a lie detector test as proof. [Michael Casey, Ireland] | Noted. The Box on "Information relevant to Article 2 of the UNFCCC" does include a paragraph on Future climate change commitments and irreversible changes. The relevant paragraph does mention the large fraction of anthropogenic climate change that is irreversible on a multi-century to millennial time scale. More details and explanations can be found in the underlying WGI report, Chapter 6, e.g., Box 6.1. |
| General | | | | | Thank you for allowing me to participate. [Michael Casey, Ireland] | welcome and noted |
| General | | | | | The SYR (final summary) is not a synthesis of previous reports WGI, WGII and WGIII that has been agreed with Parties. It would be useful to distribute a summary to the parties including comments made in previous WGI, WGII and WGIII. This duplicate the effort of parties to review the document and to have a good summary of the three. [Government of Bolivia] | thanks for the suggestion, but process-wise next to impossible |
| General | | | | | The message conveying to policy makers is confuse. It is important to incorporate the sections of imitigation policies and adaptation policies that have been agreed with Parties in previous summaries. Mitigation policies cannot only be related to mitigation but also to adaptation. [Government of Bolivia] | this has been improved in topics 3 and 4 |
| General | | | | | The issue of transformation is not considered in the context discussed in WGII that refers to strenghtening current paradigms, including the Living-well in harmony with Mother Earth from Bolivia, aligning or changing paradigms as appropriate. [Government of Bolivia] | Defined in Glossary as agreed by WGII&III approval sessions |
| General | | | | | It does not consider the issue of finance appropriately, including the discussions we have had in WGII and WGIII. It is also important to highight the costs of mitigation and the costs of damage. [Government of Bolivia] | this has been improved in topics 3 and 4 |

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| General | | | | | Issues of equity, Common but Differentiated Responsibilites and historical responsibility are absent from the whole document. [Government of Bolivia] | Equity issues are discussed in SPM 3.1 - Foundations of decision making for climate change, which includes **Many of those most vulnerable to climate change are among the least responsible for GHG emissions. "** |
| General | | | | | The issue of sustainable development and poverty erradication in the context of climate change is not addressed correctly as agreed by parties. Need to review WGII. [Government of Bolivia] | The text on sustainable development represents a synthesis of WGII and WGIII. In 2.2,"From a poverty perspective, climate change impacts are projected to slow down economic growth, make poverty reduction more difficult, further erode food security, and prolong existing and create new poverty traps, the latter particularly in urban areas and emerging hotspots of hunger (medium confidence)." In 3.1, "Mitigation and adaptation raise issues of equity, justice, and fairness and have implications for sustainable development and poverty eradication. " and in 4.5: "Climate change exacerbates other threats to social and natural systems, placing additional burdens particularly on the poor." |
| General | | | | | Regarding the importance to take into account societal values and different socio-cultural contexts is ignored, including the holistic views of indigenous peoples about the communit and environment. Also the importance of the issue of indigenous and traditioanl knowldge system is not include at all. [Government of Bolivia] | The importance of values is highlighted in section 3.1 - Foundations of decision making for climate change. Section 3.3 recognizes that the importance of contexts. The importance of indigenous knowledge systems is mentioned in section 3.3 of the underlying text "(Indigenous, local, and traditional knowledge systems and practices are a major resource for adapting to climate change, but these have not been used consistently in existing adaptation efforts."), but was not be included in the SPM because of limited space. |
| General | | | | | there are problems with the description of attribution at various scales. Attribution to climate change drivers and attribution to observed changes to climate change should be clearly separated. Also, the discussions of past change, attribution of current changes and projection of future changes are treated separately and are not consistent [Government of Bolivia] | Authors believe that the revision has removed any ambiguities with respect to these issues. |
| General | | | | | There is the need of better integration of WGII and WGIII materials, and to create linkages between WGI, WGII and WGIII. They are absent at all. [Government of Bolivia] | Especially Box Art.2 and topic 3 have done so. |
| General | | | | | Adaptation, mitigation and co-benefits should be consistently treated. [Government of Bolivia] | topic 3 and 4 have been majorly revised and this subject is better covered now |
| General | | | | | Report should use U.K. spelling. Some devations in Figures. E.g. sulfur [scott power, australia] | adjusted |

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| General | | | | | 'Scenarios reaching atmospheric concentration levels of about…', page 15, line 4 and throughout the whole text. A 'scenario' cannot reach 'concentration' (see, e.g., the WGII Glossary: scenario is 'A plausible description of how the future may develop based on a coherent and internally consistent set of assumptions about key driving forces (e.g., rate of technological change, prices) and relationships.'). It may lead to a certain concentration, imply a certain final concentration, etc. We recommend reconsider wording throughout the text. [Government of Russian Federation] | The phrase "scenarios reaching" refers to scenarios where descriptions of the future include concentrations that go as high as a particular concentration. |
| General | | | | | (Whole SYR) The schematic from figure SPM1 of WG2 should be included. This Figure is helpful to explain the notion of risks and impacts as discussed in the report. [Government of France] | considered to include in introduction |
| General | | | | | Anthropogenic climate change (ACC is one of the most important issues facing humankind. Since decisions about societal response to ACG are largely political, consideration of strategies and tactics to mitigate the impacts of ACC will involve closely examining the interaction among critical uncertainties within this issue as well as other social issues. In a simple example, if impacts of countermeasures to increased CO2 emissions are plotted on an x-axis ranging from much lower atmospheric carbon levels to much higher atmospheric carbon levels, the scenarios of expected societal impacts (including their expected magnitudes and ranges) can vary immensely by plotting these scenarios on a plane defined by a y-axis that ranges from no cooperation among international stakeholders with respect to ACC to complete cooperation among international stakeholders. In a more complex example, if impacts of countermeasures to increased CO2 emissions are plotted on an x-axis ranging from much lower atmospheric carbon levels to much higher atmospheric carbon levels, the scenarios of expected societal impacts can vary immensely by plotting these scenarios on a plane defined by a y-axis that ranges from a large reduction in economic inequality to a large increase in economic inequality. [Carl Southwell, United States of America] | The SPM includes Figure SPM.10: The relationship between reasons for concern, temperature, cumulative emissions, and future emissions reductions. |
| General | | | | | With respect to models, any model, including every model presented as part of the IPCC, has multiple opportunities to introduce risk. These may include (1) the validity and completeness of the underlying set of assumptions, (2) the inherent limitations of the model with respect to solutions (i.e., its model boundaries), (3) the parsimony of the model, (4) the validity and adequacy of the data in the model, (5) the testing of th model, including independent model verification and validation (IV&V), (6) the ongoing monitoring and refinement of the model, and (7) the biases of the model's builders and users. The only "solution" (in quotes, since any solution is temporary and incomplete) is to have an open process--at every step of the way. When each model, its assumptions, inputs, outputs, data etc. are freely available, the scientific method proceeds.<br>[Carl Southwell, United States of America] | noted |

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| General | | | | | Figures are in many ways well-done, laboured and gives a conclusive view over a certain problem. However they are mostly rather complicated and it takes time to read and understand them. Also in the 1st order draft the resolution is low and therefore the details are difficult to read and if using a no-colour hard copy its mostly impossible to understand. In some figures we suggest to either exclude some info or to split the figure in more than one fig. [Government of Sweden] | has been improved |
| General | | | | | Since the SPM tend to be quite long, it would be of great value if a few main messages could be formulated in the very beginning as a summary of the SPM. [Government of Sweden] | we will use headline statements |
| General | | | | | Request explanations of terms of confidence level, likelihood and certainty language in the Introduction of the AR5 SYR SPM or where first mentioned on p6, line 8. Also to maintain consistency with AR5 WGIII SPM, request that it be clarified that the confidence level of the bold text also applies to text following in same bullet. Furthermore, there appears to be text with confidence readings inconsistent with approved AR5 WG reports and others with no confidence readings at all, and thus request that authors check the entire report to ensure consistency with AR5 WGI, WGII and WGIII. [Government of Japan] | done so in the introduction (footnote) |
| General | | | | | Revisions made, approved and adopted at WGI, WGII and WGIII plenary meetings should be reflected in SYR text. Currently not all have been made and there seem to be inconsistencies between SPM text approved at WG plenaries and SYR / longer report of SYR. [Government of Japan] | adjusted |
| General | | | | | The definition of “pre-industrial” requires clarification because its range differs among WG reports. For example, “pre-industrial” in SYR-11 line 3 seems to be as of 1860 judging from Figure SPM.5 while SYR-118 footnote 19 define “pre-industrial” as 1850-1900. [Government of Japan] | checked and adjusted |
| General | | | | | AR4 dealt with EQUIRIBRIUM temperature and concentration in 2100, whereas AR5 deals with TRANSIENT temperature and concentration in 2100; this is a major change and thus needs to be clearly stated together with reasons for the change. The content can come from Footnote 16 on WGIII SPM p.15, for example. Place is up to LAs but possibly from the following:<br>(in relation to WGI, Ch.5 Sec5)<br>- SYR-10 “Future climate changes, risks and impacts”<br>- SYR-58 2.4.5 “Climate system responses”<br>(in relation to WGIII footnote16:)<br>- SYR-15, 3.1 “Mitigation Pathways”<br>- SYR-74 3.2 “Characteristics and risks of (evolving) mitigation pathways”<br>[Government of Japan] | Reject. The comment by the reviewer is incorrect. There is no such fundamental difference between the assessments in AR4 and AR5. Both AR4 and AR5 do assess a wide range of future scenarios, in some of which CO2 concentrations or temperatures stabilize by 2100 whereas in others CO2 concentrations or temperatures continue to increase beyond 2100. |