

REGIONAL ASSESSMENT REPORT ON BIODIVERSITY AND ECOSYSTEM SERVICES FOR EUROPE AND CENTRAL ASIA							
Comments external review second order draft - Chapter 2							
Reviewer Name	Chapter / SPM	From Page	From Line	To Page	To Line	Comment	Response
Ilija Gasan Osojnik Črncvec	0	0	0			local and native breeds are two interchangeable terms, for greater clarity, I would recommend only one expression is used for the whole publication.	The two terms address slightly different issues, as local breeds denotes breeds present only in a distinct region, and native breeds denotes breeds which had sufficient time to adapt to specific local conditions.
Brendan Coolsaet	0	0	0			All documents include big differences in the quality of the writing. Everything should be thoroughly proof-read and edited by native speakers.	This has been done throughout
Brendan Coolsaet	0	0	0			Use of genetic resources and Nagoya protocol are notably absent in most of the chapters	Limited or unequal access to NCP or genetic resources is now mentioned where appropriate.
Brendan Coolsaet	0	0	0			For reviewing purposes, it may be useful to indicate the gender-balance and 'discipline-balance' within the group of authors (could be illustrated with a gauge at the beginning of each doc for example). This will facilitate identifying biases	The complete authorship is listed at the beginning of each chapter. Statistics on gender and disciplinary balance are available from the ECA TSU and IPBES Secretariat
Germany	0	0	0			We believe that the regional ECA assessment generally has a comprehensive and scientifically sound structure. However, linkages between the chapters, especially for chapters 6, are not that strong yet. For instance, it is not clear in how far chap. 6 builds upon the findings and insights of the analyses within the previous chapters. While the review work, analyses and evaluations made in these chapters are by themselves very insightful, linking more strongly back to the status and trends chapter as well as the drivers/scenarios/visions and pathways chapters would be very useful. For instance, the 'status and trends' chapter 3 might help identify where policy action is most needed and the 'drivers' chapter 4 determines the underlying drivers which need to be addressed by policy action. Giving more weight to these chapters in the discussion of policy options might help to derive more region-based options. As it stands now, many key messages of chapter 6 are of a more general nature.	A comprehensive attempt has been made to cross-reference the different chapters to ensure consistency between them. All chapter texts were screened for potential opportunities for governance or management action and these opportunities are now mentioned in chapter 6 with reference to the chapter of origin.
Germany	0	0	0			This assessment shows some imbalances regarding a lack of coherence in the use of terminology: This can lead to different understandings and also to misinterpretations. For instance, at its last Plenary, the IPBES had agreed to use the term "nature's contributions to people" (NCP) as a synonym for the term "ecosystem services". Unfortunately, the term NCP is now being used in the assessment frequently in a modified form and therefore inconsistently. This aspect needs to be addressed in the assessment as well as in the SPM.	Terminology was systematically checked across the full report
Germany	0	0	0			There are significant contributions and benefits arising from agro-ecosystems. The increase in food, feed and timber production and resulting food security has been mentioned, but not thoroughly discussed. We would therefore ask the authors to extend this discussion and provide a more balanced perspective on the increase in food security over the last decades. Furthermore, information on traditional varieties and breeds or on genetic resources for food and agriculture is missing. Thus, the contributions of agriculture to the biological diversity in the agricultural sector have not been completely considered so far.	We have attempted to address this comment by taking a more balanced perspective on the relative contributions of nature to people especially with respect to food and fibre provision in chapter 2. We have also increased the treatment of genetic diversity of crops and animal breeds in chapter 3.
Germany	0	0	0			Regarding knowledge gaps - please provide a section at the end of each chapter to present the relevant knowledge gaps that were identified from the reviews (for chapter 3 it's missing). It is referred to in the SPM, p. 81. 233 that relevant knowledge gaps are identified, so please ensure that all knowledge gaps identified throughout the individual chapters are then summarized and assessed in the corresponding section of knowledge gaps and uncertainties towards the end of each chapter.	Knowledge gaps have been identified for each chapter, as well as being summarised as a box in the SPM
Germany	0	0	0			Some of the chapters (particularly 2, 3, 4, 6) are very long and readers easily lose track as to what type of information is currently presented. Please try to synthesize the information as much as possible and if a lot of information is to be presented provide short summaries or highly important findings.	All of the chapters have been reduced considerably in length
Germany	0	0	0			There are still some gaps, placeholders or work in progress in the SOD. This makes it partly difficult to comment. Please fill these gaps effectively.	Gaps have been filled throughout the document
Germany	0	0	0			We urgently request the chapter authors to ensure that all facts and figures contained in the chapters are accurately cited and adequately referenced with up-to-date sources. We also encourage chapter authors to cross-check whether the same facts and figures on a specific topic are being used throughout the assessment. Please make sure that all key messages are backed up by facts and figures.	The use of evidence sources has been comprehensively checked across the document, especially including those that integrate across chapters
Germany	0	0	0			Please explain all abbreviations when first used and then use them coherently afterwards (e.g. ILKP in the SPM)	All abbreviations have either been spelled-out or defined on first use
Belgian government - Hilde Eggermont (IPBES National Focal Point)	0	0	0			All documents include big differences in the quality of the writing. Everything should be thoroughly proof-read and edited by native speakers.	The document has been comprehensively reviewed by native English speakers
Belgian government - Hilde Eggermont (IPBES National Focal Point)	0	0	0			Use of genetic resources and Nagoya protocol are notably absent in most of the chapters	Limited or unequal access to NCP or genetic resources is now mentioned where appropriate.
Belgian government - Hilde Eggermont (IPBES National Focal Point)	0	0	0			For reviewing purposes, it may be useful to indicate the gender-balance and 'discipline-balance' within the group of authors (could be illustrated with a gauge at the beginning of each doc for example). This will facilitate identifying biases	The complete authorship is listed at the beginning of each chapter. Statistics on gender and disciplinary balance are available from the ECA TSU and IPBES Secretariat
Belgian government - Hilde Eggermont (IPBES National Focal Point)	0	0	0			no reference to Nature-based solutions, though very relevant in this assessment (i.e. in the different Chapters and SPM)	The NBS concept is referenced where there is literature and evidence to support its use
Anatolij Khapugin	0	0	0	0	0	Through the whole assessment, there are many cases of mixture English (British+American): e.g. ch.1, p. 12, line 333 (prioritize) vs. ch.1, p. 4, line 83 (recognised), etc. I think, some one of English forms should be used through the whole assessment. Also, there are many mistakes (or it is a lack of standards of formatting) for references style. I would recommend check it through the whole assessment. I didn't add concrete recommendations because I don't know what format of references and references style should be used	The document language has been systematically edited by native English speakers
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0			We would recommend that the IPBES Core Indicator 'Marine Trophic Index' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website www.bipindicators.net. This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Dirk Zeller (email: d.zeller@oceans.ubc.ca).	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0			We would recommend that the IPBES Core Indicator 'Proportion of local breeds, classified as being at risk, not-at-risk or unknown level of risk of extinction' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website www.bipindicators.net. This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Roswitha Baumung (email: Roswitha.Baumung@fao.org)	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.

UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Core Indicator Percentage of Category 1 nations in CITES is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Tom De-Meulenaer (email: <a href="mailto:Tom.DE-MEULENAER@ctes.org">Tom.DE-MEULENAER@ctes.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Core Indicator 'Nitrogen + Phosphate Fertilizers (N+P2O5 total nutrients)' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Francesco Tubiello (email: <a href="mailto:francesco.tubiello@fao.org">francesco.tubiello@fao.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Core Indicator 'Trends in Pesticide Use' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Francesco Tubiello (email: <a href="mailto:francesco.tubiello@fao.org">francesco.tubiello@fao.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Core Indicator 'Percentage of Undernourished People' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Carlo Cafiero (email: <a href="mailto:Carlo.Cafiero@fao.org">Carlo.Cafiero@fao.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Wetland Extent Trend Index' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Sarah Darrah (email: <a href="mailto:Sarah.Darrah@unep-wcmc.org">Sarah.Darrah@unep-wcmc.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Trends in invasive alien species vertebrate eradications' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Shyama Pagad (email: <a href="mailto:s.pagad@auckland.ac.nz">s.pagad@auckland.ac.nz</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator RAMSAR areas is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Maria Rivera (email: <a href="mailto:RIVERA@ramsar.org">RIVERA@ramsar.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Number of countries with national instruments on biodiversity relevant tradable permit schemes' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . These indicators are country-specific, so they can be disaggregated by countries in your region. However, given the incomplete country coverage, any regional aggregates cannot be taken to represent the entire region. Currently we have data on about 58 countries. (Just to note, we also have information on countries with biodiversity-relevant taxes in place). More information on this is available from the indicator Focal point Katia Karousakis (email: <a href="mailto:Katia.KAROUSAKIS@oecd.org">Katia.KAROUSAKIS@oecd.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Trends in potentially harmful elements of government support to agriculture (produced support estimates)' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator is available for the OECD as a whole and has not been disaggregated as such. The original data on (total) government support to agriculture is available on the OECD website by country. More information on this is available from the Indicator Focal point Katia Karousakis (email: <a href="mailto:Katia.KAROUSAKIS@oecd.org">Katia.KAROUSAKIS@oecd.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Better Life Index' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . The data is available for only 38 countries and therefore it would be difficult to be used regionally as IPBES has classified these. More information on this is available from the Indicator Focal point Katia Karousakis (email: <a href="mailto:Katia.KAROUSAKIS@oecd.org">Katia.KAROUSAKIS@oecd.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Protected area coverage of terrestrial, marine and freshwater ecoregions' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Ed Lewis (email: <a href="mailto:Edward.Lewis@unep-wcmc.org">Edward.Lewis@unep-wcmc.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Growth in species occurrence records accessible through GBIF' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Tim Hirsch (email: <a href="mailto:thirsch@gbif.org">thirsch@gbif.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Robert Hoft (email: <a href="mailto:robert.hoft@cbd.int">robert.hoft@cbd.int</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Information provided through the financial reporting framework, adopted by decision XII/3' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Robert Hoft (email: <a href="mailto:robert.hoft@cbd.int">robert.hoft@cbd.int</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the IPBES Highlighted Indicator 'Number of world natural heritage sites per country per year' is used in this assessment. Indicator information is available from the IPBES Indicator portal and the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Douglas Nakashima (email: <a href="mailto:D.Nakashima@unesco.org">D.Nakashima@unesco.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Trends in Loss of Reactive Nitrogen to the Environment' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Albert Bleeker (email: <a href="mailto:Albert.Bleeker@pbl.nl">Albert.Bleeker@pbl.nl</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Wild Bird Index (forest & farmland specialist birds)' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Richard Gregory (email: <a href="mailto:richard.gregory@rspb.org.uk">richard.gregory@rspb.org.uk</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Climatic impacts on European and North American birds' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Richard Gregory (email: <a href="mailto:richard.gregory@rspb.org.uk">richard.gregory@rspb.org.uk</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.

UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Ocean Health Index' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Benjamin Halpern (email: <a href="mailto:halpern@nceas.ucsb.edu">halpern@nceas.ucsb.edu</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Cumulative Human Impacts on Marine Ecosystems' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Benjamin Halpern (email: <a href="mailto:halpern@nceas.ucsb.edu">halpern@nceas.ucsb.edu</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Shyama Pagad (email: <a href="mailto:s.pagad@auckland.ac.nz">s.pagad@auckland.ac.nz</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Biodiversity Barometer' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Rik Kutsch Lojenga (email: <a href="mailto:rik@ethicalbiotrade.org">rik@ethicalbiotrade.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Red List Index (impacts of utilisation)' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Tom De-Meulenaer (email: <a href="mailto:Tom.DE-MEULENAER@cites.org">Tom.DE-MEULENAER@cites.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Water Quality Index for Biodiversity' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Hartwig Kremer (email: <a href="mailto:hartwig.kremer@unep.org">hartwig.kremer@unep.org</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	0	0	0		We would recommend that the Indicator 'Number of Parties to the CBD that have deposited the instrument of ratification, acceptance, approval or accession of the Nagoya Protocol' is used in this assessment. Indicator information is available from the BIP website <a href="http://www.bipindicators.net">www.bipindicators.net</a> . This indicator can be disaggregated/made available for this region, more information on this is available from the Indicator Focal point Beatriz Gomez (email: <a href="mailto:beatriz.gomez@cbd.int">beatriz.gomez@cbd.int</a> )	Chapter author teams made use of these core/highlighted/further indicators as far as possible given the delivery late in the process.
EU: Frank Wugt Larsen (EEA)	0	0	0		A few points on references: 1) In general, there is a need to systematically check references in the chapters. Specifically, EEA reports are not referenced consistently, e.g. in some chapters it is EEA XXXX, while in other chapters European Environment Agency XXXX. 2) Chapter 3 doesn't seem to contain any reference to EEA materials, which seems a bit odd given the many relevant EEA publications. 3) Some EEA references are not the most current one, e.g. Climate change, impacts and vulnerability in Europe 2012 is referenced although there is 2016 report.	References have been systematically checked and standardised throughout the document using the Mendeley bibliographic software.
EU: Frank Wugt Larsen (EEA)	0	0	0		As during last review, we would like to point you to relevant information hosted by the EEA for which we believe a consultation by authors could improve the ECA report. In general, we will also refer to the EEA/ETC BD document 'Information note to IPBES secretariat on EEA and EU information' ( <a href="http://bd.eionet.europa.eu/Reports/ETCDBTechnicalWorkingpapers/PDF/Information_IPBES_on_EEA_EU.pdf">http://bd.eionet.europa.eu/Reports/ETCDBTechnicalWorkingpapers/PDF/Information_IPBES_on_EEA_EU.pdf</a> ), which was shared with the ECA TSU in 2015. Several reports provide a good starting point to find relevant information, incl. EEA, 2015 European environment – state and outlook 2015 (SOER 2015, in particular, thematic briefings and SOER synthesis); EEA 2016. Mapping and assessing the condition of Europe's ecosystems. Progress and challenges; EEA, 2015, State of Nature Report 2015; EEA, 2015, State of Europe's Seas; EEA, 2016. European forest ecosystems – state and trends. In general, the EEA website ( <a href="http://www.eea.europa.eu">http://www.eea.europa.eu</a> ) also provides access to a wealth of relevant indicators and assessments.	EEA sources are highly appreciated and cited throughout the assessment.
Thomas Brooks	0	0	0		Overall: the ECA assessment is looking really good - many congratulations to all the authors. I have focused the great bulk of my comments on issues directly related to data mobilised for the ECA against IUCN standards, especially in the light of the provision of these data for IPBES in <a href="https://www.nature.com/articles/sdata20167">https://www.nature.com/articles/sdata20167</a> , and of IUCN's strategic partnership with IPBES in general.	Thanks for the comment
Switzerland: José Romero	0	0	0		General: establish a glossary as part of this report and include in the glossary words like "cohesiveness", "regulatory", "material", "non-material" NCPs; "trophic level"; "biotic homogenisation".	A glossary has been created as suggested
Switzerland: José Romero	0	0	0		General: in this report, the concept of "trade-off" is used in a rather negative sense, while generally a trade-off is a situation reached for the satisfaction of divergent views and interests, which is considered to be a positive solution. We wonder if this rather negative use of trade-off in the report would be correctly translated in the other non-English languages. For example, in French, we would rather think of a happy outcome when a trade-off (e.g. a compromise, a good deal) is done in front of irreconcilable antagonisms. If the use in this report is more in a negative sense, then why not qualify trade-offs as e.g. "harmful". We hope that the English speakers authors understand our point and find a way out to address it in English as well as in the other non-English languages.	Trade-off is here consistently meant to indicate a negative relation between two variables of interest, e.g. between two NCPs. Mitigation of a trade-off would correspond to your "happy outcome".
The Netherlands: Astrid Hilgers	0	0	0	0	(Financial) cost-benefit analyses for policymakers/society are missing, as it is important to name such considerations explicitly. Also, certain concepts should be defined more precisely. This goes, among others things, for Natural Capital.	Discussion of the economics of ES (valuation) has been increased in the document, especially in Ch2
Ramsar Secretariat	0	0	0	0	We recommend that as in the regional assessments for Africa and the Americas, the area of Ramsar Sites, wetlands protected under the Ramsar Convention as internationally important by sub-region, be included in this assessment as an indicator. See: <a href="https://rsis.ramsar.org/">https://rsis.ramsar.org/</a>	Done in chapter 3.
IPBES Knowledge and Data Task Force (KD TF) / Task Group on Indicators (TGI)	0	0	0	0	This review provides feedback from the IPBES Knowledge and Data Task Force (KD TF) / Task Group on Indicators (TGI) on the use of IPBES core indicators in your assessment. We see potential for inclusion of additional core indicators and for the more consistent use of the standardized visuals provided. For information on core indicators potentially relevant to a given chapter, please see <a href="http://www.ipbes.net/indicators">http://www.ipbes.net/indicators</a> (or see the tab named, "core indicators" in this spreadsheet) and check the indicator trend graphs shared by your TSU. For the trends of IPBES core indicator, standardized visualizations should be used as much as possible to ensure the consistency between and within the assessments. The KD TF/TGI aim to follow up with specific recommendations in the near future. In the meantime, do not hesitate to reach out to them through your TSU or the KD TF TSU ( <a href="mailto:ipbes.kdtsu@gmail.com">ipbes.kdtsu@gmail.com</a> ).	Chapter author teams made use of the core indicators as far as possible given the delivery late in the process.
Kremena Gocheva	0	0	0		The draft assessment is an impressive and very informative work. It can, also, be seen that the drafting and peer review process are flexible enough to incorporate very recent work despite the long drafting cycle.  It would be helpful to incorporate a feedback mechanism from stakeholders as well, for collecting new information that becomes available on a running basis. For example, the Bulgarian mapping and assessment outside NATURA 2000 - some 66% of the country - for ecosystem condition and biophysical valuation of ecosystem services was completed in April, 2017. IBER-BAS has mapped six of the nine ecosystem types in Bulgaria, and had the lead role in developing the underlying methodological framework. However, the final reports are under verification and publications upon it are still to follow, with findings being systematized. Similarly, work is underway in other countries too.  Therefore, at the current stage the comments are somewhat generic and limited to the general approach (Chapter 1) but it would be suitable, if such a mechanism existed, to keep contributing beyond June 26 until the report is ready. It may be good to allow for submitting links to new publications on a regular basis, so the report authors would get up-to-date information in a timely manner.	Thank you for the suggestion concerning new literature. The IPBES guidelines requires us to establish a cut-off date for literature (April 2017), but we have attempted to be flexible in incorporating more recent, but highly important, material.

						The assessment's description in Chapter 1 appears anthropocentric without a clear focus on humans as part of Nature. Since the Assessment clearly notes (Table 1.1, Figure 1.2) that the IPBES has a scope overarching earlier assessments such as MA, TEEB, MAES by providing a holistic view on Nature, the introduction, too, may need to put more emphasis on the socio-ecologic system as a single entity rather than merely a source of benefits to humans.		
Kremena Gocheva		0	0	0		This could lead onto introducing insights at the win-win and lose-lose options, including the ecosystem disservices, as well as a more systemic view at the continuum of states in which the socio-ecologic system is evolving over time. It would bring out more clearly the NATURE component of the IPBES CF, in particular its Mother Earth and Systems Values categories which appear to be underrepresented in the current draft. Their equivalent in Western science appears to be not the entire body of knowledge on biodiversity and ecosystems but rather the parts of ecology that treat ecosystems from the energy/emergy/entropy/information theory points of view.	Chapter 1 has been edited considerably to adopt a more comprehensive socio-ecological systems approach as well as recognising the intrinsic value of nature and pointing out non-material relational values.	
Johannes Langemeyer	Ch.2		0	0	0	0	Please double check that the understanding of sub regions within ECA is kept equally, this does not always seem to be the case.	We follow now the guidelines for IPBES-ECA
Johannes Langemeyer	Ch.2		0	0	0	0	The overall coherency of the chapter is needs to be improved; there is quite some redundant information in the sub-sections (for example on trends; or between 2.3.1 and 2.2.2).	We hope that the new narrative addresses this problem
Johannes Langemeyer	Ch.2		0	0	0	0	Despite the fact that you state in the introduction that there are differences between ES and NCP, the two concepts have been used as synonymously. This is confusing. The need to (partly) substitute ES by NCP in the IPBES is not clear. In any case, the terminology should be consistent throughout the chapter.	This is clarified in chapter 1.
Johannes Langemeyer	Ch.2		0	0	0	0	A clear bias towards information from Western Europe is observed. This may on the one hand be due to the larger research activity in this sub region, but it might also be related to the lacking integration of researcher and their knowledge from Central Europe, Eastern Europe and Central Asia. Regional research gaps should be clearly stated for all subsections to avoid biased information.	We recognize this in section 2.5.
Johannes Langemeyer	Ch.2		0	0	0	0	A clear statement on lacking evidence and future research needs should be included in all sections (as for example given in 2.2.2.4.2 and in the other health section)	This is now included in section 2.5.
Johannes Langemeyer	Ch.2		0	0	0	0	Check quotation style in the entire chapter.	We follow the guidelines given for ECA assessment of using APA 6th edition style
Johannes Langemeyer	Ch.2		0	0	0	0	Make sure abbreviations are explained in the Ex summary.	It will be a list of abbreviations in the whole ECA assessment
Amor Torre-Marín	Ch.2		0	0			The term benefits is used many times in the chapter. In some cases it could be replaced by 'contributions' to better reflect the NCP terminology	We did this effort!
							General comments: - Thanks for all the excellent substance - Way too long, please condense - Knowledge gaps should be treated similarly throughout the chapter (e.g., now extensive in health) - Monetary subsection will be very important covering for all NCPs - in this context not only the marketable but also value of non-marketable common goods and services need to be addressed	
Markus Fischer	Ch.2		0	0				Knowledge gaps are now in section 2.5.; Monetary values has a section
Robert Watson	Ch.2		0	0			An assessment of NCP under future scenarios in chapters 2 is needed.	Now included
							There should be some comment about the regulation of organisms detrimental to humans as an ecosystem service, and in particular on the regulation by predators of the population size of non-harmful important animals (e.g. large herbivore populations by wolves or lions). It is quite surprising that nothing of this important issue is mentioned in the chapter. Indeed, there are a lot of literature dealing with the topic, as for example: Ripple WJ, Estes JA et al. (2014). Status and ecological effects of the world's largest carnivores. Science, 343 (6167): 1241484. doi:10.1126/science.1241484; L. R. Prugh et al. (2009). The rise of the mesopredator. Bioscience 59, 779–791. doi: 10.1525/bio.2009.59.9.9; J. A. Estes et al. (2011). Trophic downgrading of planet Earth. Science 333, 301–306. doi: 10.1126/science.1205106; pmid: 21764740; R. L. Beschta, R. J. Ripple (2009). Large predators and trophic cascades in terrestrial ecosystems of the western United States. Biol. Conserv. 142, 2401–2414. doi:10.1016/j.biocon.2009.06.015; E. G. Ritchie et al. (2012). Ecosystem restoration with teeth: What role for predators? Trends Ecol. Evol. 27, 265–271. doi: 10.1016/j.tree.2012.01.001; pmid: 22321653	
Jorge Lozano	Ch.2		0	0	0	0		We have now a Box about the human-wildlife conflicts
							Genetic diversity there is focused on medicinal plants. What about crops, animals, forests, fish - through breeding programs and sustaining viable wild populations?	Actually, genetic diversity matters for chapter 3, but not 2. In any case, we also address this issue in the new assessed NCP of future options.
Bruno Fady	Ch.2		0	0	0	0		
Germany	Ch.2		0	0			please ensure all citations are correct and include also the year of publication, especially for all tables	Yes, we are now confident that this is correctly done in the final version
							Three aspects regarding NCPs and impacts on NCPs (s. link to problems addressed in Chapt.4) may deserve more attention in chapter 2: - fresh groundwater (NCP) polluted by nitrogen(impact) due to intensive agriculture and livestock farming (driver) (s. Natural Capital Germany – TEEB DE, 2016: Ecosystem services in rural areas - Basis for human well-being and sustainable economic development - Summary for decision makers. <a href="http://www.naturkapital-teeb.de/en/publications/own-publications/report-2.html">http://www.naturkapital-teeb.de/en/publications/own-publications/report-2.html</a> - reduction of soil carbon (NCP) due to agricultural or forestry use on drained peatlands (e.g. accounting for approximately 4.3 % of Germany's gross total annual GHG emissions. Source: Natural Capital Germany – TEEB DE, 2015: Natural Capital and Climate Policy - Synergies and Conflicts - Summary for decision makers. <a href="http://www.naturkapital-teeb.de/en/publications/own-publications/report-1.html">http://www.naturkapital-teeb.de/en/publications/own-publications/report-1.html</a> - loss of arable soils due to urban sprawl. "Sealing" is mentioned as an inter alia example of threats to soil fertility on page 35, line 1019 but this seems to be insufficient to address the relevance of this problem.	The influence of agriculture on freshwater quality is mentioned in section 2.2.1.4. but the text had to be shortened. The loss of carbon from soils has been expanded with references in section 2.2.1.4 : Climate and 2.2.1.7 Soils. Thank you for the reference. We agree that urban sprawl is a major issue. It is covered in detail in chapter 4 and in the present chapter we (can) only cover the consequences in terms of fertile soils losses.
Germany	Ch.2		0	0				
Germany	Ch.2		0	0			All regional assessments should follow the same definitions and e.g. classifications of NCPs. These aspects are important for the comparability of the result, especially since they all provide input for the IPBES global assessment. Please ensure this is the case by cross checking with the other reg. assessments.	Definitions of NCP are now given in Chapter 1 and we have followed them
							Please ensure, that there is a better balance between regions and different scales- the chapter is very much dominated by EU-based studies. Sometimes examples are very broad, sometimes very specific national or sub-national examples. It would be helpful to get some hints on why some examples were chosen (and not others) and what implications can be drawn from them?	We add in section 2.1. why we added these examples. Overall, we try to synthesise the information, but when this is not available, we bring examples
Germany	Ch.2		0	0			Most statements in the executive summary are associated with quantitative likelihood statements or qualitative confidence levels as outlined in Chapter 1, section 1.6.1. However, in the chapter itself, very little remarks on (un)certainity levels of findings are made. It would be useful to provide some hints in the chapter itself on how the uncertainty levels of the key messages were actually derived.	We have the mandate to provide confidence levels only in the executive summary
							This Chapter has been extensively revised and is much better than the FOD. Some sections that were incomplete in the FOD have been revised, notably that on pollination, but the section on pest and disease control is now deleted. Given that this is as important, or more important, than pollination, I am surprised that it is not included.	We are very sorry, but we have to edit down the whole chapter because wording constrains. In the final version, we were unable to add this information. However, we added a Box 2.5. where this topic is slightly mentioned.
Allan Watt	Ch.2		0	0				Graciela, thanks for your constructive comments and positive message. It is very much appreciated.
Graciela Rusch	Ch.2		0	0			General Comment: Dear Berta and Andrew. I have read the report with much interest. Congratulations to you and the chapter's authors. The last sections (2.3) are very good, and convey strong messages. Here are some general comments and some more specific ones. My best regards, Graciela	

Graciela Rusch	Ch.2	0	0		General for the chapter. Although it is stated that the assessment of NCP requires of getting and putting together information about the different components that describe NCP (the characteristics of nature that underpin the generation of benefits (the capacity to generate benefits), the benefits that are derived nature and about how these benefits impact 'quality of life'. In some cases, the value of these benefits is presented (in monetary and non-monetary terms); this structure is not always consistent throughout the chapter sections and the different NCP. This, I is often due to the lack of information/knowledge on some of these components, because these information may not be available and/or because until now, the information about the different components cannot be readily be linked together. It would be good that these limitations are indicated in the sections. Which are the missing links or knowledge gaps.	In the final version, we follow the same structure for all NCP: basic description, capacity for its supply in ECA and across subregions, its demand and use in ECA and across subregions and a short introduction about its contributions to quality of life. The economic and non-economic values can be found now in 2.3.5 and a final section of knowledge gaps is in 2.5.
Graciela Rusch	Ch.2	0	0		General for the chapter. In many cases, the evidence is very fragmented across the region. It would be good that the sections start with a synthesis indicating the quality of the evidence (important information gaps), where there is good evidence and where there are gaps, how many countries in the region have information, etc. And then, include the results of the review. It would also be good to present a summary on where the information has been retrieved in each case. What kind of sources (this appears in some places (e.g. review and statistics), but it is not consistent. Also to provide some synthesis /general statement when very specific information is provided. For instance, the evidence can refer to the use of a particular species, in some part of the region: What can be said generally on these trends?	We provide some of this information in the executive summary and in knowledge gaps. The structure of each section was already agreed in the second authors meeting and approved by all the authors.
Andrew Wade	Ch.2	0	0		Congratulations to all the authors and review editors on excellent work to collate and present the material. The chapter is impressive.	We do really appreciate this positive comment. Many thanks!
The Netherlands: Astrid Hilgers	Ch.2	0	0		Good amount of literature on indicators and models	We do really appreciate this positive comment. Many thanks!
The Netherlands: Astrid Hilgers	Ch.2	0	0		although mentioned Nature's Contributions to People, but the chapter seems to have a strong bias towards agriculture. Also the concept of NCP seems to be used inconsistently. Unclear how and where it is used in the same way as ES.	The sections have been equally distributed (1200 words per NCP). Chapter 1 clarifies differences between NCP and ES.
ECA values liaison group	Ch.2	0	0		Modern and traditional forms of land use, such as agriculture and fishing, can both be more or less sustainable. Traditional use is not necessarily more sustainable, and modern approaches are not necessarily unsustainable. This fact is not reflected in the SPM See lines 604-607 on pg 23, and lines 584-587 on pg 22.	Narrative of SPM and key messages has changed
ECA values liaison group	Ch.2	0	0		When applicable, i.e. when different value types are mentioned or discussed, please refer to the values table and definitions in Chapter 1 that introduces and defines all value types in the assessment. This will be suggested to each ECA chapter	section 1.5.2 now referred to in the introduction of chapter 2
ECA values liaison group	Ch.2	0	0		Check that all subregions are covered roughly equally in terms of values.	In the new version, we add a new section of values that covers the four regions, when data is available
Mark Snethlage	Ch.2	0	0		In this table, suggestions are made for maps to illustrate some sections of the different chapters. A document with a number of examples (referred to below) is available at:  <a href="https://tinyurl.com/ECA-Maps">https://tinyurl.com/ECA-Maps</a>  ECA sharepoint site login required	We do not understand this comment
Hanna Skryhan	Ch.2	0	0		Strong bias to WE! The lack of the analysis of the subregions. The paragraph 2.2 is totally missing in the summary	The geographical bias is strongly recognized in section 2.5. and we have made many efforts to include other subregions
José Antonio Sánchez Zapata	Ch.2	0	0	0	In my opinion the draft is a really thoughtful work that will for sure improve the IPBES assessments. Nevertheless I would like to point out that the draft might pay more attention to the ecological role of predators scavengers to provide ecosystem services. Large predators and obligate scavengers (ie vultures) are among the most threatened functional groups in ecosystem worldwide. In spite of, they are key groups in ecosystem functioning that provide with important ecosystem services in relation to the regulation of food webs, the elimination of carcasses, CO2 emission savings, control of pests and parasite. Furthermore, humans and scavenging vertebrates, have been interdependent since the Late Pliocene, when early hominins turned to meat as a food source. The close relationship with scavenging birds and mammals has benefited humans since the origin of early Homo species in multiple ways. For instance, the removal of animal debris before putrefaction has played an important hygienic role for millennia (Moleón & Sánchez-Zapata, 2014. Bioscience, doi:10.1093/biosci/biu034). I consider that the draft might improve with an insight on the role of facultative and obligate scavengers in ecosystem function and services. References: Margalida, A., Bogliani, G., Bowden, C.G.R., Donazar, J.A. Genero, F., Gilbert, M., Karesh, B., Kock, R., Lubroth, J., Manteca, X., Naidoo, V., Neimánis, A., Sánchez-Zapata, J.A., Taggart, M.A., Vaarten, J., Yon, L., Kuiken, T. & R. E. Green. 2014. One Health approach to use of veterinary pharmaceuticals. Science, 346: 1296-1298. Mateo-Tomás P, Olea PP, Moleón M, Vicente J, Botella F, Selva N, Viñuela J, Sánchez-Zapata JA. 2015. From regional to global patterns in vertebrate scavenger communities subsidized by big game hunting. Diversity & Distributions, 21: 913-924. Moleón, M., Sánchez-Zapata, J.A., Margalida, A., Carrete, M., Owen-Smith, N. & Donazar, J.A. 2014. Humans and scavengers: the evolution of interactions and ecosystems services. Bioscience, 64: 394-403. Moleón, M., Sánchez-Zapata, J.A., Selva, N., Donazar, J.A. & Owen-Smith, N. 2014. Interspecific interactions linking predation and scavenging in terrestrial vertebrate assemblages. Biological Reviews, 89: 1042-1054. Moleón M & Sánchez-Zapata JA. 2016. Non-trophic functions of carcasses: from death to the nest. Frontiers in Ecology and the Environment, 14: 340-341. Morales-Reyes Z, Pérez-García JM, Moleón M, Botella F, Carrete M, Lazcano, C. Moreno-Opo R, Margalida A, Donazar JA & Sánchez-Zapata JA. 2015. Supplanting ecosystem services provided by scavengers raises greenhouse gas emissions. Scientific Reports, 5: article 7811	In this new version, we have invited three experts in the topic (JA Sanchez-Zapata, M Moleon and Z Morales) to adress this topic, which actually contributes to assess the NCP of regulation of detrimental organisms. So, thanks for this suggestion
ECA values liaison group	Ch.2	0	0		Please double check the use of the term 'worldview' to ensure it is used consistently, and consistently with IPBES wording and meaning, or at least it is clear from the context what exactly is meant.	In this version, we avoid to use this word

Dan Faith	Ch.2	0	0	8093	<p>Comments specific to particular lines follow further below, but the initial following comments I think are relevant to both chapters 2 and 3. The scoping for chapter 2 indicates that it will assess NCPs including the status/trends of the NCPs. The scoping for chapter 3 indicates that it will build on the chapter 2 assessment of NCPs and look at the status/trends of biodiversity and ecosystems with an eye to how that influences NCPs. These tasks normally are a close fit, but are in fact overlapping in the case of NCP18. NCP18 is mostly about the contribution of biodiversity itself in providing "maintenance of options" or "option value". For example, NCP18 refers to "Benefits (including those of future generations) associated with the continued existence of a wide variety..." Living variety is of course another way of saying "biodiversity". This NCP18 benefits statement echoes the oldest discussions of the value of biodiversity itself as a benefit (following e.g. Haskins 1974; reviewed in Faith 2017*). *Faith 2017 summarised: "this link between biodiversity and human well-being actually traces back to the "pre-history" of "biodiversity" (roughly, the history of the term before it was invented). Haskins (1974: 646) summarised an important discussion meeting where participants called for "an Ethic of Biotic Diversity in which such diversity is viewed as a value in itself and is tied in with the survival and fitness of the human race". Haskins (1974: 646) warned, "Plants and animals that may now be regarded as dispensable may one day emerge as valuable resources" and that extinction "threatens to narrow down future choices for mankind". Roush (1977: 9) similarly argued that "diversity increases the possibility of future benefits" (for review, see Farnham 1997). IUCN's (1980: section 3) arguments for the conservation of diversity (referring to "the range of genetic material found in the world's organisms") echoed Haskins: "we may learn that many species that seem dispensable are capable of providing important products, such as pharmaceuticals, or are vital parts of life-support systems on which we depend." Later philosophical discussions supported these perspectives. Norton (1986) argued that diversity itself has utilitarian value. Randall (1986: 103) similarly considered unit species and proposed that all species not already distinguished in having recognised human-use values "would be treated as having a positive but unknown expected value." These ideas flowed on to discussions around the new term "biodiversity". McNeely (1988) and Reid and Miller (1989) referred to "option values" of biodiversity. E. O. Wilson (1988) highlighted values for biodiversity reflecting our lack of knowledge about the components of life's variation and their importance to humankind. The MEA (2005a: 32) concluded that "the value individuals place on keeping biodiversity for future generations—the option value—can be significant." Gascon et al. (2015) reviewed the many, sometimes surprising, benefits of species to argue for the importance of option value (and pointed to PD as a candidate measure of option value). The Encyclical Letter "On Care for Our Common Home" (Francis 2015) addressed the loss of biodiversity, arguing for the importance of not only intrinsic values of species but also the option values of biodiversity: "The loss of forests and woodlands entails the loss of species which may constitute extremely important resources in the future, not only for food but also for curing disease and other uses. Different species contain genes which could be key resources in years ahead for meeting human needs and regulating environmental problems...Maclaurin and Sterelny concluded: "The crucial point about option value is that it makes diversity valuable. As we do not know in advance which species will prove to be important, we should try to conserve as rich and representative a sample as possible" (2008:154)." Maintenance of options, or option value, has been described well in the IPBES conceptual framework, in the preliminary guidelines, and in the IPBES catalogue of assessments. NCP 18 nicely echoes the Millennium Ecosystem Assessment (MEA; Biodiversity synthesis): "Biodiversity loss is important in its own right because ... it represents unexplored options for the future (option values)." and "The loss of biodiversity in some instances is irreversible, and the value individuals place on keeping biodiversity for future generations—the option value—can be significant." So, from the NCP18 perspective, any status report on biodiversity is also a status report on NCP18 – because variety is the benefit. My comments below therefore link to both chapters 2 and 3. The reference list for all comments is provided at the bottom. Chapter 2 is to address how biodiversity (and ecosystem functions and services) contribute to good quality of life and address the trends in nature's contribution and the link between nature's contributions to people and their quality of life. The scoping notes links to CBD Strategy/Goal D – enhancing benefits to all, and with reference to intergenerational equity issues. Thus, it is important to discuss NCP 18. The current drafts of chapters 2 and 3 report on the status and trends of biodiversity broadly – e.g. reporting red list status for many different species – but these assessments regarding global biodiversity are not yet well-linked to NCPs. This would be accomplished by linking the red list status to the status of NCP18 (see below). In chapter 2, the assessment relating to good quality of life arising from NCP18's "Benefits (including those of future generations) associated with the continued existence of a wide variety" could begin by noting recent examples. The chapter could point to some of the actual recent discoveries and benefits that have emerged from "maintenance of options". For example, Chassagnon et al (2017) reported this year that the venom of the Darling Downs funnel web spider (<i>Hadronyche infensa</i>) is the unlikely source for a drug to ward off brain damage caused by strokes. Also this past year, Peel et al (2016) reported that the milk from Tasmanian devils surprisingly provides a weapon against antibiotic-resistant bacteria. There are many more recent examples in all the regions of these unanticipated benefits that fit under NCP18. These stories and others have been reported in the popular press, reinforcing people's relational value linking biodiversity to welfare of future generations (see Faith 2017). Option value of biodiversity has been promoted well by conservation NGOs (for perspective see Gascon et al. (2015) who provide many examples of surprising benefits from biodiversity). Gascon et al. also noted the measurement problem and point to</p>	<p>In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA. The final document has this information as a section.</p>
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					<p>“phylogenetic diversity” as a likely good measure of option value (see below). Over the past decade or more, a strong case (reviewed in Faith 2017) has been made for an indicator of “maintenance of options” as the estimate, over multiple taxonomic groups, of the maintenance of phylogenetic diversity (“PD” sensu Faith 1992). Larsen et al. (2012) argued that a big challenge in biodiversity conservation is to find a “robust proxy” for global option values that effectively captures potential future values to society. They concluded that “maximizing the retention of phylogenetic diversity (PD) should also maximize option value.” Cadotte and Davies (2010) argued that “maximizing the preservation of PD will also tend to maximize the preservation of feature diversity.” Jetz et al (2014) argued “While any particular trait may be phylogenetically labile, PD captures the integrated genotype and phenotype of a lineage and so represents both measured (e.g., present) and unmeasured (e.g., future) function and capacity.” (see also Laity et al 2015; Moullot et al 2016; Pollock et al 2017). Support for PD as a measure of option value is found also in philosophy of science work (e.g. Maclaurin and Sterelny 2008) and among economists (e.g. Nehring, K., and C. Puppe 2004). Arrieta et al 2010 has explored how recent discoveries link to phylogenetic diversity. Fig 2 <a href="http://www.pnas.org/content/107/43/18318.full">http://www.pnas.org/content/107/43/18318.full</a> The IPBES catalogue of assessments illustrates the link of PD to option value, based on the many foods and medicines discovered in plants. <a href="http://catalog.ipbes.net/assessments/144">http://catalog.ipbes.net/assessments/144</a> “Phylogeny and the sustainable use of biodiversity: an assessment based on the Survey of Economic Plants for Arid and Semi-Arid Lands.” Forest et al. (2007) explored PD and option value using an estimated phylogenetic tree for genera found in the Cape hotspot of South Africa. Forest et al. (2007) demonstrated that, if we did not know about those medicinal, food, and other uses, then preserving sets of species with high PD would be a good way to preserve these unknown benefits. PD captures option values well because it reflects “feature diversity”. This link is well corroborated through the many tests (moderate to high confidence based on many published PTP tests that corroborate the PD model; e.g. Slowinski and Crother (1998); Wilkinson et al 2002). A well-established framework for quantifying such global option values of biodiversity is “phylogenetic diversity”. Status and trends in biodiversity and NCP18 could look at status and trends in PD in two ways. 1) How well is PD represented well in the regional and global protected areas system? 2) How much PD is in peril given the known imperilled species from red list assessments? 1) Pollock et al (2017; Extended Data Figure 3) show the global and regional priorities for expanding protected areas to benefit the bird versus mammal phylogenetic diversity. See Extended Data Figure 3f <a href="https://www.nature.com/nature/journal/v546/n7656/fig_tab/nature22368_ft.html">https://www.nature.com/nature/journal/v546/n7656/fig_tab/nature22368_ft.html</a> Moullot et al (2016) found hotspots areas having lots of poorly protected PD, for fish and for corals: Fig 3 b and c <a href="http://www.nature.com/articles/ncomms10359">http://www.nature.com/articles/ncomms10359</a> 2) The studies above address the “maintenance of options” challenge of securely representing PD in protected areas. A complement to those efforts is to assess, for many taxonomic groups, how much PD currently is imperilled (based on red list assessments of imperilled species). The assessment of imperilled PD is well-established in the EDGE program. The value to people of NCP18 is illustrated well by this successful global program, EDGE (see references), based on preservation of PD. The EDGE of Existence programme highlights and conserves phylogenetically distinctive species that are “imperilled” or on the verge of extinction. This program and the many related regional and global studies (listed in references) provides the existing data useful for this assessment of NCP18. Typically these studies, over many different taxonomic groups, integrate red list assessment with estimates of Evolutionary Distinctiveness (ED) of species. Evolutionary Distinctiveness (ED) measures the proportion of total phylogenetic diversity (PD; measured as the sum of branch lengths in millions of years) by giving the species credit for a branch inverse-weighted by the number of species sharing that branch) (Isaac et al., 2007). Globally, for multiple taxonomic groups, we now have tabulated published lists of ED associated with good phylogenies, and have red list assessments of the species. We could add-up total ED values or count number of EDGE species in the region. But the most useful summary of this available information is simply sum of the tabulated ED values of the threatened species, as this approximates threatened or “imperilled” PD – thus, providing information linking biodiversity status and change to change in NCP18. *Technical comment – tabulations for all groups focus on so-called ED values (evolutionary distinctiveness: the total PD is divided up among the species where the ED score for a species is the sum of its ancestral branch lengths, each divided by the number of descendants of that branch). Thus, each species gets partial credit for overall PD. This is dominated naturally by terminal branch length....but includes a fractional part of each deeper ancestral branch. Available tabulations of ED scores for species therefore are informative – the total of all ED scores is the total PD and the total of the ED scores for all imperilled species approximates nicely the total imperilled PD (an estimate of expected loss of PD). This use of the available tabulations, with its links to red list categories, is more informative than popular simple summing up in a region of all ED values (this has been shown to be a relatively weak indicator of total regional PD (Faith 2016)). Thus, NCP18 can be assessed through the integration of two bits of existing information: the accepted core indicator information on red list, and information on a recognised measure of biodiversity that links to option value. Below, are the draft assessments for multiple taxonomic groups (and I have emailed this to one or more of the ALAs). The portion of imperilled PD allocated to the region is notional in these draft diagrams; it is not yet tabulated as a portion of the overall tabulated global imperilled PD for a given group. I can provide this, plus more descriptive text as needed.</p>	
Dan Faith	Ch.2	0	0	8091	Arrieta, Jesús M., Sophie Arnaud-Haond, and Carlos M. Duarte (2010) What lies underneath: Conserving the oceans’ genetic resources. PNAS <a href="http://www.pnas.org/cgi/doi/10.1073/pnas.0911897107">www.pnas.org/cgi/doi/10.1073/pnas.0911897107</a>	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Barker, GM 2002 Phylogenetic diversity: a quantitative framework for measurement of priority and achievement in biodiversity conservation BIOLOGICAL JOURNAL OF THE LINNEAN SOCIETY Volume: 76 Issue: 2 Pages: 165-194	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Brooks TM, Akçakaya HR, Burgess ND, Butchart SHM, Hilton-Taylor C, Hoffmann M, Juffe-Bignoli D, Kingston N, MacSharry B, Parr M, Perianin L, Regan EC, Rodrigues ASL, Rondinini C, Shennan-Farpon Y, Young BE (2016) Analysing biodiversity and conservation knowledge products to support regional environmental assessments. Scientific Data 3: 160007.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	<a href="http://dx.doi.org/10.1038/sdata.2016.7">http://dx.doi.org/10.1038/sdata.2016.7</a>	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Brooks TM, Akçakaya HR, Burgess ND, Butchart SHM, Hilton-Taylor C, Hoffmann M, Juffe-Bignoli D, Kingston N, MacSharry B, Parr M, Perianin L, Regan EC, Rodrigues ASL, Rondinini C, Shennan-Farpon Y, Young BE (2016) Data from: Analysing biodiversity and conservation knowledge products to support regional environmental assessments. Dryad Digital Repository.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	<a href="http://dx.doi.org/10.5061/dryad.6gb90.2">http://dx.doi.org/10.5061/dryad.6gb90.2</a>	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Bruford, Michael W., Neil Davies, Mohammad Ehsan Dulloo, Daniel P. Faith, Michele Walters (2017) Monitoring Changes in Genetic Diversity. In: The GEO Handbook on Biodiversity Observation Networks. pp 107-128. available at: <a href="http://link.springer.com/chapter/10.1007/978-3-319-27288-7_5/fulltext.html">http://link.springer.com/chapter/10.1007/978-3-319-27288-7_5/fulltext.html</a>	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Cadotte MW and JT Davies (2010) Rarest of the rare: advances in combining evolutionary distinctiveness and scarcity to inform conservation at biogeographical scales. Diversity and Distributions, 16, 376–385	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Chassagnon, Irène R., Claudia A. McCarthy, c, Yanni K.-Y. China, Sandy S. Pinedaa, Angelo Keramidassd, Mehdi Moblie, Vi Phamb,c, T. Michael De Silvac,c, Joseph W. Lynchd, Robert E. Widdopb,c, Lachlan D. Rasha,f,1, and Glenn F. Kinga. (2017) Potent neuroprotection after stroke afforded by a double-knot spider-venom peptide that inhibits acid-sensing ion channel 1a 1114 no. 14 3750–3755, doi: 10.1073/pnas.1614728114	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Daru, B.H., Bank, M. & Davies, T.J. (2015) Spatial incongruence among hotspots and	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	complementary areas of tree diversity in southern Africa. Diversity and Distributions, 21(7), 447 769-780.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Daru, B.H., Yessoufou, K., Mankga, L.T. & Davies, T.J. (2013) A global trend towards the loss of evolutionarily unique species in mangrove ecosystems. PLoS ONE, 8, e66686.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature

Dan Faith	Ch.2	0	0	8091	EDGE of Existence	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	<a href="https://www.edgeofexistence.org/ZSL_London">https://www.edgeofexistence.org/ZSL_London</a> .	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Faith, D. P. (1992). Conservation evaluation and phylogenetic diversity. <i>Biological Conservation</i> , 61, 1–10.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Faith DP, Ferrier, S., Williams, KJ (2008) Getting biodiversity intactness indices right: ensuring that "biodiversity" reflects "diversity" <i>Global Change Biology</i> 14, 207-217.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Faith, D. P. (2011). Higher-Level Targets for Ecosystem Services and Biodiversity Should Focus on Regional Capacity for Effective Trade-Offs. <i>Diversity</i> 2011, 3, 1-7; doi:10.3390/d3010001	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Faith Daniel P. (2014) Ecosystem services can promote conservation over conversion and protect local biodiversity, but these local win-wins can be a regional disaster. <i>Australian Zoologist</i> Online pp1-10. DOI 10.7882/AZ.2014.031 available at: <a href="http://catalog.ipbes.net/system/assessment/141/references/files/710/original/Faith_Australian_Zoologist_2014.pdf?1422606347">http://catalog.ipbes.net/system/assessment/141/references/files/710/original/Faith_Australian_Zoologist_2014.pdf?1422606347</a>	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Faith DP (2017) A general model for biodiversity and its value. in <i>The Routledge Handbook of Philosophy of Biodiversity</i> (Eds. J Garson, A Plutynski, S Sarkar)	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	<a href="https://www.routledge.com/products/9781138827738">https://www.routledge.com/products/9781138827738</a>	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Faith, D.P., Magallón, S., Hendry, A.P., Conti, E., Yahara, T., Donoghue, M.J., 2010. Ecosystem services: an evolutionary perspective on the links between biodiversity and human well-being. <i>Current Opinion in Environmental Sustainability</i> 2, 66–74.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Forest, F., Grenyer, R., Rouget, M., Davies, T.J., Cowling, R.M., Faith, D.P., Balmford, A., Manning, J.C., Proches, S., van derBank, M., Reeves, G., Hedderston, T.A. & Savolainen, V. (2007) Preserving the evolutionary potential of floras in biodiversity hotspots. <i>Nature</i> , 445, 757–760.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Francis (2015) Encyclical Letter Laudato Si' of the Holy Father Francis: On Care for Our Common Home [English language version]. The Vatican.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Gascon C., Thomas M. Brooks, Topiltzin Contreras-MacBeath, Nicolas Heard, William Konstant, John Lamoreux, Frederic Launay, Michael Maunder, Russell A. Mittermeier, Sanjay Molur, Razan Khalifa Al Mubarak, Michael J. Parr, Anders G.J. Rhodin, Anthony B. Rylands, Pritpal Soorae, James G. Sanderson, Jean-Christophe Vié (2015) "The Importance and Benefits of Species." <i>Current Biology</i> , 25: R431–R438.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	González-Orozco, Carlos E. Laura J. Pollock, Andrew H. Thornhill, Brent D. Mishler, Nunzio Knerr, Shawn W. Laffan, Joseph T. Miller, Dan F. Rosauer, Daniel P. Faith, David A. Nipperess, Heini Kujala, Simon Linke, Nathalie Butt, Carsten Külheim, Michael D. Crisp & Bernd Gruber (2016) Phylogenetic approaches reveal biodiversity threats under climate change. <i>Nature Climate Change</i> 6, 1110-1114.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Haskins, C. (1974) "Scientists Talk of the Need for Conservation and an Ethic of Biotic Diversity to Slow Species Extinction", <i>Science</i> , 184: 646-47.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Isaac, N.J.B., Turvey, S.T., Collen, B., Waterman, C., Baillie, J.E.M., 2007. Mammals on the EDGE: conservation priorities based on threat and phylogeny. <i>PLoS One</i> 2, e296.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Jetz, W., G. H. Thomas, J. B. Joy, D. W. Redding, K. Hartmann, and A. Ø. Mooers. 2014. Global distribution and conservation of evolutionary distinctness in birds. <i>Curr. Biol.</i> 24:919–930.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Laity, Tania, Shawn W. Laffan, Carlos E. González-Orozco, Daniel P. Faith, Dan F. Rosauer, Margaret Byrne, Joseph T. Miller, Darren Crayn, Craig Costion, Craig C. Moritz, Karl Newport (2015) Phylodiversity to inform conservation policy: An Australian example. <i>Science of The Total Environment</i> , Volume 534, 15 November, Pages 131-143	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Larsen, F.W., W.R. Turner, T.M. Brooks, et al. (2012). Conserving critical sites for biodiversity provides disproportionate benefits to people. <i>PLoS One</i> 7: e36971.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Maclaurin J, Sterelny K (2008) What is biodiversity? University of Chicago Press.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Biodiversity Synthesis. World Resources Institute, Washington, DC.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Millennium Ecosystem Assessment, 2005. Chapter 4: Biodiversity. World Resources Institute, Washington, DC.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Mouillot, D., Parravicini, V., Bellwood, D. R., Leprieux, F., Huang, D., Cowman, P. F., Albouy, C., Hughes, T. P., Thuiller, W., & Guilhaumon, F. (2016). Global marine protected areas do not secure the evolutionary history of tropical corals and fishes. <i>Nature Communication</i> , 7, 10359.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Mukherjee, Supratim, Rekha Seshadri, Neha J Varghese, Emiley A Eloë-Fadros, Jan P Meier-Kolthoff, Markus Göker, R Cameron Coates, Michalis Hadjithomas, Georgios A Pavlopoulos, David Paez-Espino, Yasuo Yoshikuni, Axel Visel, William B Whitman, George M Garrity, Jonathan A Eisen, Philip Hugenholtz, Amrita Pati, Natalia N Ivanova, Tanja Woyke, Hans-Peter Klenk & Nikos C Kyripides (2017) 1,003 reference genomes of bacterial and archaeal isolates expand coverage of the tree of life <i>Nature Biotechnology</i>	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	8091	Nehring, K., and C. Puppe (2004). Modelling phylogenetic diversity. <i>Resource and Energy Economics</i> 26(2): 205–235.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature



Dan Faith	Ch.2	0	0	0	0	Peel E., Y. Cheng, J. T. Djordjevic, S. Fox, T. C. Sorrell & K. Belov (2016) Cathelicidins in the Tasmanian devil ( <i>Sarcophilus harrisii</i> ) Scientific Reports 6, Article number: 35019. doi:10.1038/srep35019	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Pollock, Laura J. Wilfried Thuiller1 & Walter Jetz (2017) Large conservation gains possible for global biodiversity facets. Nature	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Roush, G. (1977) "Why save diversity?" Nature Conservancy News 21: 9-12.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Safi K, Armour-Marshall K, Baillie JEM, Isaac NJB (2013) Global Patterns of Evolutionary Distinct and Globally Endangered Amphibians and Mammals. PLOS ONE 8(5): e63582.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Slowinski Joseph B. and Brian I. Crother (1998) Is the PTP Test Useful? Cladistics 14, 297 302	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Sonnenburg1,*, Erica D., Samuel A. Smits1,*, Mikhail Tikhonov2, Steven K. Higginbottom1, Ned S. Wingreen3, and Justin L. Sonnenburg1 Diet-induced extinction in the gut microbiota compounds over generations Nature. 2016 January 14; 529(7585): 212–215	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Thuiller, Wilfried Sébastien Lavergne, Cristina Roquet, Isabelle Boulangeat, Bruno Lafourcade & Miguel B. Araujo (24 February 2011) Consequences of climate change on the tree of life in Europe Nature 470, 531–534 doi:10.1038/nature09705	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Tonini, J. F. R., K. H. Beard, R. B. Ferreira, W. Jetz, and R. A. Pyron. 2016. Fully-sampled phylogenies of squamates reveal evolutionary patterns in threat status. Biol. Conserv. 204:23–31.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Veron et al. (2016) Loss and conservation of evolutionary history in the Mediterranean Basin. BMC Ecol 16:43	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 WILKINSON, MARK, PEDRO R. PERES-NETO, PETER G. FOSTER, AND CLIVE B. MONCRIEFF (2002) Type 1 Error Rates of the Parsimony Permutation Tail Probability Test Syst. Biol. 51(3):524–527.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Zhang Jian, Scott E. Nielsen, Youhua Chen, Damien Georges, Yuchu Qin, Si-Shuo Wang, Jens-Christian Svenning and Wilfried Thuiller (2016) Extinction risk of North American seed plants elevated by climate and land-use change. Journal of Applied Ecology 2016.	This assessment is for Europe and Central Asia
Dan Faith	Ch.2	0	0	0	0	8091 Yessoufou, Kowiyou, Barnabas H. Daru2,3   Respinah Tafire1   Hosam O. Elansary4   Isaac Ramped1 (2017) Integrating biogeography, threat and evolutionary data to explore extinction crisis in the taxonomic group of cycads Ecology and Evolution. 2017;7:2735–2746.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
Dan Faith	Ch.2	0	0	0	0	8091 Yessoufou K. *, G.H. Stoffberg (2016) Biogeography, threats and phylogenetic structure of mangrove forest globally and in South Africa: A review. South African Journal of Botany 107 114–120.	In the new version, we invite an expert (Dan Faith) to address this NCP and we now provide a general overview of maintenance of options in ECA with its relevant literature
PESC-4: Kristina Raab	Ch.2	0	0	0	0	0 Chapter 2 needs a better linkage between NCPs and nature based solutions	We add nature-based solutions in the final version when it was possible, e.g. water quality regulation
Marcos Moleón	Ch.2	0	0	0	0	0 First of all, I'd like to emphasize the really thoughtful work behind this draft. Second, I'd like to indicate that it could gain much if it would treat more in depth the ecological role of predators and scavengers to provide ecosystem services. Large predators and obligate scavengers (i.e. vultures) are among the most threatened functional groups worldwide. At the same time, they exert important influence on ecosystem functioning and provide essential ecosystem services in relation to food web regulation, carcasses removal, CO2 emission savings, and pests and parasite control. Moreover, humans and scavenging vertebrates have been interdependent since the Late Pliocene, when early hominins turned to meat as a food source. The close relationship with scavenging birds and mammals has benefited humans since the origin of early Homo species in multiple ways. For instance, the removal of animal debris before putrefaction has played an important hygienic role for millennia. Thus, in my opinion, the draft might improve by explicitly mentioning the multiple roles of scavengers (both facultative and obligate) in ecosystem function and services. References: Margalida, A., Bogliani, G., Bowden, C.G.R., Donazar, J.A. Genero, F., Gilbert, M., Karesh, B., Kock, R., Lubroth, J., Manteca, X., Naidoo, V., Neimanis, A., Sánchez-Zapata, J.A., Taggart, M.A., Vaarten, J., Yon, L., Kuiken, T. & R. E. Green. 2014. One Health approach to use of veterinary pharmaceuticals. Science, 346: 1296-1298 Mateo-Tomás P, Olea PP, Moleón M, Vicente J, Botella F, Selva N, Viñuela J, Sánchez-Zapata JA. 2015. From regional to global patterns in vertebrate scavenger communities subsidized by big game hunting. Diversity & Distributions, 21: 913-924 Moleón, M., Sánchez-Zapata, J.A., Margalida, A., Carrete, M., Owen-Smith, N. & Donazar, J.A. 2014. Humans and scavengers: the evolution of interactions and ecosystems services. Bioscience, 64: 394-403 Moleón, M., Sánchez-Zapata, J.A., Selva, N., Donazar, J.A. & Owen-Smith, N. 2014. Interspecific interactions linking predation and scavenging in terrestrial vertebrate assemblages. Biological Reviews, 89: 1042-1054 Moleón M & Sánchez-Zapata JA. 2016. Non-trophic functions of carcasses: from death to the nest. Frontiers in Ecology and the Environment, 14: 340-341 Morales-Reyes Z, Pérez-García JM, Moleón M, Botella F, Carrete M, Lazcano, C. Moreno-Opo R, Margalida A, Donazar JA & Sánchez-Zapata JA. 2015. Supplanting ecosystem services provided by scavengers raises greenhouse gas emissions. Scientific Reports, 5: article 7811	In this new version, we have invited three experts in the topic (JA Sanchez-Zapata, M Moleon and Z Morales) to address this topic, which actually contributes to assess the NCP of regulation of detrimental organisms. So, thanks for this suggestion
Finnish Government	Ch.2	0	0	0	0	0 General: In many parts of the text general conclusions are drawn based on individual local studies. Try to avoid this.	We did now an effort to provide a general overview without putting so much emphasis on local case studies
Finnish Government	Ch.2	0	0	0	0	0 General: Appendixes were not available.	We provided them at the end of the whole document. In the new version, they will be available in the IPBES webpage

Zebensui Morales Reyes	Ch.2	0	0	0	0	<p>I would like to highlight the importance of the role of scavengers as providers of ecosystem services. Although the draft is a really detailed work, in my opinion the draft should take into account the ecological role of both obligate (i.e., vultures) and facultative scavengers (e.g., large predators, corvids or raptors) as ecosystem service providers. It is surprising that there is no content related to this topic in NCP 10. Regulation of organisms detrimental to humans. Many large predator and vultures are globally endangered and they are crucial for providing ecosystem services, such as disease and pest control, nutrient cycling, indirect greenhouse emissions regulation, cultural inspiration or recreational activities. There are several publications about it, e.g.,:</p> <p>Gangoso, L., Agudo, R., Anadón, J.D., de la Riva, M., Suleyman, A.S., Porter, R. &amp; Donazar, J.A. 2013. Reinventing mutualism between humans and wild fauna: insights from vultures as ecosystem services providers. Conservation Letters, 6, 172–179.</p> <p>Mateo-Tomás P., Olea P.P., Moleón M., Vicente J., Botella F., Selva N., Viñuela J., Sánchez-Zapata J.A. 2015. From regional to global patterns in vertebrate scavenger communities subsidized by big game hunting. Diversity &amp; Distributions, 21: 913-924.</p> <p>Moleón, M., Sánchez-Zapata, J.A., Margalida, A., Carrete, M., Owen-Smith, N. &amp; Donazar, J.A. 2014. Humans and scavengers: the evolution of interactions and ecosystems services. Bioscience, 64: 394-403.</p> <p>Moleón, M., Sánchez-Zapata, J.A., Selva, N., Donazar, J.A. &amp; Owen-Smith, N. 2014. Interspecific interactions linking predation and scavenging in terrestrial vertebrate assemblages. Biological Reviews, 89: 1042-1054.</p> <p>Morales-Reyes Z., Pérez-García J.M., Moleón M., Botella F., Carrete M, Lazcano, C. Moreno-Opo R., Margalida A., Donazar J.A. &amp; Sánchez-Zapata J.A. 2015. Supplanting ecosystem services provided by scavengers raises greenhouse gas emissions. Scientific Reports, 5: article 7811</p> <p>Morales-Reyes Z., Sánchez-Zapata J.A., Sebastián-González E., Botella F., Carrete M., Moleón M. 2017. Scavenging efficiency and red fox abundance in Mediterranean mountains with and without vultures. Acta Oecologica, 79: 81-88.</p>	<p>In this new version, we have invited three experts in the topic (JA Sanchez-Zapata, M Moleon and Z Morales) to address this topic, which actually contributes to assess the NCP of regulation of detrimental organisms. So, thanks for this suggestion</p>
David González	Ch.2	0	0	0	0	<p>There is a need to contextualize from the beginning the approach to multiple conceptualizations of values in all assessments according to the proposal in the guide on values.</p>	<p>This is addressed in chapter 1</p>
David González	Ch.2	0	0	0	0	<p>While economic values are not to be prioritized viz-a-viz other types of values (social, health, etc.) it is clear that this is one value dimension that will be sought by many governments. As part of a pluralistic value framing, it is important to not disregard economic values. Economic values would need to be contextualized under the multiple conceptualizations of values approach. This should ideally be done in Chapter 2 of the Regional assessments. In this assessment is present in section 2.2.1 however it is not strong enough and it does not translate in relevant messages for the SPM. This is something that should be done.</p>	<p>Now, economic values is included</p>
David González	Ch.2	0	0	0	0	<p>There is a need to synthesise assessed economic values of NCP within the broader multiple types (instrumental, relational) and dimensionality of values (social, health, etc.). This could be shown by means of a table which provides key information about the values assessed, including those pertaining to economic values. It is important to make explicit what values are being assessed and identify gaps (e.g., lack of information on some types of values). This should ideally be done in Chapter 2 of the assessment.</p>	<p>We tried to provide such information in this final version in section 2.3.</p>
David González	Ch.2	0	0	0	0	<p>The MEP will submit further guidance to support the integration of multiple values in all assessments. We advise you to take this guidance into consideration.</p>	<p>David, we are not sure whether we miss this information, but we had only access to the deliverable of values and valuation and Pascual et al. paper</p>
David González	Ch.2	0	0	0	0	<p>Reading through the text there is a lot of values related content not coming through, when doing a quick review. The values section 2.3.5 should be strengthened through a synthesis work of values related topics throughout the text. This may also allow for shortening the whole chapter</p>	<p>We moved the information of market-values in the same section of values</p>
Health Review: Marieta Braks	Ch.2	0	0			<p>"Routes of pathogen exposure for humans in the environment include through soil, air and water, and through contaminated food or activities that lead to interaction with wild life and domestic animals or disease vectors"</p>	<p>We do not understand this comment</p>
Health Review: Theofilos Poutahidis	Ch.2	0	0	0	0	<p>One issue of concern is that microbial biodiversity is by large overlooked in this chapter. Microbes are a major component of the human environment. In the light of accumulating evidence linking human microbiota and diverse environmental microbial exposures with health and disease, including resistance to NCD's and infections, the environmental microbial biodiversity should be mentioned in chapter 2.3. In fact, exposure to microbes especially during the perinatal period of life may explain many of the health benefits that contact with nature has to offer. Microbes may also connect with nutrition and medicinal plants, since both may exert some of their positive health effects by regulating gut microbiota. In fact, the role of environmental microbes transcends almost all the aspects of biodiversity and human health connection.</p> <p>The 2015 State of knowledge review published by the World Health Organisation and the Secretariat to the Convention on Biological Diversity (CBD) dedicates chapter 8 to environmental microbial diversity and health. The IPBES Regional Assessment for Europe and Central Asia report should also not ignore this very important aspect. This excellent chapter written by Graham Rook and Rob Knight could be the basis for a subchapter that could be included in current chapter 2.3. Indicative 2016 and 2017 relative references are provided below.</p> <p>Thomas S, Izard J, Walsh E, Batich K, Chongsathidkiet P, Clarke G, Sela DA, Muller AJ, Mullin JM, Albert K, Gilligan JP, DiGiulio K, Dilbarova R, Alexander W, Prendergast GC. The Host Microbiome Regulates and Maintains Human Health: A Primer and Perspective for Non-Microbiologists. Cancer Res. 2017 Apr 15;77(8):1783-1812.</p> <p>Roy S, Trinchieri G. Microbiota: a key orchestrator of cancer therapy. Nat Rev Cancer. 2017 May;17(5):271-285.</p> <p>van den Elsen LW, Poyntz HC, Weyrich LS, Young W, Forbes-Blom EE. Embracing the gut microbiota: the new frontier for inflammatory and infectious diseases. Clin Transl Immunology. 2017 Jan 20;6(1):e125</p> <p>Rooks MG, Garrett WS. Gut microbiota, metabolites and host immunity. Nat Rev Immunol. 2016 May 27;16(6):341-52</p> <p>Monda V, Villano I, Messina A, Valenzano A, Esposito T, Moscatelli F, Viggiano A, Cibelli G, Chieffi S, Monda M, Messina G. Exercise Modifies the Gut Microbiota with Positive Health Effects. Oxid Med Cell Longev. 2017;2017:3831972.</p> <p>Hua X, Goedert JJ, Pu A, Yu G, Shi J. Allergy associations with the adult fecal microbiota: Analysis of the American Gut Project. EBioMedicine. 2016;3:172-9.</p>	<p>Biodiversity aspects and the role of organisms, including microorganisms are in chapter 3. Besides, due to the requested editing down of the whole chapter, we could not add more information in this regard</p>

						Chen J, Chia N, Kalari KR, Yao JZ, Novotna M, Soldan MM, Luckey DH, Marietta EV, Jeraldo PR, Chen X, Weinschenker BG, Rodriguez M, Kantarci OH, Nelson H, Murray JA, Mangalam AK. Multiple sclerosis patients have a distinct gut microbiota compared to healthy controls. <i>Sci Rep.</i> 2016;6:28484 Knip M, Siljander H. The role of the intestinal microbiota in type 1 diabetes mellitus. <i>Nat Rev Endocrinol.</i> 2016;12:154-67. Vuong HE, Hsiao EY. Emerging Roles for the Gut Microbiome in Autism Spectrum Disorder. <i>Biol Psychiatry.</i> 2017;81:411-23. Kelly JR, Clarke G, Cryan JF, Dinan TG. Brain-gut-microbiota axis: challenges for translation in psychiatry. <i>Ann Epidemiol.</i> 2016;26:366-72. Rieder R, Wisniewski PJ, Alderman BL, Campbell SC. Microbes and mental health: A review. <i>Brain Behav Immun.</i> 2017 Jan 25. pii: S0889-1591(17)30016-8 Lowry CA, Smith DG, Siebler PH, Schmidt D, Stamper CE, Hassell JE Jr, Yamashita PS, Fox JH, Reber SO, Brenner LA, Hoisington AJ, Postolache TT, Kinney KA, Marciani D, Hernandez M, Hemmings SM, Malan-Muller S, Wright KP, Knight R, Raison CL, Rook GA. The Microbiota, Immunoregulation, and Mental Health: Implications for Public Health. <i>Curr Environ Health Rep.</i> 2016 Sep;3(3):270-86. Claus SP, Guillou H, Ellero-Simatos S. The gut microbiota: a major player in the toxicity of environmental pollutants? <i>npj Biofilms and Microbiomes.</i> 2016;2:16003. Blanton LV, Charbonneau MR, Salih T, Barratt MJ, Venkatesh S, Ilkaveya O, Subramanian S, Manary MJ, Trehan I, Jorgensen JM, Fan YM, Henrissat B, Leyn SA, Rodionov DA, Osterman AL, Maleta KM, Newgard CB, Ashorn P, Dewey KG, Gordon JL. Gut bacteria that prevent growth impairments transmitted by microbiota from malnourished children. <i>Science.</i> 2016;351 Portune KJ, Beaumont M, Davila A, Tomé D, Blachier F, Sanz Y. Gut microbiota role in dietary protein metabolism and health-related outcomes: The two sides of the coin. <i>Trends in Food Science &amp; Technology.</i> 2016;57 Part B:213-32. Ford SA, Kao D, Williams D, King KC. Microbe-mediated host defence drives the evolution of reduced pathogen virulence. <i>Nat Commun.</i> 2016;7:13430. Cortese R, Lu L, Yu Y, Ruden D, Claud EC. Epigenome-Microbiome crosstalk: A potential new paradigm influencing neonatal susceptibility to disease. <i>Epigenetics.</i> 2016;11:205-15. Krautkramer KA, Kreznar JH, Romano KA, Vivas EI, Barrett-Wilt GA, Rabaglia ME, Keller MP, Attie AD, Rey FE, Denu JM. Diet-Microbiota Interactions Mediate Global Epigenetic Programming in Multiple Host Tissues. <i>Mol Cell.</i> 2016;64:982-92. Stein MM, Hrusch CL, Gozdz J, Igartua C, Pivniouk V, Murray SE, Ledford JG, Marques dos Santos M, Anderson RL, Metwali N, Neilson JW, Maier RM, Gilbert JA, Holbreich M, Thorne PS, Martinez FD, von Mutius E, Vercelli D, Ober C, Sperling AI. Innate Immunity and Asthma Risk in Amish and Hutterite Farm Children. <i>N Engl J Med.</i> 2016;375:411-21. Boulangé, C. L., Neves, A. L., Chilloux, J., Nicholson, J. K., & Dumas, M. E. (2016). Impact of the gut microbiota on inflammation, obesity, and metabolic disease. <i>Genome Medicine</i> , 8, 42. Kobyliak, N., Virchenko, O., & Falayeyeva, T. (2016). Pathophysiological role of host microbiota in the development of obesity. <i>Nutrition Journal</i> , 15, 43. Marchesi, J. R., Adams, D. H., Fava, F., Hermes, G. D., Hirschfield, G. M., Hold, G., et al. (2016). The gut microbiota and host health: A new clinical frontier. <i>Gut</i> , 65, 330–339. Stilling, R. M., Dinan, T. G., & Cryan, J. F. (2016). The brain's Geppetto-microbes as puppeteers of neural function and behaviour? <i>Journal of Neurovirology</i> , 22, 14–21.	
Health Review: Daniela Haluza	Ch.2	0	0	0	0	All tables are hard to read and need formatting.	They are now formatted
Health Review: Suzanne Skivington	Ch.2	0	0			It is evident from reading the WHO (2014) document that there has been little communication with the WHOQOL Group network that conducted two decades of international collaborative research in the WHO Division of Mental Health. The Traditional Medicine document (cited and linked in Chapter 2) was published in 2000. This document explicitly recommends using the WHOQOL measures for evaluating multiple dimensions of QoL in the field as it presents the WHOQOL Manual as Annex XI	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Suzanne Skivington	Ch.2	0	0			Some of the comments above could be cross referenced with the section on Language Diversity.	We do not understand this comment
David González	Ch.2	2	26	3	67	From the index it seems that values and valuation are only present in sections 2.3.5, 2.7.10, and 2.7.11 but really they are scattered all throughout the text. For the reader it would be helpful if section 2.3.5 summarized better all values related content throughout the text.	We create a section on values
Harald Pauli	Ch.2	2	27	2	27	suggest to add '(NCP)'	Done
Harald Pauli	Ch.2	2	36	3	66	you may replace 'NCPs' with 'NCP' - it just could be read as NC to peoples, which would not be intended	Done
Harald Pauli	Ch.2	4	71	4	74	This might be misunderstood in the way that the systems are now less important than before.	this has been changed in the first key message to refer to multiple contributions
Mette Skern-Mauritzen	Ch.2	4	71	4	72	As the management of marine systems at least in Europe have become more sustainable over the last 30 years, stocks are rebuilding from overharvest, aquaculture is still rising, and there is this general notion of Blue Growth, I find it difficult to support a general prediction of future decline of marine contributions	the third key message now refers to the recovery of fish stocks and the expansion of aquaculture
Mark Rounsevell	Ch.2	4	73	4	73	"Losses of" rather than "declines in"?	declines preferred
Harald Pauli	Ch.2	4	74	4	74	In the executive summary it may be helpful to put again the full term of NCP in brackets	NCP acronym now not used
UK: David Forrow	Ch.2	4	74	4	74	Abbreviations in full at start of chapter? If a reader started here, they would not know what NCPs are	ncp acronym nmot used and the list of NCPs are in the first and second section of the chapter
Health Review: Edna Cabecinha	Ch.2	4	74	8	224	The acronym NPC appears very earlier in the text, but Nature's Contributions to People (NCP), only appears for the first time on page 8, line 224. It should be introduced in page 4, line 74	NCP acronym now not used
Hanna Skryhan	Ch.2	4	78	5	112	need to short!	this has been heavily revised and shortened
Graciela Rusch	Ch.2	4	83	4	84	For those who are not very familiar about the functions of kelpforests this statements seems to stand by itself. Please, make explicit which NCP that these habitats provide.	this has been edited so the sentence mentions seas and marine habitats
Markus Fischer	Ch.2	4	84	4	84	Also add a remark on habitats for migratory species	the main text of the chapter focussed on nursery habitats so this is the focus of this sentence now
Mark Rounsevell	Ch.2	4	85	4	85	Do you need to say why wild insect pollinators in ECA have declined?	This is mentioned in chapotr 4 and discussed at length in the pollination assessment. It is not discussed here due to lack of space
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	Ch.2	4	86	4	87	Excellent use of these data; very important to retain.	More use of the IUCN red list indicators has now been incorporated in the main chapter text
Thomas Brooks	Ch.2	4	86	4	87	Excellent use of these data; very important to retain.	More use of the IUCN red list indicators has now been incorporated in the main chapter text
Graciela Rusch	Ch.2	4	88	4	94	The information in this paragraph is a bit confusing. It refers to too many different NCP related to water. It is difficult to follow. Is the water extraction in Central Asia also 'surface water'? What does it mean that surface water abstraction has decreased in Western and Central Europe. Is it because of regulations or because there is less water to extract? Also avoid using different terms: E.g. Is the regulation of water quality the same as the capacity of pollutants removal? For many readers this may not be obvious.	Yes, We tried to set a clear difference in the information about Water quality and water quantity regulation. Information about water abstraction was rewritten with the use of other indicators. Yes the regulation of water quality is the capacity of removing pollutant from water bodies, and this is the explanation of this NCP delivery.
Nadine Goris	Ch.2	4	88	4	66	does the supply or the regulation follow a decreasing trend? (I would think it is the supply)	If that question is related to water quality reg NCP, then YES this NCP supply is decreasing over the whole region mostly due to loss of wetland and river bed and floodplain naturalness

Graciela Rusch	Ch.2	4	95	4	100	It would be relevant to include a review of the trends in soil condition related to the addition of mineral fertilizers and agro-chemicals. At least to indicate that there is little documentation of trends. Also, it would be relevant to include a review of the state of the biological capacity of soils (likely little known).G23	We agree on your comments and tried to improve the text and added references to more published evidence (in additional refs) section 2.2.1.7.. However, there are no widely available indicators of the biological capacity of soils, this is why we used soil carbon as a proxy.
Graciela Rusch	Ch.2	4	106	4	108	This paragraph is a bit unclear. That air quality is decreasing may not have to do with a decline in the capacity to remove/control pollutants. It is also unclear what 'regulation of air quality in forests' means, and also what decreases in 'air quality regulation involving rivers, lakes and wetlands'. It would help to include first a brief statement of what 'air quality regulation' means in this context. Many readers will likely not understand what this is about.	this has been edited and simplified and hopefully is now clearer
Graciela Rusch	Ch.2	4	113	4	113	Sometimes NCP are described in terms of 'use' and in others as the capacity of the system to generate these contributions. This may be a bit confusing for those unfamiliar with ES framework. It would be more straight forward here to refer to 'generation' or 'production' of material NCPs. I Would it be possible to review the trends in the level of human inputs (as distinguished from the contribution of nature to food production)? (in the next paragraph 'food provision' is used, for instance.	this sentence has been edited to refer to use and capacity so hopefully this is clear
Graciela Rusch	Ch.2	4	114	4	114	What about other biomass-based energy?	biofuels are now mentioned
Graciela Rusch	Ch.2	4	116	4	116	Are these medicinal resources occurring in Europe and CA? Any regional differences in these trends? Where are these resources provided?	regional differences are discussed in the main text in section 2.2.2.4
Germany	Ch.2	5	118	5	122	This needs to be explained further- what role did these very different events and processes (such as CAP) play for food production?	lack of space in key messages prevents a detailed discussion of policies here. The main message is that policies can have important impacts. The policies are all discussed in the main text especially section 2.2.1 and 2.2.2
Graciela Rusch	Ch.2	5	118	5	122	What would be relevant to point out here is not "food production" per se, but what these societal changes have brought about, in terms of the capacity of cropland ecosystems to contribute to food production. What have these changes brought about in terms of the structure of landscape mosaics, and the kind of on-farm food production practices.	the third key message now addresses this issue by discussing trade offs and agricultural area per capita
UK: David Forrow	Ch.2	5	120	5	120	Should read fall not fell	fall now not used
Graciela Rusch	Ch.2	5	122	5	122	Equating production to levels of extraction is problematic. Could these trends be explained in terms of the capacity of the system to generate benefits? Aren't there any statistics of fish/sea food stocks? And the levels of sustainable harvest? This would be more meaningful to report as the NCP than 'use' actual harvest. Ideally, these sections would be reported as the generation capacity and the level of use, and explain the mismatches to highlight unsustainable use when appropriate.	This message now considers fish production and stocks. Capacity is now discussed in the final key message when biocapacity is discussed.
Finnish Government	Ch.2	5	125	5	126	The roundwood and fuelwood production has clearly increased in several countries, including the Nordic countries.	differences between countries are discussed in the main text the key messages concentrates on data for ECA as a whole
Graciela Rusch	Ch.2	5	126	5	127	Also here, the 'level of production' of woodfuel and roundwood does not say anything about levels of sustainable exploitation. The value of this information is limited, and can be interpreted in many different ways. For instance, that with better infrastructure (roads) and modern machinery, the 'low production volumes' in Central Asia can be considerably enhanced (see e.g. prognosis for one Eastern EU country <a href="http://www.pwc.ro/en/press_room/assets/2016/wood-industry.pdf">http://www.pwc.ro/en/press_room/assets/2016/wood-industry.pdf</a> )	This issue is discussed at the end of key message 3
Graciela Rusch	Ch.2	5	133	5	134	The language used here may be understandable by the ES research. But very hard to grasp by anyone else. This formulation is a bit awkward also: 'the source of existence value of biodiversity'	this has been changed to make it more accessible to readers by discussing aspects of quality of life
Graciela Rusch	Ch.2	5	143	5	143	Indicate ILKP as an acronym earlier	acronym not used now
Finnish Government	Ch.2	5	144	5	147	In many countries, especially those with "everyman's rights", the learning and inspiration is linked mainly to the surrounding nature areas of people, including commercial forests, not only with often remote protected areas.	the key message now discusses inspiration linked to recreation in general not just in protected areas
Graciela Rusch	Ch.2	5	148	5	150	This paragraph is very difficult to grasp for a non-specialist. This synthesis should be readable by many.	this has been simplified and the word hybridization has been removed
Johannes Langemeyer	Ch.2	5	150	5	152	The statement 'linguistic diversity has been shaped by biodiversity' seems to be based on a limited geodeterministic understanding of cultural development and no evidence has been provided in the respective sub-section that would underscore this statement.	this is a debateable issue and some reviewers highlight literature on the link between biodiversity and linguistic diversity but this has been changed in the message and main text to make the comment less deterministic
Markus Fischer	Ch.2	5	151	5	152	"...linguistic diversity has been shaped by biodiversity...". Is this true? And do you have evidence? Isn't it rather that geographic and environmental features (e.g. bareness, distance, climate) largely shape both linguistic diversity and biodiversity?	this is a debateable issue and some reviewers highlight literature on the link between biodiversity and linguistic diversity but this has been changed in the message and main text to make the comment less deterministic
Graciela Rusch	Ch.2	5	151	5	152	How well established is this? Linguistic diversity 'shaped' by biodiversity? What are the implications of the fact that languages go extinct? Languages can go extinct but not because of environmental degradation? Is there any documentation that the loss of languages has a bearing about how nature is managed and used? (This I think is a relevant issue to bring in). The reference to this matter should be evaluated soundly. Are these percentages of lost languages for ECA?	this is a debateable issue and some reviewers highlight literature on the link between biodiversity and linguistic diversity but this has been changed in the message and main text to make the comment less deterministic, this issue is discussed more fully in the main text and the data is provided for ECA and the 4 subregions
Graciela Rusch	Ch.2	6	156	6	156	Also here, now this refers to 'renewable resources'. The terminology needs to be made consistent, and also adapted so that it can be understood by everyone interested in reading this.	The meaning of these terms are made clear in section 2.2.4
Finnish Government	Ch.2	6	156	6	171	This chapter mentions nothing about the sustainable use on natural resources in many European countries that is off-setting the use of e.g. fossil fuels. If not in this chapter, this substitutional effects and its positive impacts on climate and people should be discussed in pages 5-6.	sustainable practices are highlighted in the key messages in relation to wild fish, wood production and tourism and recreation
Graciela Rusch	Ch.2	6	158	6	158	It is necessary to provide at the start a brief introduction to the different elements along the ES concept (nature (the ecosystem and its functions), the contributions from ecosystems, the use/appreciation of these contributions, the benefits derived from the use/appreciation and the value attached to these benefits (how important they are in relation to each other and 'per se').	this is provided in chapter 1 and also in the introduction to the main chapter 2
Finnish Government	Ch.2	6	158	6	159	Also Northern Europe is a net exporter of NCP benefits.	due to space constraints imposed after the SOD this message focuses on ECA as a whole. Sub-regional differences are discussed in section 2.2.4 of the chapter
Johannes Langemeyer	Ch.2	6	159	6	161	The ecological footprint is an established tool to communicate human dependency on nature, yet its scientific soundness is highly disputed. Given the importance of this assessment and potential dispute it might cause policy-making I would avoid making reference to this indicator, which is not essential for the chapter.	The key message recognises that indicators are debated and so uses three indicators including biocapacity and HANPP which are recognised in the peer reviewed literature
Markus Fischer	Ch.2	6	159	6	159	Also mention Central asia	central asia mentioned
Graciela Rusch	Ch.2	6	159	6	159	If a framework that distinguishes 'generation'/'contribution' to 'use/appreciation' is used, then the ecological footprint could be use as an entry point to bring about the issue of sustainable and unsustainable levels of use. (the mismatch between 'supply and demand')	These issues are addressed by the message discussing HANPP and ECAs reliance on land for crop production outside the ECA region
Mark Rounsevell	Ch.2	6	172	6	173	"...are provided by...". Not clear what this means	the phrase 'provided by' has been removed
Graciela Rusch	Ch.2	6	172	6	172	Here also there is confusion of concepts. 'instrumental and relational values are provided by NCPs'. It is nature that both makes NCPs possible ('provide') and give rise to 'instrumental and relational values'. Here again, this use of terminology according to IPBES guideline (on values for the assessments) is OK for the assessment, but it will be hard to understand by everyone else outside the sphere. Can the language of the introductory statements be more accessible? AND also, beware the (confusing) use of terms and concepts.	the terms instrumental and relational have been removed and new valuation message has been produced

UK: David Forrow	Ch.2		6	172	6	172	Significant instrumental and relational values? - not sure what this means	the terms instrumental and relational have been removed and new valuation message has been produced
Markus Fischer	Ch.2		6	173		174	"...relational and instrumental values...": Needs to be defined in Chapter 1	they are now defined in chapter 1 and in the introduction to chapter 2
Germany	Ch.2		6	176	6	177	These three given reasons are not self-explanatory. Why is there for instance only a reference to the nutritional value of wild foods?	the valuation key message has been completely revised and the discussion of nutrition is much broader
Health Review: Malcolm Ward	Ch.2		6	178	6	179	The health benefits of exposure to natural environments from Japanese literature now being acknowledged and acted on in many different cultures: literature <a href="http://www.natureandforesttherapy.org/the-science.html">http://www.natureandforesttherapy.org/the-science.html</a>	the health key message has been completely rewritten and considers a range of ways health is influenced by nature
Graciela Rusch	Ch.2		6	180	6	188	Could this paragraph be linked to those above about the contributions of nature to food and water?	the link between health and food is now discussed and safe water is discussed in the previous message
Graciela Rusch	Ch.2		6	181	6	182	This seems to contradict the fact that Western Europe relies more on imports, and that the footprint is much higher than the carrying capacity?	the discussion of food security in the key messages has been changed to avoid this contradiction
Johannes Langemeyer	Ch.2		6	183	6	184	"During 2007-2009, the percentage of households with children unable to afford a 183 nutritious meal doubled in some countries of Western and Central Europe (e.g. Estonia, Greece, 184 Iceland and Italy)" This sounds sensationalist without knowing the outcome of the changes as total percentages of the population.	this has been removed from key messages and food security is discussed in more detail in section 2.3.1.1
Graciela Rusch	Ch.2		6	191	6	194	This is a bit difficult to follow. Which % of these protectin categories is found in ECA?	this has been edited to make it clearer
Johannes Langemeyer	Ch.2		7	205	7	207	"Although there is a general increase in the number of people experiencing recreational activities in nature, the participation in these activities is lower in Central Asia and Eastern Europe than the other sub-regions because of the lower number of protected areas and less infrastructure for access." Consider that these are not the only possible reasons, cultural reasons might be as important (and also underlying lower numbers of PA).	this discussion is no longer in the key messages
Dan Faith	Ch.2		7	210		211	this is good "intergenerational injustices. Future trade-offs between NCPs could potentially cause problems for equity, as NCPs could be appropriated to different degrees by different social groups	this discussion is no longer in the key messages
Germany	Ch.2		7	215	7	217	While this is definitely an important statement, it remains at a very general level here. Where are examples how this can work in practice?	this key message has been re-written and more empirical detail is provided
Hanna Skryhan	Ch.2		7	218	7	218	Add the statement about the knowledge gaps and necessary reserches	due to space constraints imposed after the SOD knowledge gaps are not discussed in key messages but are discussed in detail in section 2.5
UK: David Forrow	Ch.2		8	224	8	230	English needs to be improved in this paragraph	this section has been completely re-written
Johannes Langemeyer	Ch.2		8	225	8	226	"we recognize that NCPs are more than themselves alone" Unclear.	this phrase has been removed
ECA values liaison group	Ch.2		9	235			Consider mentioning 'options for maintaining NCP' in this introduction. It is not covered in Section 2.2, but in section 2.3.4: Equity and Justice, because of inter-generational equity / justic.	This NCP is now added as a NCP in section 2.2., so it is also included in the introduction as requested.
Graciela Rusch	Ch.2		9	238	9	246	It would be important to 'translate' the jargon to an accessible language; through out th whole tocuments. E.g terms such as 'holistic, differences between ES and NCP (seem rather subtle in this context, and can be confusing for many.	We reduce the use of jargon, by using only integrated valuation and by explaining when we use ecosystem services and NCP.
Johannes Langemeyer	Ch.2		9	246	9	250	Why do you then use NCP in the executive summary (instead of ES)?	The decision is that we use Nature's contributions to people (NCP) when synthesizing, summarizing and assessing information. The term ecosystem services is used when referring to literature which uses the ecosystem services term. So, we use NCP as much as possible in the executive summary
Health Review: Sjerp de Vries	Ch.2		9	246	9	247	Since NCP is such a central concept, I feel that it deserves to be introduced clearly, including its differences with the concept of ecosystem services.	We explain that Nature's contributions to people (NCP) is used when synthesizing, summarizing and assessing information. The term ecosystem services can be used when referring to literature which uses the ecosystem services term. For the differences between the two, the explanation is given in chapter 1.
Amor Torre-Marín	Ch.2		9	249	9	249	Is "established" a confidence term? If so to be used between brackets. If noy alternative wording should be used.	Thanks for spotting this out!!!
Graciela Rusch	Ch.2		9	249	9	250	It would be good to explain the use of these definitions in the executive summary, and then use them consistently in the 'main messages'. I suggest then, to use these terms consistently and avoid others such as 'production'.	The executive summary aims to provide the main messages and the key findings. As this is more methodological, we decide to explain this in section 2.1.2 when we present the list of indicators used in the assessment. We also add these concepts in the glossary of the ECA assessment
Nadine Goris	Ch.2		9	250	9	252	Figure 2.1: partly too small fonts and out of focus	We increase the size of the font. We want to keep the figure because it provides in a snapshot the scopus of this chapter, so we do believe this is not out of focus.
Johannes Langemeyer	Ch.2		9	251	9	256	It is not coherent to introduce the NCP framework (Fig. 2.1) and then speak about ES in the text.	We explain that Nature's contributions to people (NCP) is used when synthesizing, summarizing and assessing information. The term ecosystem services can be used when referring to literature which uses the ecosystem services term. We used this consistently across the chapter
Graciela Rusch	Ch.2		9	251	9	256	Would it be possible to move this graph and a bit of explanation in the previous section (executive summary)?	Executive summary does not have figures. So it is not possible
Health Review: Daniela Haluza	Ch.2		9	252	9	256	I would suggest some modification on Figure 2. TI would remove the numbers 1-15 or think about a more graspable presentation, write either non material or non-material and chose other color coding.	We used the same color coding than Pascual et al. (2017) for coherence with IPBES, but now a graphic designer is helping with figures. We delete the numbers of NCP according to reviewer's suggestion.
Allan Watt	Ch.2		9	264	9	265	Note that Chapter 3 only mentions NCPs in the chapter title!	Now we are more coordinated with the other chapters. Nevertheless, we agree that Nature's contributions to people (NCP) is used when synthesizing, summarizing and assessing information. The term ecosystem services can be used when referring to literature which uses the ecosystem services term.
Allan Watt	Ch.2		10	272	11	291	Perhaps a minor concern (because I understand what you mean) but the use of the word "component(s)" is somewhat misleading. You are referring to ecosystem service, capacity, use and value, which are not really components. You could avoid the word completely by starting "The emergence of an ecosystem service depends, firstly, upon the ecosystem's capacity to supply that service, secondly the use, flow or demand for that service and, thirdly, the value of that service..." Incidentally, the paper in the reference list by Schroter et al (albeit published in a different year) doesn't use the word component.	We deleted the word component.
Finnish Government	Ch.2		10	274	10	285	The larger context of the role of NCPs in human wellbeing should be at least mentioned. The commercial use of natural resources allows for job creation and welfare benefits to the poor people financially covered by income and capital taxes gained in the value-chain of natural resource processing. The effect depends on the institutional setting of the country - the more egalitarian the system, the wider the welfare benefits trickle-down.	This was not the goal of this section. Aspects of economic value are dealt with in the respective sections.

Health Review: Sjerp de Vries	Ch.2	10	274	10	285	Here no clear distinction between NCP and ecosystem service seems to be made. Moreover, it is not clear to me to which of the three aspects (provision, use, benefit) NCP refers. I find this distinction quite important and useful, but not much use of it seems to be made in section 2.3.2	The text states that capacity relates to potential to provide an NCP, use refers to the actual appropriation, and value are measures of importance. In this latter aspect our chapter bridges two boxes of the IPBES CF.
Johannes Langemeyer	Ch.2	10	276	10	285	Is the conceptual framework introduced coherent with other chapters of the assessment? The conceptualization, merging 1. ES capacity/ES demand/ecosystem functions, 2. flow/demand, and 3. ES value, is not the most intuitive and probably not the most established in the lit. I believe it would be important to mention that there are competing/differing conceptualizations of ES in the lit. In addition, the proposed framework is not applied in all sub-sections (this seems to be a major reason why table 2.1 is so empty) and when reading the rest of the chapter it is not clear why it needed to be introduced.	We acknowledge differing conceptualisations and refer to example literature. We added that our aim was not a complete assessment for all aspects across all NCP.
ECA values liaison group	Ch.2	10	277	10	285	This is an excellent section on the difference between capacity, use and value. However, although Section 2.2 mostly features the trend in NCPs, there is frequent reference to the economic value of NCPs throughout. Please explain here why there is occasional reference to economic and monetary value (if still applicable) in Section 2.2.	We made more clear that the aim was not a systematic assessment of all components across all NCP, rather, the Table pinpoints to indicators used. We added more on economic values, as this part was developed after the SOD.
Dan Faith	Ch.2	10	285		289	Table 2.1: Indication of which ecosystem service component is assessed in this chapter per each Nature's Contribution to People (NCP) - but NCP18 is not an ecosystem service	We consider NCP 18, as given by the general classification of IPBES.
Johannes Langemeyer	Ch.2	10	286			Table 2.1 seems to be a selective choice of examples of indicators not a comprehensive assessment. In ist current for, I do not see the added value of this table (to the contrary it might bias towards the future use of arbitrarily chose examples of indicators). The table (and the underlying framework) partly contradicts more holistic understandings of value underlying other parts of the chapter.	The table is a summary of all indicators used in the assessment. We made this more clear.
Graciela Rusch	Ch.2	10	286	10	288	This is fine, because, indicators will not always be available. But one of the most valuable aspects of the ES approach is that these indicators can be put together in a context that enables to see linkages between each other (e.g. that the reduction of the capacity of a system to generate NCP, is related to the levels of use (flow - demand), which in turn can help us gain insights on whether levels of use/appreciation can decrease as a consequence of the depletion or degradation of the natural capacity/qualities. Suggest to indicate when these linkages are not possible to be made due for instance to lack of data at compatible spatial scales.	We were not able to create a systematic overview for all indicators for all aspects.
Mark Snethlage	Ch.2	10	286			"The goal of ECA" -> "The goal of the ECA assessment"?	This was corrected.
Jean-Pierre Arnauduc	Ch.2	10	287	10	288	In France we have a recent assessment of hunting and game ecosystem service (Evaluation du service écosystémique chasse en 2015, BIPE, 2016). <a href="http://docs.chasseurdefrance.com/FNC_BIPE_Rapport_Final_2016.pdf">http://docs.chasseurdefrance.com/FNC_BIPE_Rapport_Final_2016.pdf</a>	This table is a summary of the systematic evaluation of indicators we found in the literature (mostly English literature).
Germany	Ch.2	10	289	11		end of table why are there gaps in the table? Are these yet to be filled?	The economic values will be added once the section is complete. The other gaps indicate that we did deliberately choose not to assess both capacity and use for all NCP systematically
Health Review: Malcolm Ward	Ch.2	10	289	11	291	Very little reference to health related values associated with many of the identified NCPs including QALYs (Quality Adjusted Life Years) and DALYs (Disability Adjusted Life Years) particularly relevant to NCPs 3, 4, 5, 8, 9, 12 & 14.	Health is a Quality of life aspect, this Tabel introduces NCP only.
Health Review: Epameinondas Evergetis	Ch.2	10	290	11	291	In Table 2.1, heading 12, on medicinal plant resources, the Ecosystem Service Use should be described as Health Treatment and the consequent Ecosystem Service Value should reflect the cost of Medical Care per capita against the population that uses natural medicinal resources. An other approach could incorporate as indicator of Ecosystem Services Value the Gross Sales of Natural Products/Natural Products inspired pharmaceuticals.	The table is a summary of all indicators used in the assessment. We made this more clear.
Graciela Rusch	Ch.2	10	291	10	291	In 1, ES value could be protection of particular habitats in national regulations or support to agri-environmental measures targeting habitat maintenance. But, it would be best to include here the ES that are mentioned in the executive summary.	The table is a summary of all indicators used in the assessment. We made this more clear. The goal was not to assess all aspects of all NCP.
Graciela Rusch	Ch.2	10	291	10	291	2. Under ES use. More specifically, - area of pollinator dependent crops. - level of crop yield as a function of pollinator diversity and occurrences.	The table is a summary of all indicators used in the assessment. We made this more clear. The goal was not to assess all aspects of all NCP.
Graciela Rusch	Ch.2	10	291	10	291	I would suggest to indicate in the table (and when appropriate) that ES 'use' has been in many contexts referred to 'benefits'. It makes more sense in the case of 'years of life gained' (rather than lost), for instance.	The use of several terms for aspects of ES/NCP has been clarified.
Graciela Rusch	Ch.2	10	291	10	291	Under 4 in the table. "Reduction of atmospheric CO2 concentrations".	The table is a summary of all indicators used in the assessment. We made this more clear. The goal was not to assess all aspects of all NCP.
Graciela Rusch	Ch.2	10	291	10	291	Under 5. "Amount of water availability (for human use)". Under ES use, 'amount of water extraction/consumption' These are referred in the ex. Summary so, good to use these as examples. ES Value, irrigation water costs, or other fees /taxes to water use.	The table is a summary of all indicators used in the assessment. We made this more clear. The goal was not to assess all aspects of all NCP.
Graciela Rusch	Ch.2	10	291	10	291	I would say that the amount of clean water available is also part of the supply. The use are not 'the quality measurements': The use is the actual extraction of clean (drinkable) water for use. This could also be referred to use of water bodies for bathing. The value could be treatment costs, high water quality, costs of abatement measures to reduce pollution. Also, the standards of water quality is an expression of value.	We acknowledge differing conceptualisations and refer to example literature. We added that our aim was not a complete assessment for all aspects across all NCP.
Graciela Rusch	Ch.2	10	291	10	291	Under 7. - Capacity: Capacity of the vegetation to protect against soil erosion (not the ecosystem). Soil organic matter. Functional diversity of soil biota. Under ES use, could be: available soil nutrients and water for crop growth. ES value: crop yield without fertilizers and irrigation.	The table is a summary of all indicators used in the assessment. We made this more clear. The goal was not to assess all aspects of all NCP.
Graciela Rusch	Ch.2	10	291	10	291	Under 9. Under production of grains, the ES capacity is mainly related to the soil capacity (see above). ES use, would be crop harvest. And value, market price of food stuffs. About domestic animals, it is tricky if (as in many places in Europe) the food is based imports to the farm. Meat production with imported fodder is not related closely to ES.	We corrected this: indicators for production are related to "actual use".
Graciela Rusch	Ch.2	10	291	10	291	Under 12. Under capacity. Area of habitats with medicinal plants. ES use: Harvest of medicinal plants	The table is a summary of all indicators used in the assessment. We made this more clear. The goal was not to assess all aspects of all NCP.
Graciela Rusch	Ch.2	10	291	10	291	Under 15: Sacred sites : ES use: Could be Nr of people attached to sacred sites.	The table is a summary of all indicators used in the assessment. We made this more clear. The goal was not to assess all aspects of all NCP.
Finnish Government	Ch.2	11	290	11	291	The table does not include the role of non-protected natural areas - commercial forests, fields, waters - as a source of physical and psychological experiences and supporting identities. Still many activities supporting identities and culture, especially fishing and hunting, take place especially in these areas. People enjoy nature most often in their near-by areas (Sievänen et al. 2004).	The table is a summary of all indicators used in the assessment. We made this more clear. The goal was not to assess all aspects of all NCP.
Mark Rounsevell	Ch.2	12	292		293	There's probably some scope to shorten this section by reducing the background/contextual information provided for each NCP category	In the current version, we reduce the background per NCP and focus on the capacity to provide each NCP and the demand by people. This is the main focus now.
Mark Rounsevell	Ch.2	12	296			ILK is now standard usage	Ok
Hanna Skryhan	Ch.2	13	305	13	305	is the picture really necessary?	Now it is deleted
Lisa P. Sousa	Ch.2	13	306	48	1352	There should be more examples to clarify the role of marine ecosystems in regulating NCPs, other than habitat creation and maintenance (e.g., climate regulation, water purification)	Now we add the NCP of regulation of ocean acidification
ECA values liaison group	Ch.2	13	307	13	321	Explain here, and in or around table 2.1 (289-290) that NCPs 'Ocean Acidification' and 'Regulation of organism detrimental to humans' are not covered in regulating NCP. Consider to account for this in Table 2.1 (line 289-290) as well.	In the current version, both are now addressed

PESC-4: Frederic Lemaitre	Ch.2	13	318	13	321	there can be even very local mismatches between ES provision and supply, in addition to the regional/country-scale ones. There is a study looking at the European cities of Stockholm, Berlin, Rotterdam, Barcelona and Salzburg, which shows the moderate contributions of urban ecosystems to Environmental Quality Standards due to spatial mismatch between demand and supply of e.g. PM-10, NO2 and O3 gas capture services. The study is referenced as follows: Baró, F., Haase, D., Gómez-Baggethun, E., Frantzeskaki, N. 2015. Mismatches between ecosystem services supply and demand in urban areas: A quantitative assessment in five European cities. Ecological Indicators 55: 146–158)	We are aware about these mismatches, but unfortunately we are not able to provide information of everything because we were requested to edit down the chapter by half. We prioritize the other inter-regional flows
Allan Watt	Ch.2	13	322			Originally (in the MA), habitat creation was classified as a supporting service and therefore, at least, it might be better not to start a discussion on regulating services with the example of habitat creation. However, I can see a logic for doing so (start with the habitat and then move to the "real" regulating services. If so, perhaps some acknowledgement for different views on how to classify habitat creation should be included. Nevertheless, the (continued) emphasis on nurseries seems strange. One could view habitat creation in terms of habitats for all species (the original intention, I think) or for species important to humans, as explicitly stated here, acknowledging the IPBES definition. However, taking the apparently narrower definition probably takes us back to all species, or at least those that people are aware of, simply because most species are important to people. I understand that, following this logic, this section could get far too long so I would suggest a) acknowledging the broader definition and b) choosing some other (additional) examples. For example, you might include habitats for hunted species, natural enemies of pests and/or pollinators. The last example would link well to the next section on pollinators. Indeed, that section does not acknowledge the fact that pollinators are dependent on particular habitat conditions.	Chapter 1 - overview of classification?
Mette Skern-Mauritzen	Ch.2	14	328	15	361	There has been an ongoing discussion in Norway for years on opening the Lofoten area for petroleum activity, which may be relevant for this section. The Lofoten area is a spawning and nursing ground for several commercially important species (including cod and herring), but expected rich in petroleum. The political parties are split relative to opening for petroleum, while the scientific advice is to keep it closed	this section has been completely re-written and focuses on different issues
Nadine Goris	Ch.2	14	340	14	342	Table 2.2 is out of focus	all graphic materials improved in the final version
Finnish Government	Ch.2	15	359	15	359	Exemplify "costal ecosystems"	this part has been rewritten in the final version
ECA values liaison group	Ch.2	15	360			Please remove 'and 88% by value of commercial landings' and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and potentially overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP.	all data on values from all sections have been moved to section 2.3.5
Finnish Government	Ch.2	15	362	15	369	Define reefs here, of the details given in terms of species in the kelp paragraph	this section has been rewritten in the final version
Nadine Goris	Ch.2	16	392	16	393	Table 2.3 is out of focus	all graphic materials improved in the final version
Nadine Goris	Ch.2	16	394	16	396	Figure 2.2 is out of focus	all graphic materials improved in the final version
Mark Snethlage	Ch.2	16	402			"In Corsica, large and continuous forest of <i>C. balearica</i> cover more than 2500 m2 and (Cheminée et al., 2013) estimate that depletion of such forests would potentially result in the loss of about 22,000 wrasse species ( <i>Symphodus</i> spp.) juveniles dependent on the habitat provided by this algae species." The number of 22,000 wrasse species in the genus <i>Symphodus</i> seems extraordinarily high: <a href="https://en.wikipedia.org/wiki/Symphodus">https://en.wikipedia.org/wiki/Symphodus</a>	this part has been rewritten in the final version so this figure doesn't appear anymore
ECA values liaison group	Ch.2	16	410	17	414	Please remove these sentences which refer to economic value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	all data on values from all sections have been moved to section 2.3.5
Finnish Government	Ch.2	16	535	16	535	Exemplify/specify "several ecosystem parts"	section to which this is referring not found
Finnish Government	Ch.2	16	539	16	539	Long term trends in seagrass across the Baltic basin is available in Boström et al. 2014 (ref. available in comment for page 17, line 418)	this reference was looked at
Finnish Government	Ch.2	16	544	16	544	Explain what is actually meant by "decline in the status of biodiversity". Any species losses/extinctions?	section to which this is referring not found
Finnish Government	Ch.2	17	412	17	414	Specify which geographic area is concerned	this sentence has been moved of this section
Finnish Government	Ch.2	17	418	17	418	Treat the European seagrass <i>Zostera marina</i> here in the same way as <i>Posidonia</i> in a similar paragraph. Boström, C., Baden, S., Bockelmann, A.-C., Dromph, K., Fredriksen, S., Gustafsson, C., Krause-Jensen, D., Möller, T., Nielsen, S.L., Olesen, B., Olsen, J., Pihl, L., Rinde, E., 2014. Distribution, structure and function of Nordic eelgrass ( <i>Zostera marina</i> ) ecosystems: implications for coastal management and conservation. <i>Aquat. Conserv. Mar. Freshw. Ecosyst.</i> 24, 410–434. doi:10.1002/aqc.2424	information on <i>Zostera marina</i> has been added
Finnish Government	Ch.2	17	421	17	421	Insert reference Boström et al. 2014	this reference has been added
Hanna Skryhan	Ch.2	17	434	17	434	add the conclusions on the previous text: what we know, what we don't know, what we need to know	text on each NCP has been restructured following a similar outline
Mark Snethlage	Ch.2	17	435			very much chapter 3 material	this section has been shortened
CMS	Ch.2	17	438	17	445	EU Birds Directive is not the only instrument applicable to migratory birds conservation in the region. In particular, the Convention on Migratory Species (CMS) and a few agreements negotiated under its framework (e.g. the Agreement on the Conservation of African-Asian Migratory Waterbirds (AEWA), the Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MOU)) concern birds migrating between Europe (and Central Asia) and Africa. While we cannot point out to peer-reviewed literature on the impact of these treaties on migratory species status, we believe that referring only to EU birds Directive would provide an unbalanced picture. A reference to the (possible) contribution of CMS and its instruments in the conservation of migratory birds could be made.	This information has been considered; but due to limited space available no additional information could be added
Finnish Government	Ch.2	17	602	17	602	Insert reference Boström et al. 2014	this reference has been added
Finnish Government	Ch.2	17	605	17	606	There are reports of eelgrass restoration only from Sweden and Denmark. See e.g. Eriander L., Infantes E., Olofsson M., Olsen J.L., Moksnes P.-O. 2016. Assessing methods for restoration of eelgrass ( <i>Zostera marina</i> L.) in a cold temperate region. <i>Journal of Experimental Marine Biology and Ecology.</i> 479, 76-88. Infantes E., Eriander L., Moksnes P.-O. 2016. Eelgrass ( <i>Zostera marina</i> ) restoration on the west coast of Sweden using seeds. <i>Marine Ecology Progress Series.</i> 546, 31-45.	these additional references have been reviewed
Finnish Government	Ch.2	17	607	17	607	Insert reference Boström et al. 2014. Reference contains long-term data on spatial cover.	this references has been looked at
UK: David Forrow	Ch.2	18	448			Fig 2.3 Axes need labelling	all graphic materials have been improved in the final version
Nadine Goris	Ch.2	18	457	18	458	Figure 2.4: unreadable due to too small font and out of focus	all graphic materials have been improved in the final version
UK: David Forrow	Ch.2	18	458			Fig 2.4 Axes need labelling	all graphic materials have been improved in the final version
UK: David Forrow	Ch.2	18	460			state not sate	corrected
Germany	Ch.2	18	462	22	557	Please refer to the IPBES assessment on pollination, pollinators and food security	Done
ECA values liaison group	Ch.2	18	462			In the IPBES NCP classification, this NCP includes 'and dispersal of seeds and other propagules'. Please explain that this has not been reviewed, and the reason for not including seed dispersal. Consider to account for this in Table 2.1 (line 289-290) as well.	We could not address seed dispersion because lack of expertise and time constrains. However, as the IPBES NCP classification recognizes, it exists the possibility to split one type of NCP into its components, e.g. for this particular NCP, one can focus on pollination or on seed dispersion or on both. We decide to focus only on pollination.
Finnish Government	Ch.2	18	462	19	472	Shouldn't there be a reference to the IPBES report on pollination? That should be state-of-the-art in the issue.	Done

Germany	Ch.2	18	465	18	465	"western honey bee ..."	Because the re-phrasing done from the SOD to the final version, this wording is not used in the final document
Germany	Ch.2	19	470	19	472	emphasize that the diversity (and abundance) of wild pollinators is important	We indeed tried to emphasize this
ECA values liaison group	Ch.2	19	478	19	483	Please remove overlapping statements about values and good quality of life. Pollinators etc. contribute to other NCPs and to aspects of good quality of life, and these must be mentioned separately.	Done
Germany	Ch.2	19	486	19	487	the loss of bees, butterflies ... is also true in Netherlands and UK? And is there a loss of biotic homogenisation?	Due to the required reduction in wording, this sentence is not anymore in the document
Mark Sneath	Ch.2	19	486			Holland = The Netherlands	Due to the required reduction in wording, this sentence is not anymore in the document
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	Ch.2	19	490	19	495	Excellent use of these data; very important to retain.	Many thanks
Thomas Brooks	Ch.2	19	490	19	495	Excellent use of these data; very important to retain.	Many thanks
PESC-4: Kristina Raab	Ch.2	20	512	20	512	New world context vs. Mother earth context => what is meant with New world? Western world?	Due to the required reduction in wording, this sentence is not anymore in the document
Ilija Gasan Osojnik Črničec	Ch.2	20	513		524	In addition, many agricultural food plants cannot be pollinated efficiently by honey bees. Furthermore, open traffic with commercially bred bumble bees (e.g. <i>B. terrestris</i> ) may cause extinction of locally adapted subspecies, as well as higher dissemination of bacterial and viral diseases amongst various species of insects, in particularly pollinators.	the reliance on insects due to declines in bees is noted. This issue is discussed in the in the pollination assessment. It is not discussed here due to lack of space
Graciela Rusch	Ch.2	21	533	21	533	This map of pollination services is relevant as well at EU level , it is basically based on Lonsdorf et al, and it provides both an assessment of capacity and of demand (and deficit). Zulian, G., Maes, J., Paracchini, M.L., 2013. Linking land cover data and crop yields for mapping and assessment of pollination services in Europe. Land 2, 472-492.	Many thanks for the information, but the main author of this section decided to keep the original one as both present redundant information
ECA values liaison group	Ch.2	21	535	21	549	Please remove this whole section which refers to economic and monetary value, and transfer it to Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not consistently mentioned.	Done
UK: David Forrow	Ch.2	21	544			Reference not in usual format	The information of monetary values has moved to other section that focuses on this aspect. We avoid also this way of presenting the information
Ilija Gasan Osojnik Črničec	Ch.2	21	550		551	Revise sentence (esp. The beginning of line 551). Consider of "direct calorific value " is necessary in this context, or if "calorific value" would suffice, or it can be even simply written "high energy content".	We review this paragraph according to all the changes suggested in this section by reviewers. Now it reads differently.
ECA values liaison group	Ch.2	21	550	21	553	Please remove and suggest it as an addition to the authors of Section 2.3.2 on Health. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and potentially overlaps with information covered in Section 2.3.2. Moreover, other value types (economic value, diversity & options, security etc.) are not or no longer being referred to in this section either, for the sake of consistency.	We decide to keep it here because in current narrative of health section it does not fit and because the health section was the one precisely that required the highest edit down from the SOD. Economic values were moved to the enw section on values.
Finnish Government	Ch.2	22	558	24		The word "regulation" is associated to human-made control, which is not the case when considering the role of forests in the air quality. Better option could be e.g. "impact".	The text has changed so "regulation" is not used in this context.
UK: David Forrow	Ch.2	22	562			Reference not in usual format	Corrected
Finnish Government	Ch.2	22	563	22	563	PM2.5: define	Done
Finnish Government	Ch.2	22	564	22	564	after 17000: ", respectively..."	Text was deleted in the revision
Finnish Government	Ch.2	22	564	22	564	why "while"?	"while" as this was in contrast to the previous clause
Health Review: Julie Garnier	Ch.2	22	566	22	566	Air pollution also has chronic effects on health such as lung cancer, cardiovascular diseases, decreased lung function and respiratory infections in children, low birth weight -See in: Queenan, K, Garnier, J, Nielsen, L, Buttigieg, S, de meneghi, D, Holmberg, M, Zinsstag, J, Ruegg, S, Hassler, B and Kock, R (2017). Roadmap to One Health Agenda. CAB Reviews. <a href="http://www.cabi.org/cabreviews/review/20173134856">http://www.cabi.org/cabreviews/review/20173134856</a>	Thank you. This reference has been included
Finnish Government	Ch.2	22	568	22	569	difficult sentence and wording	Wording changed
Graciela Rusch	Ch.2	22	570	22	570	NH4 is the formula for Ammonium, not for methane.	methane is now just given in full
Finnish Government	Ch.2	22	570	22	570	pollutants should be precursors to pollutants	Can be sources or precursors
Finnish Government	Ch.2	22	570	22	570	in the end of the sentence: ... that are involved in the photochemical formation of O3.	added phrase
Finnish Government	Ch.2	22	571	22	582	The presented numbers should be put in perspective so that the reader could understand their significance. Pure numbers do not tell much for a non-expert. Are these processes significant for the air quality?	Done - The total net benefit of vegetation in cities can be small relative to total emissions, for example, urban forests in Barcelona in 2008 removed 305.6t of air pollutants and 19,036 t CO2eq, representing 2.66 % of PM10, 0.43 % of NO2, and 0.47 % of CO2eq of emissions, but locally the amount removed can be very important (Baró et al., 2014).
Johannes Langemeyer	Ch.2	22	574			Ref: 9. Baró F, Chaparro L, Gómez-Baggethun E, Langemeyer J, Nowak DJ, Terradas J (2014): Assessing ecosystem services provided by urban forests in relation to air quality and climate change mitigation policies in Barcelona, Spain. AMBIO, 43:466–479. DOI 10.1007/s13280-014-0507-x <a href="http://link.springer.com/article/10.1007/s13280-014-0507-x">http://link.springer.com/article/10.1007/s13280-014-0507-x</a>	Added
Finnish Government	Ch.2	22	575	22	575	highest of all possible tree species?	Clarified as "Highest of European urban tree species"
Finnish Government	Ch.2	22	577	22	577	in which time period these deposition rates were observed? Was it seasonal?	This has been clarified
ECA values liaison group	Ch.2	22	580	22	582	Please remove this sentence which refers to monetary value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	Removed as requested
Finnish Government	Ch.2	22	583	22	593	Why to start with "however"? In the previous chapter, different compounds and tree species were compared. This chapter compares ecosystems.	Thank you for the question. I think that "however" is appropriate here to show that other factors need to be taken into consideration when looking at these figures
Finnish Government	Ch.2	22	586	22	586	"vertical" and "mean" not needed	vertical was used as this was how it was reported in the paper. Mean is used to show that this is a mean not a maximum value.
Finnish Government	Ch.2	22	591	22	592	Remove the end of the sentence "... which might be partly due to the short...". Although the original article has speculations on reasons, such argumentation makes all modelling results sound unreliable.	Removed as requested



Johannes Langemeyer	Ch.2	22	593	24	612	Emission removal is not only small in Northern areas, the same counts for Barcelona, Spain (Baró, et al., 2014). We concluded that, apart from PM10, nature-based solutions are inappropriate to cope with high levels of emissions especially in cities. To the contrary only a reduction of emission sources can improve air quality in cities. A statement on this limited capacity of ES is missing in the text.	A statement about the limited capacity of trees in urban areas has been included.
Finnish Government	Ch.2	22	594	23	597	Please explain what is the reason for this difference	Sentence add "This is due to the higher level of pollutant capture by these ecosystems."
Finnish Government	Ch.2	22	595	22	595	"...dry deposition velocity which depends on ...". Here, define shortly the dry deposition velocity.	It is the rate of deposition of particles and gases (in this case) on vegetation. I think here the important thing is what is used for i.e. measure of vegetation removal capacity
Finnish Government	Ch.2	23	597	23	600	Why?	I think that this is explained by the fact already stated (but made clearer in response to another comment) that forests capture more than other vegetation types, yet in " in Flanders the heaths capture more than forests, as they are closer to the emission sources."
Finnish Government	Ch.2	23	600	23	602	There exists no forest which could be able to absorb all the toxic gases!	Agree.
Finnish Government	Ch.2	23	603	23	604	The NOx deposition rates in the figure appear far too high	This may be a function of the modelling approach used, but this was the best information that could be found.
Finnish Government	Ch.2	23	611	23	611	abandonment of what?	changed to land abandonment
Finnish Government	Ch.2	24	617	24	617	CH4 and N2O are not "polluting gases". CH4 is a precursor for O3, and N2O reacts only in stratosphere	This section has been re-written and refers to gases which affect air quality and identifies CH4 as a precursor of O3
Nadine Goris	Ch.2	24	629	24	629	should be "LULUCF (land use, land use change and forestry)"	done
Finnish Government	Ch.2	24	629	24	640	This chapter is loose. First it refers to UNFCCC reporting (reference should be given!), stating that there is net GHG uptake in Europe. Next it refers to a single paper which shows opposite results, with a neutral balance when forests, grasslands, croplands and wetlands are accounted for. This difference should be explained and discussed. Last, Turkey is explained as a single country, even though it is not stated how significant Turkey is as compared to the rest of Europe.	Thank you for this comment. The section has been reorganised to provide a better structure and a more consistent content. The reference to Turkey has been deleted.
Nadine Goris	Ch.2	24	631	24	631	there is a comma missing after "Eastern Europe"	OK thanks
Finnish Government	Ch.2	25	641	25	645	This text refers to Fig. 2.12, in which Finland is the only country with a change from a sink to a source, so presumably the text refers to Finland. The information in 2.12 must be wrong. According to Statistics Finland ( <a href="http://www.stat.fi/til/khki/2015/khki_2015_2016-12-07_tie_001_en.html">http://www.stat.fi/til/khki/2015/khki_2015_2016-12-07_tie_001_en.html</a> ) the GHG emissions from land use sector have been decreasing. Also, there has not been significant drainage or loss of wetlands in 1992-2014 in Finland.	The figure showing information by country has been deleted, according to TSU recommendation to prioritize figures at the sub-region level. The information regarding Finland was extracted from UNFCCC website at <a href="http://unfccc.int/documentation/documents/advanced_search/items/6911.php?prif=600008730">http://unfccc.int/documentation/documents/advanced_search/items/6911.php?prif=600008730</a>
Finnish Government	Ch.2	25	646	25	650	Why are the net removals of Kazakhstan and Uzbekistan treated in detail here? Perhaps some justification would be needed?	We deleted this sentence and referred to a study for the whole Central Asia
Johannes Langemeyer	Ch.2	25	657	24	662	Contradicting sentences.	These sentences have been deleted in order to condense the text
Finnish Government	Ch.2	25	657	25	665	Again, discussion related to Finland is fully misleading, since the Fig 2.12 show wrong information. Furthermore, wetland emissions are not reported under land use and land use change sector.	We deleted this graph both to condense the chapter and prioritize region and sub-region information rather than country scale information
Johannes Langemeyer	Ch.2	25	660	25	665	This is very uncertain and should be stated as such. Consider, some countries in Europe (e.g. Sweden, Estonia) show a net increase in peatlands. Climate change might enhance methane emissions but also enhance peatland growth (as recently observed in parts of the antarctic).	Wetland data were found in UNFCCC at <a href="http://unfccc.int/documentation/documents/advanced_search/items/6911.php?prif=600008730">http://unfccc.int/documentation/documents/advanced_search/items/6911.php?prif=600008730</a> . Text has been altered to "but given the decrease in wetlands area in many parts of Europe " and also the wording for the future does indicate some uncertainty.
Finnish Government	Ch.2	25	660	25	660	Referring to a figure which shows carbon storage, when discussing about GHG fluxes, is misleading. The size of the storage and the flux rate do not typically correlate. Thus a large C store in peat does not have to mean high emission.	We agree and tried to clarify the text
Graciela Rusch	Ch.2	25	663	25	663	In boreal forests, underground carbon storage is larger than aboveground storage. And more carbon is stored in the soil than in the vegetation.	A statement has been added on this.
UK: David Forrow	Ch.2	26	666			label graph axis	This will be done in the final figure production
Finnish Government	Ch.2	26	666	26	670	The information in this figure, related to Finland, is wrong. See a comment from page 25, line 641 to page 25, line 645 above. The stats for other countries were not checked.	We deleted this graph both to condense the chapter and prioritize region and sub-region information / country scale information
UK: David Forrow	Ch.2	26	667			label graph axis	done
UK: David Forrow	Ch.2	26	668			label graph axis	done
Graciela Rusch	Ch.2	26	671	26	671	The statement about cropland is in agreement about the general understanding that agricultural practices tend to accelerate organic matter mineralization in the soil, leading to loss of carbon stocks. But this seems to be in disagreement with Figure 2.11. It would be good to explain the reason for the high levels of CO2 sequestration in cropland in the graphs. (or is this due to abandonment? it would be good to explain this together with the graphs.	The main trend for cropland soils is indeed a loss of carbon (with local heterogeneity). This is consistent with figure 2.11 which shows emissions of CO2 from cropland (loss of carbon from soils). However, the surface area of cropland has been decreasing in ECA (land abandonment, afforestation).
Graciela Rusch	Ch.2	27	694	27	694	Separate with a subtitle 'microclimate regulation' from carbon sequestration and storage. These are different ES with particular characteristics.	A heading has not been added but it has been made clear that this NCP section focuses on carbon sequestration and storage and microclimate regulation
Nadine Goris	Ch.2	28	703	28	703	Figure 2.15: unreadable due to too small font and out of focus	A better quality figure will be provided
UK: David Forrow	Ch.2	28	703			What are the two separate maps? No labelling	Labelled now
Hanna Skryhan	Ch.2	28	718	30	797	the lack of the information about Asia, it seems necessary to add the data on CA	Data that could be obtained through national and UN based reports has been considered, as well as AQUASTAT / FAO data. Data for water availability could be found for almost the entire ECA region. The challenge of data shortage for CA has highlighted extensively in section 2.5.
Finnish Government	Ch.2	28	718	30	797	Add information on morphological changes, because hydrological (quantity, flow and timing) and morphological changes often have common impact.	Information on morphological changes lies beyond the scope of Chapter 2, as this chapter deals with trends in NCPs and GQOL. However, morphology as an underpinning characteristic has been made.

PESC-4: Kristina Raab	Ch.2	28	719	30	797	section 2.2.1.5: lack of information how NCPs are linked with freshwater	This section explicitly deals with trends in the freshwater NCP. Relations between this NCP and other NCPs are partly covered in the water security section (2.3.1), as well as Section 2.4. However, please note that relations with other NCPs have not been covered in any other NCP section, as this was beyond the scope of our assessment.
Graciela Rusch	Ch.2	28	725	28	725	More correct to use 'water flow regulation' than 'water regulation' or otherwise, indicate 'regulation of what'. This seems to refer to regulation of water availability of human use? Flow regulation is usually related to buffering of peaks, and flood control.	Thank you for this comment. Suggestion to refer to water flow regulation has been incorporated, and the consequences of terminology have been considered.
Graciela Rusch	Ch.2	28	755	28	755	I do not understand what is meant by 'water regulation linked to human use has increased over the past decades...'	This particular sentence has been deleted, and the paragraph has been updated and improved
PESC-4: Bakhtiyor Karimov	Ch.2	29	733	29	736	figure 2.16: can Europe and Central Asia be differentiated?	This has now been done, thanks for the suggestion.
Johannes Langemeyer	Ch.2	30	765	30	767	Unclear relation between sentences.	This has been improved
Johannes Langemeyer	Ch.2	30	765	30	767	Unclear relation between sentences.	This has been improved
Graciela Rusch	Ch.2	30	765	30	765	Is water provision the same as water regulation? The use of 'water regulation' is unclear.	This distinction has been further clarified, and the section has been restructured to further clarify it.
Germany	Ch.2	30	769	30	769	This sentence is not clear. Please revise. Also, pls explain the role of Western European countries for water availability in Central Europe more clearly. As it stands now, it seems rather judgemental.	This sentence has been revised. Any wording that could be observed as judgement has been removed
Graciela Rusch	Ch.2	30	769	30	769	much 'higher' or 'lower' than in Central Europe?	Thank you for noting this. Another reviewer also pointed this out. It should be 'higher' and this has been corrected.
Mark Snethlage	Ch.2	30	769			Incomplete sentence: Average water extraction is much [...] than in Central Europe, which is mainly due to high water extraction by France, Germany and Spain (Eurostat, 2016).	Thank you for noting this. Another reviewer also pointed this out. It should be 'higher' and this has been corrected.
Mark Snethlage	Ch.2	30	774			Dunabe = Danube	Done, thanks for noting this mistake
Mark Snethlage	Ch.2	30	791			Incomplete sentence: Water extraction in the Kyrgyz Republic has decreased (SAEPF et al., 2012), although recent trends are more ????? (National Statistical Committee of the Kyrgyz Republic, 2016).	This should be mixed, thanks for noting the mistake.
ECA values liaison group	Ch.2	30	798			Section 2.2.1.6 perhaps requires some renaming. This NCP category should have the term 'water quality' in it, so it should be updated to Regulation of freshwater and coastal water quality. Please repeat this throughout section 2.2.1.6 and consider to account for this in Table 2.1 (line 289-290) as well.	Yes, the section is now named as "2.2.1.7 Regulation of freshwater and coastal quality" (section number have changed). Changes in Table 2.1 will be made to be consistent with this NCP name.
Hanna Skryhan	Ch.2	30	798	36	1025	the lack of the information about Asia, it seems necessary to add the data on CA	References about this NCP in CA is still very poor, so that this gap of knowledge is now indicated in the NCP section.
Graciela Rusch	Ch.2	30	799	30	799	I suggest to include these explanations about what the services are, are included in the first-page summary. Together with a clear distinction of the assessment criteria/indicators (biophysical structures and functions), the use and the values attached, would make the summary messages easier to understand and the messages easier to get through.	This is addressed in table 2.1
Finnish Government	Ch.2	30	799	35	1031	More information about the impact of priority substances to freshwaters might improve the content of chapter	Priority substances that by retained by this service have been listed in the introduction of this NCP section
Graciela Rusch	Ch.2	30	803	30	803	Replace 'ecological' by 'biological'?	This section was completely revised so that this sentence does not exist any more. Thanks anyway
Andrew Wade	Ch.2	30	803	31	808	This paragraph notes 'processes in rivers and wetlands' and 'emission of pollutants into surface and groundwater' but there is much biogeochemical processing and retention in the catchment draining to the rivers and groundwater. Perhaps edit text to describe river catchments rather than rivers alone?	Yes, the biophysical system that support this NCP will be extended to the river catchment with surface and groundwater in the next section version
Graciela Rusch	Ch.2	31	807	31	807	Consider using 'biophysical' system in this case.	This section was completely revised and the terms "biophysical system" will be used further on
Graciela Rusch	Ch.2	31	811	31	811	It is unclear here what 'annually renewable NCP' means here. What do you wish to point out, and in relation to what is not 'annually renewable'?	This text annually renewable is not found in the SOD version, sorry
ECA values liaison group	Ch.2	31	813	31	815	Please remove this sentence which refers to monetary value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	Monetary values have been removed of this section
Graciela Rusch	Ch.2	31	833	31	834	These studies may be relevant to refer to: Barton, D.N., Andersen, T., Bergland, O., Engebretsen, A., Moe, S.J., Orderud, G.I., Tominga, K., Romstad, E., Vogt, R.D., 2016. Eutropia – integrated valuation of lake eutrophication abatement decisions using a Bayesian belief network In: Niel, Z.P. (Ed.), Handbook of Applied Systems Science. Routledge, New York and London. and Barton, D.N., Saloranta, T., Moe, S.J., Eggstad, H.O., Kuikka, S., 2008. Bayesian belief networks as a meta-modelling tool in integrated river basin management - Pros and cons in evaluating nutrient abatement decisions under uncertainty in a Norwegian river basin. Ecological Economics 66, 91-104.	Thanks for this suggestion. However after reading those 2 refs they are mostly focusing on the method via bayesian models to give evidence of farmers practice effects. The trends of the natural services are not described as a results so those papers could not be selected as part of this assessment
Johannes Langemeyer	Ch.2	31	835	32	854	Unclear why this discussion on indicators is relevant for the chapter.	Indicator discussion have been moved to the indicators section
Graciela Rusch	Ch.2	31	840	31	842	That is why the connection between the capacity of the natural system to generate the ES and the actual outcome (level of benefit) needs to be considered together. And that the resulting water quality is not 'clean' can simply mean that the capacity of the system to absorb pollution levels has been overrun, and that water quality would be worse, if the filtering capacity would not be there.	Yes, I agree with this statement. The section have been completely rewritten, (and shortened) so that this message is now included in.
Mark Snethlage	Ch.2	31	840			"Therefore, indicators that quantify the purification capacity of the water do not say anything per se about the remaining water quality and vice versa." Remaining = resulting?	Yes, I agree with this statement. Indicator of this NCP delivery are quantifying the capacity to remove pollutant of the water. However, the water quality results of the adverse effect of this self purification and the quantity of pollutant that arrive in the water
Graciela Rusch	Ch.2	31	842	31	842	It is unclear which kind of 'indicator' is not listed below. Why focus only on the 'demand' indicators only. Could one think that the capacity of the natural system could be enhanced? Maybe be with a larger catchment area? And, water quality says nothing about what the quality would have been if the natural filtration would not have been there.	This NCP indicators are including: indicator of delivery (pollutant removal capacity) and those are at the source of the negative trends described over the ECA. The demand indicator are included, in agreement with literature as water quality.
Nadine Goris	Ch.2	32	849	32	849	should be "Müller"	Yes this is now corrected
Graciela Rusch	Ch.2	32	859	32	859	Would it be possible to indicate which are the main reasons that are affecting the decline of capacity?	Yes, the reasons of declined are now explained

Graciela Rusch	Ch.2	32	860	32	875	Could these facts be represented in the form of a table?	This section was completely revised and shorten so that this information was removed due to lack of available space
Andrew Wade	Ch.2	32	860	32	875	River systems draining farmland and urban areas with a major groundwater component are projected to take a long time (100s of years) to recover from past pollutant inputs and this may confound current and future attempts to improve water quality. For example, a model-based assessment of the River Lambourn demonstrated that it would take at least 100 years for the stream water nitrate concentrations to return to 1920 levels even if nitrogen inputs were reduced to zero. More details are given in - Jackson et al. 2007. Catchment-scale modelling of flow and nutrient transport in the Chalk unsaturated zone. Ecological Modelling 209, 41-52.	Thank you very much for this additional information, however for space concern we were forced to limit the assessment to references that focus on direct NCP status and trends
Andrew Wade	Ch.2	32	868	32	875	In the discussion about phosphorus, perhaps include the paper - Powers et al., 2016. Long-term accumulation and transport of anthropogenic phosphorus in three river basins. Nature Geoscience 9, 353-356. The paper describes how phosphorus, over long time scales, can become remobilised.	Thanks but we need to be very selective in the choice of papers that only describe status and trends of natural services and benefits
Graciela Rusch	Ch.2	32	870	32	870	Increase in P concentrations in water'	This section was completely revised and shorten and attention was paid to mention P in the water, specially coastal waters
Graciela Rusch	Ch.2	32	872	32	872	The relationship between the loads (release/retention) and the limitation to primary production do not follow from each other in a direct way. Please explain what this refers to.	This section was rewritten so that the relation between NCR Delivery and water quality should be more understandable now
Mark Snethlage	Ch.2	32	878			"Over 60 % of European wetlands were lost before the 1990s and approximately two thirds of all European wetlands existing at the beginning of the 20th century were lost by 1995." - Odd juxtaposition of two rather similar data facts	Yes we made this information more straightforward
Graciela Rusch	Ch.2	32	885	32	887	It is important to highlight that conservation /protection measures have worked and indicate which ones!	Yes , The directives that was able to improve water quality are now mentioned , like European directives
Johannes Langemeyer	Ch.2	32	888	32	890	Some countries, such as Estonia, do have national inventories of wetlands (in Germany this information is collected by specific regions, e.g. Niedersachsen)	Yes we not any more mentioned the wetland inventories with different progress depending on the countries, but Estonia is cited as an example for restoration of riparian zones as cost effective measures for water quality improvement
Graciela Rusch	Ch.2	33	897	33	897	Avoid repetition, this paragraph comes back to what was said before. Summarize facts in a table and shorten text. Similar comment to next paragraphs .	This section was completely revised and shorten also that redundancies were avoided
ECA values liaison group	Ch.2	33	912			Explain what high-value habitats are. Is it biodiversity rich?	We mentioned wetlands and rivers floodplains and coastal area as major contributors to this NCP delivery
Graciela Rusch	Ch.2	34	974	34	977	The highest capacity to provide this NCP? The last statement has an unclear connection.	This section was completely revised and rewritten
Nadine Goris	Ch.2	35	977	35	978	numbers should be superscripts, also the reference is missing	Yes this was applied
Graciela Rusch	Ch.2	35	979	34	985	Here the same idea presented earlier about suitable indicators comes back. I cannot see that water quality alone can be a sufficiently informative indicator of what is the contribution of natural/biophysical systems to provide water cleaning services. Please distinguish capacity from outcome, and address that outcome alone cannot inform about the amount of pollutants that have already been removed. A single indicator disregarding the different components of ES (that you refer to at the start), cannot be a sufficient indicator of ES generation.	Yes , I completely agree water quality is not in indicator of this NCP delivery and brings ambiguity in this section. We tried to make it more clear in the next version but there was a request from other sides to keep water quality included in the indicator list as a demand indicator...
Andrew Wade	Ch.2	35	987	35	990	It might be clearer to say 'improved wastewater treatment' rather than 'water purification' - I'm not sure final effluent can be described as pure water.	This section was completely revised and rewritten
Nadine Goris	Ch.2	35	1002	35	1002	Reference is missing	Reference is now included in the list of references from this NCP
Andrew Wade	Ch.2	35	1013	35	1013	May also be appropriate to note that climate change may have a confounding influence on the mitigation measures used to reduce water pollution. Reviews of the impacts of climate change on water quality include: Whitehead et al. 2009. A review of the potential impacts of climate change on surface water quality. Hydrological Sciences-Journal-des Sciences Hydrologiques 54(1); Watts et al. 2015. Climate change and water in the UK - past changes and future prospects. Progress in Physical Geography 39(1) 6-28; Arnell et al., 2015. The implications of climate change for the water environment in England. Progress in Physical Geography 39(1), 93-120.	The effects of CC on the service delivery should be included in the drivers chapter
ECA values liaison group	Ch.2	35	1014			In the IPBES NCP classification, this NCP includes 'and sediments'. If possible, then please use that name as title of this section. If not possible, then please explain that this has not been reviewed, and the reason for not including it. Consider to account for this in Table 2.1 (line 289-290) as well.	We found very little references to ecosystem services provided by sediments (see Wall et al. 2004). Their contribution to freshwater quality is covered in section 2.2.1.4.
Allan Watt	Ch.2	35	1015			Doesn't make sense: see (very clear) introductions to other NCPs on lines 719 and 799. Also this introduction to the soil sub-sections is rather narrow and does not introduce the reader to the important topics that follow, which, essentially, cover the importance of soil for the production of crops - the loss of soil through erosion and soil fertility.	This section was restructured and partly re-written
Johannes Langemeyer	Ch.2	36	1021			Misplaced information.	This section has been restructured
Mark Rounsevell	Ch.2	36	1026	36	1026	There's quite a lot of background/contextual text in this section that could be reduced.	This section was reduced
Mark Snethlage	Ch.2	36	1026			possible additional refs: Boardman, J., Poesen, J., & Wiley InterScience (Online service). (2006). Soil erosion in Europe. Wiley. Panagos, P., Meusburger, K., Ballabio, C., Borrelli, P., & Alewell, C. (2014). Soil erodibility in Europe: A high-resolution dataset based on LUCAS. Science of The Total Environment, 479, 189-200. <a href="http://doi.org/10.1016/j.scitotenv.2014.02.010">http://doi.org/10.1016/j.scitotenv.2014.02.010</a>	Thank you for the suggestions. References have been included
Hanna Skryhan	Ch.2	36	1042	36	1042	and what about CA? it seems necessary to add the data on CA	We revised this information trying to clarify for CA. References were added for CA.
Graciela Rusch	Ch.2	36	1043	35	1059	Present these facts in a summary table?	This paragraph was really shortened in order to condense the chapter and to focus on NCP rather than on the state of land degradation in ECA
The Netherlands: Astrid Hilgers	Ch.2	36	1043	36	1046	It is not clear which status is addressed here. The status of the need for erosion prevention, the amount of erosion, or the amount of the capacity to protect against erosion?	The status of the capacity to protect against erosion. This has been hopefully clarified.
The Netherlands: Astrid Hilgers	Ch.2	36	1046	36	1050	The focus here is on the relation to climate. This is not completely relevant; better to address more the relation with management, which expresses the human-induced erosion while the relation with climate merely addresses the relation with erosion as a geological, landscape forming process.	Most focus is given on the effect of management on erosion. However, forecasted climate changes have been demonstrated, by modelling (e.g. Jones 2009. See also section on futures.
Graciela Rusch	Ch.2	37	1062	37	1062	Difficult to see the contrasts, use more distinct colours. Fig 2:18	better versions of the figures will be used and some of them will be redrawn by TSU
Mark Snethlage	Ch.2	38	1068			Same map cut to the precise ECA region border: Soil Cover Factor data download: <a href="http://www.fao.org/nr/lada/gladis/gladis/downl.php">http://www.fao.org/nr/lada/gladis/gladis/downl.php</a> Also see <a href="https://tinyurl.com/ECA-Maps">https://tinyurl.com/ECA-Maps</a> for example	Thanks !
Graciela Rusch	Ch.2	39	1082	39	1085	Biological interactions (such as symbiotic fungi (mychorryza) contribute importantly to water and nutrient uptake by plants.	Yes, biological contribution to soil fertility was mentioned
PESC-4: Kristina Raab	Ch.2	39	1082	42	1131	chapter 2.2.1.7.2: what does soil fertility have to do with NCPs? In this section, there is more information on chemical/mineral components of soil than on biological aspects and the link to biodiversity and ecosystem services is not highlighted as needed	Soil fertility has been defined as an NCP (see IPBES conceptual framework). We changed to soil quality which is broader. Soil related NCP involve biological aspects but not only.

PESC-4: Jonas Geschke	Ch.2	39	1082	42	1131	chapter 2.2.1.7.2: content is way too detailed (with all the chemicals) and could be synthesised further	This section has been condensed
PESC-4: Eva Spehn	Ch.2	39	1082	42	1131	chapter 2.2.1.7.2: content is way too detailed (with all the chemicals) and could be synthesised further	This section has been condensed
The Netherlands: Astrid Hilgers	Ch.2	40	1112	40	1113	If the soil organic carbon stock increases upon afforestation, it's not supporting food production anymore, while for the growth of timber the soil organic carbon stock is of lesser importance. Would advise to reconsider if this is really an NCP.	NCPs are not only focused on agricultural production but on the many contributions of nature to people. Soil organic carbon is a reasonable proxy for soil fertility (at least its variable components including those related to biological activity).
Nadine Goris	Ch.2	40	1116	40	1116	Figure 2.22: unreadable due to too small font and out of focus	better versions of the figures will be used and some of them will be redrawn by TSU
Mark Snethlage	Ch.2	41	1122			suggestion to use a consistent clip mask (covering the entire ECA region, with consistent projection) for thematic layer extraction. Data download: <a href="http://webarchive.iiasa.ac.at/Research/LUC/External-World-soil-database/">http://webarchive.iiasa.ac.at/Research/LUC/External-World-soil-database/</a> Also see <a href="https://tinyurl.com/ECA-Maps">https://tinyurl.com/ECA-Maps</a> for examples	Thanks for your work on this matter ! LAs do not have the know-how to do it
Mark Snethlage	Ch.2	41	1126			map does not cover the entire ECA area (Central Asia is missing). Alternative might be Below Ground Carbon data download: <a href="http://www.fao.org/nr/lada/gladis/gladis/down.php">http://www.fao.org/nr/lada/gladis/gladis/down.php</a> Also see <a href="https://tinyurl.com/ECA-Maps">https://tinyurl.com/ECA-Maps</a> for example	Thanks for your work on this matter ! We will see with technical support unit what can be done to improve maps provided.
Nadine Goris	Ch.2	42	1129	42	1129	Figure 2.25: partly unreadable due to too small font and out of focus	better versions of the figures have been used
Allan Watt	Ch.2	42	1132			Obviously incomplete and the draft does not address the issue of decontamination. Perhaps the loss of soil described here could be dealt with in the earlier section on soil erosion.	This section has been elaborated. However, given the necessity to strongly condense the text, no specific information was given on natural attenuation of contaminants by soils
Hanna Skryhan	Ch.2	42	1132	42	1142	the paragraph should be complete by the information about soil contamination after the disaster at Chernobyl NPS in Belarus, Russia and Ukraine. I can summarize in half-page text this data, if the authors will agree with my suggestion	Thank you. There will be a box on Chernobyl elsewhere in the chapter.
Nadine Goris	Ch.2	42	1138	42	1138	Figure 2.26: unreadable due to too small font and out of focus	better versions of the figures have been used
Mark Rounsevell	Ch.2	42	1139		1139	The relevance of this figure to this section is not clear, and I can't see a cross-reference to the figure in the text. Delete?	This figure was referenced in the text. Urban sprawl is a major driver of ES and NCP changes in ECA, especially in Western Europe
Mark Rounsevell	Ch.2	43	1143		1143	There's some scope to shorten the text in this section by focusing more on the NCP aspects rather than the broader contextual descriptions about infrastructure, socio-economics and governance issues.	This section was severely shorten and rewritten
Allan Watt	Ch.2	43	1143	43	1167	This section should be framed in such a way that the NCP (or NCPs) are clearer. Perhaps start by writing "Natural hazards and extreme events may be mitigated by, for example, flood regulation, drought mitigation..."	This section was reorganised and rewritten with focus on few hazards because of space constrains, mostly floods and droughts
PESC-4: Kristina Raab Health Review: Julie Garnier	Ch.2	43	1144	43	1167	chapter 2.2.1.8: nature based solutions should be mentioned here	NBS will be suggested again in the next version , but not sure they will remain in the final version of this NCP
Health Review: Julie Garnier	Ch.2	43	1149	43	1149	Human activities and demographics	Sorry, what are the lines where this comment refers ?
Health Review: Julie Garnier	Ch.2	43	1151	43	1154	Beaches/dunes are components of coastal ecosystems which role as natural barriers against erosion and extreme weater events will only be fulfilled if the integrity of this ecosystem as a whole is respected. Other vital habitats include salt marshes, estuaries etc	Yes, this information should be included in the explanation of the flood and see level rise regulation NCP. Explanation on the process involved in this NCP delivery are still missing in this section, and I will suggest it again in the next version
Mark Rounsevell	Ch.2	43	1155		1156	Shouldn't the SLR statements be in section 2.26 on 'Future trends'?	Yes some information about flood and drought frequencies and severity trends in the future were movend in the future section
Allan Watt	Ch.2	43	1168	46	1276	The NCP is buried in the detail on the hazard.	This section was fully rebuilt with fucus on flood and drought as main hazards.
Germany	Ch.2	43	1169	43	1180	Concerning flood events it is referred to a period from 1980-2010. After 2010 there were several worse flood events in Germany but also in other countries (e.g. 2011/2013 on rivers Elbe and Donau, 2016 extrem rainfall with pluvial floods above all in South Germany). If a current status should be provided it is advisable to take these events in account (e.g. in naming a period of 1980-2016). In Line 1275 for example the Climate Change information refers to a period up to 2014. But due to the bibliographical reference the authors themselves shouldconsider if the extension of the period could be made.	A mixed trends is now settled for the flood as major hazard of this NCP, with an increase of flood severity and frequency in some parts of the region
Graciela Rusch	Ch.2	43	1175	43	1180	This paragraph is unclear. Which is the message?	This section was fully rebuilt with fucus on flood and drought as main hazards. The main message is that "a mixed trends is observed in the region due to different climate and vegetation in south and North EAC regions. The information about the demand is much more available than informatuion about the delivery of this reg NCP
Health Review: Julie Garnier	Ch.2	43	1181	43	1181	Floodplains are part of river ecosystems so better tho rephrase with "Most river ecosystems and associated floodplains..."	This precision is made about central europ were the focus is on the floodplains
Graciela Rusch	Ch.2	44	1185	44	1196	This paragraph is unclear too.	This section was completely rewritten
Graciela Rusch	Ch.2	44	1197	44	1210	It is unclear how these changes have been related to the capacity for flood control of the watershed.	All the information about the flood control have been removed from this section and we will insist again in the next version to include in
Graciela Rusch	Ch.2	45	1229	45		This section needs to be more structured, the paragraphs are to a large extent disconnected from each other, difficult to get a coherent picture of what is going on and what the evidence supports.	This section was reorganised and rewritten with focus on few hazards because of space constrains, mostly floods and droughts
ECA values liaison group	Ch.2	45	1236	45	1241	This section can be left out. Especially remove the sentence which refers to economic / monetary value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	All information about values were removed from this NCP section
Hanna Skryhan	Ch.2	45	1242	45	1265	may be it has sense to remove this small part of the text to Ch.6 (policy insruments)?	This part was removed from this section
Germany	Ch.2	45	1251	45	1253	„Kinzig watershed“ : the river Kinzig exists two times in Germany. Both – one in the Blackforest and one in the South of Hessen – show relevant flood events and have noteworthy watersheds. A hint, which Kinzig is meant would be useful, although it might be concluded because of the reference that it is the one in Hessen.	Unfortunately this section don't include anymore information at this level of precision with watershed names. We were severely constrained by space availability
Johannes Langemeyer	Ch.2	45	1266	46	1273	A bit unclear paragraph	This section was completely rewritten
ECA values liaison group	Ch.2	45	1266	46	1276	Number of deaths is an indicator for Quality of Life rather than NCP, as is economic consequence in terms of GDP change. Suggestion to leave it out here and, after discussion, move it to Quality of Life.	This NCP demand is now using a more direct indicator as the number of flood

Graciela Rusch	Ch.2	46	1291	46	1300	The introduction of new species should not be the first recommendation, because there is a potential of several unintended consequences of introductions. Rather maintain the genetic variability within native species, including forms adapted to drought, and warmer / wetter climates would be a more resilient solution.	This comment has been removed in the 30d
Mark Rounsevell	Ch.2	46	1277	46	1277	What are the NCP implications here?	This NCP was completely rebuilt and rewritten mainly focusing on floods and droughts as regulated hazards. Information on the flood regulation NCP capacity being supported by riparian forest is limited (and does not remain any more) but more generally decreasing trends are reported for densely populated areas; where most floodplain landscapes and wetlands have been heavily transformed.
PESC-4: Kristina Raab	Ch.2	46	1277	46	1290	chapter 2.2.1.8.2: drought is especially important in the Central Asian regions (Caucasus ect) => see UNCCD national reports	Yes, droughts increase in CA is now mentionend in this section
PESC-4: Sophiko Akhobadze	Ch.2	46	1277	46	1290	chapter 2.2.1.8.2: drought is especially important in the Central Asian regions (Caucasus ect) => see UNCCD national reports	Yes, droughts increase in CA is now mentionend in this section
Hanna Skryhan	Ch.2	46	1290	46	1290	and what about CA? it seems necessary to add the data on CA	Yes, droughts and floods increase in CA is now mentionend in this section
Allan Watt	Ch.2	46	1291	46	1306	A better sub-section but the NCP is not clear. You could start with writing something like: "The risk of wind damage to forests may be mitigated through management... This regulating NCP..."	For space availability concern, the number of hazard that are explored in this section was limited to flood, and droughts and few lines about fires, but wind is not remaining any more
Allan Watt	Ch.2	46	1277	46	1290	The NCP is not even mentioned here.	This subsection is now rebuilt with focus on the floods regulation NCP floods being the most damaging natural hazard.
Hanna Skryhan	Ch.2	46	1300	46	1300	and what about CA? it seems necessary to add the data on CA	Unfortunately CA information about Water quality regulation NCP is still very poor and it was mentioned as a gap of information in the new version
Allan Watt	Ch.2	46	1301	47	1325	Too much emphasis on fire and not enough on the regulating NCP.	This section was completely rewritten, with main focus on flood and drought regulation, other hazards such as fire and land slides were much reduced because of section length concerns.
Graciela Rusch	Ch.2	47	1303	47	1315	How does this relate to the capacity of ecosystems to reduce fire hazards?	We found very few information about regulation capacity and trends about fire as one hazard. Most ref are about the demand for this hazards regulation (number of fire etc.) so that this hazard part was shorten and rewritten in order to evidence this.
Health Review: Daniela Haluza	Ch.2	47	1316	47	1318	What are "The very few manuscripts found for Central Europe"? How was the "low" perceptions of people of the threat of fire measured?	About Flooding : Acreman MC, Fisher J, Stratford CJ, Mould DJ, Mountford JO. Hydrological science and wetland restoration: some case studies from Europe. Hydrology and Earth System Sciences Discussions. 2007 Jan 17;11(1):158-69. Mrozik K. Assessment of Retention Potential Changes as an Element of Suburbanization Monitoring on Example of an Ungauged Catchment in Poznań Metropolitan Area (Poland). Rocznik Ochrona Środowiska. 2016 Jan 1;18(cz. 1):188-200. Grygoruk M, Mirosław-Świątek D, Chrzanoska W, Ignar S. How much for water? Economic assessment and mapping of floodplain water storage as a catchment-scale ecosystem service of wetlands. Water. 2013 Nov 1;5(4):1760-79. Pehlivanov L, Fikova R, Ivanova N, Kalchev R, Kazakov S, Pavlova M, Doncheva S. Analysis of ecosystem services of wetlands along the Bulgarian section of the Danube River. Acta zoologica bulgarica. 2014 Jun 1:103-7. About FIRE : Mašins G, Urbane V, leviš J, Malahova J. Preventive measures for grass fire risk reduction. ECONOMIC SCIENCE FOR RURAL DEVELOPMENT. 2015 Apr 15:205. Mavsar R, Japelj A, Kovač M. Trade-offs between fire prevention and provision of ecosystem services in Slovenia. Forest Policy and Economics. 2013 Apr 30;29:62-9. Ocak S. Transhumance in Central Anatolia: A Resilient Interdependence Between Biological and Cultural Diversity. Journal of Agricultural and Environmental Ethics. 2016 Jun 1;29(3):439-53.
Mark Snethlage	Ch.2	47	1322			Other info source on fires at the global level, i.e. also including Eastern Europe and Central Asia: VIIRS Active Fire Data (7 days) - Fire Information for Resource Management System (FIRMS) - Earth Observing System Data and Information System - <a href="https://earthdata.nasa.gov/earth-observation-data/near-real-time/firms">https://earthdata.nasa.gov/earth-observation-data/near-real-time/firms</a> ; Condition of Natural Fire Systems by Terrestrial Ecoregion - Atlas of Global Conservation - Data Basin - <a href="https://databasin.org/galleries/2d2d35ae3bc34399976b598ed7893254">https://databasin.org/galleries/2d2d35ae3bc34399976b598ed7893254</a> ; MODIS Active Fire Data (7 days) - Fire Information for Resource Management System (FIRMS) - Earth Observing System Data and Information System <a href="https://firms.modaps.eosdis.nasa.gov/active_fire/">https://firms.modaps.eosdis.nasa.gov/active_fire/</a> ; Global Fire Emissions Database, Version 4, (GFEDv4) - Vegetation Collections Data Sets - ORNL DAAC Data - <a href="http://www.globalfiredata.org/">http://www.globalfiredata.org/</a> ; Burned Areas MODIS Active Fire and Burned Area Products - <a href="http://modis-fire.umd.edu/pages/BurnedArea.php">http://modis-fire.umd.edu/pages/BurnedArea.php</a> ; Active Fires - MODIS Active Fire and Burned Area Products - <a href="http://modis-fire.umd.edu/pages/ActiveFire.php">http://modis-fire.umd.edu/pages/ActiveFire.php</a>	Thanks a lot for those information about fires. Most of the available information about this hazards are concerning the demand for this NCP Unfortunately, are information about the regulation delivery are still very poor. This NCP section was rebuilt mainly focusing on flood regulation and other hazards was much reduced in length due to space concern.
Mark Rounsevell	Ch.2	47	1326		1326	Possibly some literature available for Israel for this section?	Sorry we didn't find any literature about Israel for this NCP
Allan Watt	Ch.2	47	1326	47	1331	A much better example, although the NCP is implicit. Perhaps start by writing "Desertification can be mitigated by protective forests but..." Also, are there other relevant regulating NCPs?	Desertification is not included in this NCP section, since it was decided to focus on flood and drought regulation NCP in this section.
Graciela Rusch	Ch.2	47	1326	47	1331	Any contribution of agricultural and pasturlands to desertification control? Different kinds of mamangement?	Desertification is not included in this NCP section, since it was decided to focus on flood and drought regulation NCP in this section.

						The regulating NCP is somewhat hidden in the text (again). Also there are other relevant NCPs: forests are not the only NCP relevant to this hazard.	This section was rewritten with focus on floods and droughts regulation. Available and relevant information about this NCP regulation from forest and wetlands and coastal morphology will be suggested to addition with a more concise from again in this section. The suggested text is "Beaches/dunes are components of coastal which role as natural barriers against erosion and extreme water events will only be fulfilled if the integrity of this ecosystem as a whole is respected. The knowledge base for decision-making on coastline management is weak, in general. Other vital habitats include salt marshes and estuaries, as well as natural wetlands or nature based solutions all along the catchment for continental ecosystems."
Allan Watt	Ch.2	47	1332	47	1341		
Graciela Rusch	Ch.2	47	1332	47	1341	This section could be better placed together with flood control.	This section was completely re-organised focusing on flood and drought hazards
Health Review: Margarida Simões	Ch.2	47	1332	47	1341	Information that may be added for better visual perspective: <a href="http://www.euroision.org/">http://www.euroision.org/</a> <a href="http://www.euroision.org/project/euroision_en.pdf">http://www.euroision.org/project/euroision_en.pdf</a> *image page 11 And arguments that may be used to reinforce issue awareness: "Finding 5: The knowledge base for decision-making on coastline management is weak, in general"	Thanks a lot for this relevant information, the text that was suggested to add in this section about the natural support for this NCP is : "Beaches/dunes are components of coastal which role as natural barriers against erosion and extreme water events will only be fulfilled if the integrity of this ecosystem as a whole is respected. The knowledge base for decision-making on coastline management is weak, in general. Other vital habitats include salt marshes and estuaries, as well as natural wetlands or nature based solutions all along the catchment for continental ecosystems."
Graciela Rusch	Ch.2	47	1343	47	1352	Case for snowslide control in Norway, could be referred to: Schröter, M., Barton, D.N., Remme, R.P., Hein, L., 2014. Accounting for capacity and flow of ecosystem services: A conceptual model and a case study for Telemark, Norway. Ecological Indicators 36, 539-551.	Thank you very much for this relevant suggestion. However it was decided to not any more developp snowslides hazards of this NCP section, and just focus on flood and drought hazards regulation. A few lines was added for each of the hazards : fire, land slides, wind, etc..
Germany	Ch.2	48	1353	78	2052	The whole subject of ABS and Nagoya Protocol seems to be missing or at least is reflected in a very limited way. The list of material NCPs in Chapter 2.2.2 seems to be limited/incomplete. It seems to be mainly focused on the use of commodities as such food and feed, energy, medicine. What seems to be missing is the use of the genetic resources of such materials which is different for many reasons from using them as commodities. Furthermore, utilization of genetic resources goes beyond medicinal purposes. Many very different sectors benefit from research and development on genetic resources, such as pharma, cosmetics, biotech, biocontrol, plant and animal breeding, food and feed, but also academic (non-applied) research. All provide important contributions to people. Data of such material contributions from nature are not well covered (if at all) in national economic statistics. Lines 1881-1884 seem to briefly mention all of this but do not go into any detail. Also, the focus is again on medical plants only.	Unfortunately, the author group did not have the expertise to cover this subject in more depth.
ECA values liaison group	Ch.2	48	1354	48	1355	In this sentence, please elaborate on '... part of our daily life'. Add that material NCPs contribute, among others, to mental and physical health and wellbeing, nutrition, sense of place and sense of community, and artistic inspiration. Because the following sentences discuss economic cycles and accounting quite strongly, it suggests that Material NCPs are about 'commodities' and 'economics'. This will provide the reader with a frame that is too limited.	We considered that to the extent that these contributions are in fact made through the materials themselves they are accounted for in the economic considerations, and where the non-material contributions that come along with production of materials are meant in this comment these are discussed in other parts of Chapter 2.
ECA values liaison group	Ch.2	48	1355	48	1357	The introduction section to 2.2.2 (Material NCPs) suggests that Material NCPs are very much about 'entering economic cycles' and 'commodities'. This piece of text is meant to illustrate and introduce the difficulties of where to find data, and how to account for the diversity of NCPs. We suggest to clearly start the sentence with a phrase, such as: "Quantifying the status and trends of material NCPs faces a number of challenges with relation to data availability..."	We found this would be poor messaging.
ECA values liaison group	Ch.2	48	1362	48	1363	Please add that, in addition, people value the NCPs in many different ways.	We have covered this using the example of seafood.
ECA values liaison group	Ch.2	48	1367	48	1369	This sentence again suggests that trends of Material NCPs can mostly be discerned by looking at economic statistics, which frames to the reader that Material NCPs are about economics (and thus: money) and that you only relied on national statistics for your data. Either leave the sentence out, or leave the word 'economic' out (statistics remain). In addition, please also refer to the general state of scientific knowledge on material NCPs, so that the reader knows that both aspects were covered.	This is not what the sentences says. To the contrary, it expresses that there are NCP not covered by economic statistics.
Alberto Bernués	Ch.2	48	1371	53		Food (and feed) are contemplated in terms of bulk quantities. Nothing is mentioned about food quality and safety. However, several studies show that quality foods linked to particular territories (e.g. PDO), specially in HNV farmland areas, are perceived by the public as key provisioning ecosystem services of agroecosystems. This is particularly true in Mediterranean Europe, but also in other Mediterranean countries. See for example: Bernués A., Tello-García E., Rodríguez-Ortega T., Ripoll-Bosch R., Casasús I., 2016. Agricultural practices, ecosystem services and sustainability in High Nature Value farmland: Unraveling the perceptions of farmers and nonfarmers. Land Use policy 59, 130-142. Bernués A., Rodríguez-Ortega T., Alfnes F., Clemetsen M., Eik L.O., 2015. Quantifying the multifunctionality of fjord and mountain agriculture by means of sociocultural and economic valuation of ecosystem services. Land Use Policy 48, 170-178. Bernués A., Rodríguez-Ortega T., Ripoll-Bosch R., Alfnes R., 2014. Socio-cultural and economic valuation of ecosystem services provided by Mediterranean mountain agroecosystems. PLoS ONE 9(7): e102479.	This section is meant to cover the delivery of food as NCP. The indicators found and the literature mentioned, as most of the works found in the extensive literature review, do not provide assessments of food quality or safety. However some related information is provided in section "2.3.1.1 Food Security".
Allan Watt	Ch.2	48	1372	53	1487	There is a lot of interesting detail in this section but no clear messages about production. In the places where trends are given these are presented often per person and it is not clear whether this refers to the total population or the agricultural workforce.	Values per person refer to the whole country population. However, this section has substantially changed in order to address comments by reviewers and text-length constraints.
Allan Watt	Ch.2	48	1373	48	1381	Surely technological advances in agriculture have been a major influence too?	All containts related to drivers of change have been removed because they are addressed in chapter 4.
Graciela Rusch	Ch.2	48	1373	48	1375	Or rather the way agro-ecosystems and agricultural landscapes are managed to produce food?	All containts related to drivers of change have been removed because they are addressed in chapter 4.
The Netherlands: Astrid Hilgers	Ch.2	48	1373	53	1487	Here, the change of terminology from ES to NCP does not seem to work. Agricultural land could be an (agro) ecosystem, and thus land-based agricultural food production as an ecosystem service. However, perceiving agricultural land as "nature" does not seem correct, and thus land based agricultural food production is then not a contribution of nature to people. If so, please clarify the definition of nature in this context here.	The agreement in ECA-IPBES regional assessment is to indistintively use NCP or ES as preferred. As for the definition of NCP, please see Pascual et al., 2017. "Valuing nature's contributions to people: the IPBES approach". Current Opinion in Environmental Sustainability, 26-27.

The Netherlands: Astrid Hilgers	Ch.2	48	1382	48	1382	Is the area of agricultural land per capita a relevant indicator? The benefit related to this NCP is the amount of food per capita, which has strongly increased due to intensification.	This indicator has been removed in the current version.
Mark Rounsevell	Ch.2	48	1386	49	1396	Is all of this contextual information really needed?	Its has been reduced and linked accordingly to the other sections and chapters where the implications of agricultural intensification are addressed.
Germany	Ch.2	48	1387	48	1387	should that mean "... cultivated area / agricultural area per population"?	No, it is calculated index: cultivated area of a ceratin country / agricultural population living in that country.
The Netherlands: Astrid Hilgers	Ch.2	49	1388	49	1389	Clarify why population dedicated to agriculture is actually an NCP indicator.	It has been rephrased. It is not an indicator of the NCP but of the way it is delivered. This part has been substantially reduced and crossreferenced with other sections and chapters.
Germany	Ch.2	49	1391	49		"... indicators like the mechanisation of food production in the region in the last decades, or the increased use of agricultural tractors ..."	See above.
An Martel	Ch.2	49	1397			Table 2.4: correct? Increase of domestic animals/rural inhabitant and decrease of meat production in Western Europe?	Yes, it is correct. What is decreasing is ECA region's share of the world's production of meat, i.e. meat production in the world is increasing more rapidly in other regions, what has "left ECA behind".
The Netherlands: Astrid Hilgers	Ch.2	49	1403	50	1404	Please explain why there is more data on organic production and consumption needed	This sentence has been changed.
Graciela Rusch	Ch.2	50	1404	50	1404	Are these data presented somewhere?	This part has been removed because monetary values of NCP are reported on section "2.3.5.2 Monetary values".
Graciela Rusch	Ch.2	50	1404	50		This section does not actually address the capacity of European agro-ecosystems to produce food. What about linking food production to soil condition, the amount and diversity of pollinators, the control of pests by natural enemies. And, to relate condion to landscape characteristics? It would also be insightful to provide evidence about trends in the dependence on external inputs (mineral fertilizers, feed for livestock, pesticides). What about the incidence of pest outbreaks?	All this is covered in other sections of chapter 2, chapters 3, 4 and 6. Regarding pest outbreaks, no appropriate data could be identified.
ECA values liaison group	Ch.2	50	1404	50	1408	Please remove the part of this text which refers to economic value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	This part has been removed because monetary values of NCP are reported on section "2.3.5.2 Monetary values". This section currently does not deal with NCP values but NCP provision. All sources of data are mentioned.
Mark Rounsevell	Ch.2	50	1413	50	1413	What are the NCP implications of this?	This has been removed from the current version.
Mark Rounsevell	Ch.2	50	1418	50	1419	"...when it had a sharp decline...": Why was this?	All mentions to drivers have been removed because chapter 4 extensively elaborates on them.
Health Review: Julie Garnier	Ch.2	50	1419	50	1419	Why do we see such a decline in 1990??	All mentions to drivers have been removed because chapter 4 extensively elaborates on them.
Graciela Rusch	Ch.2	51	1427	51	1427	Which is the time unit of meat production, per day?	Per year (all FAOSTAT indicators unless explicited otherwise)
Graciela Rusch	Ch.2	51	1434	51	1445	It would be more informative if the section about food production is structured following the components of biophysical structures and functions underpinning food production (including the agro-ecosystem component, both local capacity and the landscape capacity), the use and the value. And that the diffirent indicators of these components are presented in a table. It would also be informative to distinguish between natural elements/capacity and man-made elements and inputs.	This section is only meant to address NCP delivery and not the ecosystem or ecosystem functions making that possible (what is done in chapter 3). In order to be consistent, we have removed all text related to the production model and drivers, what is addressed in chapter 4.
The Netherlands: Astrid Hilgers	Ch.2	51	1439	51	1444	A low and decreasing number of milking machines per head of cattle indicates scale enlargement and technical progress - increased capacity of milking robots, to be precise. What has happened, is that in the first decade of the CAP more farmers bought a milking machine. Later on, milking machines became more powerful, meaning that you can manage with fewer milking machines. Also, scale enlargement has taken place throughout (western) Europe. While (for example) previously 200 cows were owned by 4 farmers who all had a milking machine, nowadays, 200 cows are owned by one farmer who milks them with just one milking machine. Similarly, the lower number of milking machines per head of cattle in CA en EE can mean a larger scale as well as a lower degree of mechanization. This is an ambivalent indicator and the suggestion is therefore to refrain from using it.	This indicator has been removed.
The Netherlands: Astrid Hilgers	Ch.2	51	1441	51	1442	more important reasons are the increased capacity of milking machines, and scale enlargement. See next comment.	This indicator has been removed.
Graciela Rusch	Ch.2	51	1445		1445	What has decreased in Central Europe?	This part has been removed from the current version.
Mark Rounsevell	Ch.2	52	1447	52	1447	Is there a connection between the declines in this graph around 1990/01 and those in the cereals graph? Presumably because of the break-up of the USSR?	Yes, but all mentions to drivers have been removed because chapter 4 extensively elaborates on them
Mark Rounsevell	Ch.2	52	1460	52	1466	Define "capital stock". What are the NCP implications of this paragraph?	This part has been removed from the current version.
Graciela Rusch	Ch.2	52	1460	52	1466	The connection of this paragraph to ES is unclear.	This part has been removed from the current version.
ECA values liaison group	Ch.2	53	1477	53	1478	Please remove this sentence which refers to economic value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	This part has been removed because monetary values of NCP are reported on section "2.3.5.2 Monetary values".
Germany	Ch.2	53	1480	53	1481	This information is quite old. Is there more recent data?	All data has been updated during this review to latest data available in Septembr 2017 for all indicators used: between 2010 and 2013 depending on the source).
Graciela Rusch	Ch.2	53	1503	53	1503	It would be good to include a statement about how/why unsustainable exploitation levels were reached, and how they were set, and to distinguish more clearly sustainable and unsustainable 'production' levels. Some reflection about difficulties in establishing sustainable use standards, and also about using 'production' alone as an indicator of ES flow. ES flows need to be matched to productive capacity, (this information is not likely to be available always, but it is important to point out the need) and the limitation of using levels of use as indicators of ES flows.	We added information that the overexploitation was mostly due to setting of catch limits larger than those scientifically advised. The methodology for TAC advice is complex was in flux during this period, and therefore cannot be easily summarised here.
Health Review: Daniela Haluza	Ch.2	54	1505	55	1535	Figures 2.32. – 2.34.: the colors and the presentation of the data could be improved.	All figures will be professionally re-designed.
Hanna Skryhan	Ch.2	54	1512	54	1512	is it mistake in the link on figure 2.2?	Yes
Mette Skern-Mauritzen	Ch.2	54	1523	54	1527	Could refer to the Norwegian case, where the problem with salmon lice is hindering increased production. A new management system has very recently been put into place, with a traffic light system reflecting salmon lice abundance in the region defines whether production can be increased or if actions against salmon lice is needed	We added reference to this in the text.
Graciela Rusch	Ch.2	54	1527	54	1527	Authors from the Scandinavian countries could contribute to the section about challenges in aquaculture (one possible contact: Ingeborg Helland-Palm Ingeborg.Helland@nina.no )	There are very tight length constraints, so the section needed to be shorted rather than expanded.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	Ch.2	55	1529			Units of production that are expressed as imperial units "tons" rather than the metric units "tonnes". Since all FAO data ( and I presume , almost all other data, except that from the USA) is in "tonnes" this should be corrected throughout.	Fixed.

UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	Ch.2	55	1529			The decline in catch in eastern Europe may also be attributed to deterioration in monitoring and the proliferation of illegal or informal fishing that is unreported.	This is a possibility. But we cannot speculate about this claim here unless there are referencable sources to support it.
Mark Snethlage	Ch.2	55	1529			do the original data also allow an aggregation along the ECA subregions definitions, i.e., Western Europe, Central Europe, Eastern Europe and Central Asia?	No.
IPBES Knowledge and Data Task Force (KD TF)/ Task Group on Indicators (TGI)	Ch.2	55	1529	55		The graph of Inland Fishery Production can be replaced to the graph which TGI will provide soon	Unfortunately, we did not receive this.
Mark Snethlage	Ch.2	55	1533			do the original data also allow an aggregation along the ECA subregions definitions, i.e., Western Europe, Central Europe, Eastern Europe and Central Asia?	no
Mark Rounsevell	Ch.2	55	1534	55	1534	How do "Northern Europe and Southern Europe" relate to the ECA sub-regions?	We decided to stick with the FAO sub-regions (1) because this is how data is provided and (2) because it reveals key facts that ECA subregions would not resolve.
Graciela Rusch	Ch.2	55	1537	55	1537	Which is the time unit ? Year?	This passage has been removed due to length constraints.
Graciela Rusch	Ch.2	55	1547	55	1552	Norwegian fisheries are of considerable importance but are not represented in EU statistics. Could other sources be searched to include this?	This passage has been removed due to length constraints.
ECA values liaison group	Ch.2	56	1544	56	1545	Please remove this sentence which refers to economic value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	Done!
ECA values liaison group	Ch.2	56	1569			Please swap the whole of Section 2.2.2.1 (Food) with Section 2.2.2.2 (Energy) in order to align with the latest NCP classification, and the order of NCPs. Energy comes ahead of food in the classification	The change has been made.
ECA values liaison group	Ch.2	56	1569			Please swap the whole of Section 2.2.2.2 (Energy) with Section 2.2.2.1 (Food) in order to align with the latest NCP classification, and order of NCPs. In addition, please name the section 'Energy' instead of 'Biomass-based Energy'. Energy comes ahead of food in the classification	The change has been made.
Hanna Skryhan	Ch.2	56	1586	57	1601	replace to the Ch.6	Text has been removed and content will be proposed to Ch 6
Graciela Rusch	Ch.2	57	1597	57	1597	This seems to be related to specific management and harvesting practices, and timber harvest turns, not to the existence of old-growth forest. Cover of old-growth forest is the outcome of specific management approaches. It would be good to provide some reflection about trade-offs with other functions / ES / NCP as a consequence of different management practices.	Text has been removed
Mark Rounsevell	Ch.2	57	1601	57	1601	Central Asia doesn't appear on the graph (except the legend). Is that correct?	Graph has been corrected to better reflect Central Asia
The Netherlands:							
Astrid Hilgers	Ch.2	57	1601	57	1601	CA is not visible in the graph. Reconsider the Y axis scale.	Graph has been corrected to better reflect Central Asia
Hanna Skryhan	Ch.2	57	1616	58	1621	delete this text	Text has been removed
Hanna Skryhan	Ch.2	58	1640	59	1644	and what about EE & CA? it seems necessary to add the data on EE & CA	There are data gaps for EE and CE regarding the share of woody biomass in the overall renewables; however, the section has been revised and shortened to cover all ECA
Graciela Rusch	Ch.2	59	1645	59	1650	The intensification of forestry production for bio-energy, that includes decisions about how much biomass can be extracted from the forest without compromising other benefits in e.g. Finland and Sweden (e.g. soil carbon storage, soil conservation, biodiversity protection) have been studied in depth, and sustainability criteria may not have been completely settled yet. Please, consider references in the Finnish and Swedish literature (see e.g. Hämäläinen et al. 2015 Canadian J of Forest Research; <a href="http://www.slu.se/en/Collaborative-Centres-and-Projects/tree-stump-harvesting-and-its-environmental-consequences/">http://www.slu.se/en/Collaborative-Centres-and-Projects/tree-stump-harvesting-and-its-environmental-consequences/</a> ; and here about challenges and trade-offs in Scandinavian forest management: <a href="https://link.springer.com/article/10.1007/s13280-015-0743-8">https://link.springer.com/article/10.1007/s13280-015-0743-8</a>	Thank you for the reference suggestions. Due to the limited space available for each NCP, the issue of trade-offs has been treated more at length in FEW section. Nevertheless the new text mentions this compromise in lines 1396-1398
Nadine Goris	Ch.2	59	1651	59	1652	Figure 2.37: unreadable due to too small font and out of focus	This figure has been removed from the section
Graciela Rusch	Ch.2	59	1672	59	1674	This is indeed the case, and the trade-offs and challenges of intensification of extraction needs to be treated in its own right. There has been extensive research in these countries addressing the challenges. <a href="http://www.cere.se/documents/wp/CERE_WP2012-5.pdf">http://www.cere.se/documents/wp/CERE_WP2012-5.pdf</a> also Verkerk et al. 2014 Ecosystem Services (for a EU overview).	Due to the limited space available for each NCP, the issue of trade-offs has been treated more at length in FEW section. Verkerk et al. study has been cited
Finnish Government	Ch.2	60	1675	60	1676	The context of the word "forest" needs to be checked. Surely hunting and collection of other NWTP are older uses of forest than fuel wood collection. Maybe forest refers to the wood, not forest environment in the original text?	Text has been smoothed to: 'woodfuel collection has been among the earliest uses of forests by humans'
ECA values liaison group	Ch.2	60	1684	60	1690	This text relates to recreation, which is covered in Section 2.2.3.2. Hence it can be left out here.	This text has been removed
ECA values liaison group	Ch.2	60	1694			In the IPBES NCP classification, this NCP does not include the addition 'and assistance'. Please remove the reference to 'assistance' in the title of the section and throughout the section. Consider to account for this in Table 2.1 (line 289-290) as well.	The classification that went to plenary contains "and assistance".
Health Review: Epameinondas Evergetis	Ch.2	60	1696	60	1696	The Material and Assistance NCP should include in the utilization purposes the industrial production, with reference to the numerous phytochemicals. A distinct example indicates the potentials of wild plants for the provision of Fine Chemicals, a sector of the chemical industry with small volume but high value. Indicative references: Evergetis E and Haroutounian SA. 2014. Exploitation of Apiaceae as Valuable Renewable Sources of Essential Oil containing crops for the production of Fine Chemicals. Industrial Crops and Products. 54:70-77	This section addresses the main actual material contribution by nature. Potential further contributions by nature are addressed in other parts of this assessment.
Johannes Langemeyer	Ch.2	60	1705			I suggest to merge this section with 2.2.2.2.1	This is a plausible option, but we decided not to choose it because it runs counter to the NCP classification.
Finnish Government	Ch.2	60	1714	60	1719	It should be acknowledged in the report that there are trade-offs between different NCPs - not only timber and WNF products and services. Between different berries, between recreation and biodiversity etc.	Trade-offs are discussed in a different part of the Chapter
ECA values liaison group	Ch.2	61	1764	61	1766	Please remove this sentence which refers to economic value, and ideally Figure 2.43 as well, and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	All data on economic values have been moved to section 2.3.5
Germany	Ch.2	62	1733	62	1733	it reads "Europe and Central Asia" however in the table above the values as it reads are only given for "Europe"; Harmonization needed	all graphic materials have been redone for the final version, so this should have been harmonized
Graciela Rusch	Ch.2	62	1733	62	1733	Please, indicate which kind of production this graph refers to: 1: forest productivity (based on forest growth (m3/ha/yr) or 2: round wood extraction. I would not call 'production' in the context of ES as extraction/removal, without any further consideration. IT would be better to use consistently the terminology for indicators of the different components of ES (capacity, use/flow and value). E.g. in fig 40 the term 'removal' is used.	This refers to roundwood production (FAOSTAT)
Graciela Rusch	Ch.2	62	1737	62	1737	Compared to the importance given to the provision of biofuels, by the use of forest for other purposes (e.g. timber/round wood) seems to be very simply treated. Timber production is very well documented. There could be references to different forest/tree types. Also, other products from wood (fibres) are of considerable importance, not least with the development of new technology. The diversification opportunities for forest products seems to be neglected.	Given the limited space available for each section, not everything could be covered
IPBES Knowledge and Data Task Force (KD TF)/ Task Group on Indicators (TGI)	Ch.2	62	1737	62		The graph of Total Wood Removals can be replaced to the graph which TGI provided	This graph has not been replaced as it is based on EUROSTAT data and consistent with other data used



Graciela Rusch	Ch.2	63	1753	63	1753	I miss some important products such as: seeds and genetic resources (e.g. for forestry), tree derived fibres, peat (huge importance for horticulture and floriculture)	Given the limited space available for each section, not everything could be covered
Nadine Goris	Ch.2	64	1764	64	1764	comma missing after "2014"	checked
Hanna Skryhan	Ch.2	65	1776	66	1799	The information about Birch juice & Opium poppy & Cristmas trees is missing	Given the limited space available for each section, not everything could be covered
Graciela Rusch	Ch.2	66	1808	66	1811	Please consult the Norwegian literature.	Literature review has been undertaken following a standardized methodological approach
ECA values liaison group	Ch.2	66	1809	66	1811	Please remove this sentence which refers to economic value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	All data on economic values have been moved to section 2.3.5
Nadine Goris	Ch.2	67	1826	67	1830	Figures 2.44 and 2.45: unreadable due to too small font and out of focus	all graphic materials have been improved in the final version
Graciela Rusch	Ch.2	68	1841	68	1844	This would apply to the case of peat too.	this has not been changed as this section focuses on maerl
Mark Rounsevell	Ch.2	68	1845	68	1845	Should this be 'guard dogs'?	Done
Allan Watt	Ch.2	68	1845	69	1866	Is this a productive NCP or a regulating NCP??	According to the IPBES classification of NCP, this is a material NCP.
ECA values liaison group	Ch.2	68	1845	69	1866	Section 2.2.2.3.6 relates to ILK and 'Education & Knowledge' in relation to management, identity, cultural heritage etc., rather than material NCPs. It is highly interesting and relevant to the ECA, but does not belong in Section 2.2. Suggestion to move it to Section 2.3.3 (Cultural Heritage and Identity), either as text section or as a box.	this section is here because it related to NCP 15 learning and inspiration. Inspiration includes knowledge acquisition and development and thus ILK
Finnish Government	Ch.2	68	1845	68	1862	Hunting dogs accompanied human being prior to livestock keeping. If the latter type of dog-human interaction is included in the report, then also hunting and herding dogs should be included. As it goes, a whole range of domesticated farm animals and reindeer are part of the NCPs.	this is designed as an example of direct use of living organisms for NCP 13 and space constraints prevent the use of other examples
Health Review: Valentina Savo	Ch.2	69	1867	75		I randomly found sentences that were copied and pasted, you must use quotes and references in those cases. I could not check the text throughout since my application for checking this issue only works in word format. Please check if there are other instances of copy and paste. The citations in the text are written using different styles, there is no consistency. Table names are sometimes wrong. References cited in the text or tables (including those in appendix that are referred within the section) are sometimes not cited in the reference list (Please check carefully). The literature search is incomplete and it is not clear how they performed the search. The number of papers is quite higher than 64, in a simple search in 5 mins I found about 20 papers that were relevant to the list and only one was included in the reference list. I have put these at the end of this sheet, but consider that it is NOT complete, it is the result of a 5 min random search, not of a comprehensive full search. This comment pertains the part from page 69 to 75	We like to draw the attention to the information on the search strategy for this part of the assessment ... (included now more prominently in the new appendix)
Yelda Guzel	Ch.2	69	1868	69	1872	Can be embodied with some numerical data e.g. by citing such references: '71% of new drugs that have been approved since 1981 have directly or indirectly been derived from natural products (Newman and Cragg, 2012)' or with some actual examles like 2015 Nobel prize that was given to antimalarian drug 'artemisinin'isolated from 'Artemisia annua'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
ECA values liaison group	Ch.2	69	1868			Please replace 'biodiversity' with what the components of biodiversity that you really mean, as indicated in the sentences that follow.	Thanks for the helpful comment. We use standard terms at this general level of the assessment and can only include details when discussing specific issues
Health Review: Theofilos Poutahidis	Ch.2	69	1868	78	2052	Sammons HM, Gubarev MI, Krepkova LV, Bortnikova VV, Corrick F, Job KM, Sherwin CM, Enioutina EY. Herbal medicines: challenges in the modern world. Part 2. European Union and Russia. Expert Rev Clin Pharmacol. 2016 Aug;9(8):1117-27 Informative review article that could be used to support statements throughout 2.2.2.4 text	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gilberto IGREIAS	Ch.2	69	1868	69	1884	Attention must also be given to how to ensure a sustainable supply of food under changing environmental and climatic conditions as well as changing needs. Effective conservation and enhancement of agro biodiversity and variability needs a legal framework that takes into account genetic resources-related issues to facilitate conservation activities and sustainable use of genetic resources.	This is a very valid statement, but beyond the scope of this particular section; perhaps this is relevant to other parts of the assessment
Health Review: Mahmut Miski	Ch.2	69	1872	69	1872	Please insert the following reference after the "modern pharmaceutical products"; (Cragg & Newman, 2016) : Newman, D.J., & Cragg, G.M. (2016). Natural Products as Sources of New Drugs from 1981 to 2014. J. Nat. Prods., 79 (3), 629-661. DOI: 10.1021/acs.jnatprod.5b01055	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Zorica Popovic	Ch.2	69	1872	69	1876	This intersection of biodiversity, health and culture is a fertile ground for inter- and transdisciplinary studies, with interest across numerous disciplines including anthropology, archaeology, ethnobiology, ethnoecology, ethnopharmacy, veterinary and human medicine and epidemiology, pharmacology and others (Heinrichs & Jäger, 2015; Payyappallimana & Subramanian, 1876 2015)).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	69	1874	69	1876	Change "ethnopharmacy" into "ethnopharmacology". Change "veterinary and human medicine and epidemiology, pharmacology and others" into "veterinary, human medicine and others". There is an extra bracket at the end of the sentence	this is now adapted
Health Review: Suzanne Skevington	Ch.2	69	1874	69	1875	health psychology	this is now added
ECA values liaison group	Ch.2	69	1876			In the IPBES NCP classification, this NCP includes 'biochemical and genetic resources'. Please explain that these have not been reviewed, and the reason for not including them. Consider to account for this in Table 2.1 (line 289-290) as well.	We only had the expert capacity for medicinal plants; this will now be pointed out in the new title of this section
Health Review: Valentina Savo	Ch.2	69	1877	69	1879	The sentence is too long and can be shortened easily	the sentence is reworked for clarification
Health Review: Valentina Savo	Ch.2	69	1882	69	1884	Change "in many ways with issues relating to agriculture, food and nutrition, and genetic resources, and that many of the policy and ethical issues associated with medicinal plants converge with issues of equitable access to, and sharing of the benefits from, genetic resources" into "in many ways with issues relating to biodiversity conservation, agriculture, food and nutrition, but also genetic resources and intellectual properties. Many of the policy and ethical issues associated with medicinal plants converge with issues of equitable access to, and sharing of the benefits from, genetic resources"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Epameinondas Evergetis	Ch.2	69	1884	69	1884	After having reviewed the chapter on Medicinal plant Resources I understood that the utilization of biodiversity for bioprospecting and the consequent discovery of novel therapeutic agents had not been approached. In my opinion the cases of Artemisinin and Taxol as plant derived medicines should be noted and the relevant references could be: Artemisinin: Tu Y. 2011. The discovery of Artemisinin (qinghaosu) and gifts from Chinese medicine. Nature. 17. 1217-1220. Taxol: Goodman J and Walsh V. 2001. The story of Taxol: Nature and Politics in the pursuit of an Anti-Cancer Drug. Cambridge Univeristy Press. ISBN: 978-0-521-56123-5. In the same context a fundamental reference for the utilisation of Natural Products in modern medicinal practice and drug discovery is: Newman D J & Cragg G M. 2016. Natural Products as sources for New Drugs from 1981 to 2014. Journal of Natural Products. 79(3): 621-661. There is stated that 49% of all anticancer drugs is of direct natural origin, while the inclusion of nature inspired drugs alleviates this figure to 75%.	This is a very valid statement, but beyond the scope of this particular section, due to limited resources we could not look into this aspect
Health Review: Gilberto IGREIAS	Ch.2	69	1885	72	1925	Rural Development Policy, via its agri-environmental measures to target the level of practical farming and via the European Innovation Partnership to bridge practice needs with research activities and foster interaction between relevant actors; Research & Innovation Policy with its Framework Programme Horizon 2020 to build up the knowledge base on genetic diversity in agriculture; Particular emphasis must be given to an integrated and holistic approach that ensures a better coordination of genetic resources conservation efforts through sustainable use and an effective interplay among the relevant actors.	This is a very valid statement, but beyond the scope of this particular section; perhaps this is relevant to other parts of the assessment

Yelda Guzel	Ch.2	69	1886	70	1890	Despite it's very rich biodiversity there is no information about Turkey.	This indeed not integrated in this report; a good suggestion for future inclusion
Health Review: Valentina Savo	Ch.2	69	1886	69	1886	Change "particular" into "particularly"	Thanks for the good suggestion, we will adapt
Health Review: Valentina Savo	Ch.2	70	1890	70	1890	The figure is not at a good resolution. The smaller text is quite blurry and not readable in some cases.	Valid statement: all figures will be improved for the final version of the text.
Health Review: Valentina Savo	Ch.2	70	1892	79		Shikov, A.N., Pozharitskaya, O.N., Makarov, V.G., Wagner, H., Verpoorte, R. and Heinrich, M., 2014. Medicinal plants of the Russian Pharmacopoeia; their history and applications. <i>Journal of ethnopharmacology</i> , 154(3), pp.481-536.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Amessis-Ouchemoukh, N., Madani, K., Falé, P.L., Serralheiro, M.L. and Araújo, M.E.M., 2014. Antioxidant capacity and phenolic contents of some Mediterranean medicinal plants and their potential role in the inhibition of cyclooxygenase-1 and acetylcholinesterase activities. <i>Industrial Crops and Products</i> , 53, pp.6-15.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Mayer, M., Vogl, C.R., Amorena, M., Hamburger, M. and Walkenhorst, M., 2014. Treatment of organic livestock with medicinal plants: a systematic review of European ethnoveterinary research. <i>Forschende Komplementärmedizin/Research in Complementary Medicine</i> , 21(6), pp.375-386.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Baydoun, S., Chalak, L., Dalleh, H. and Arnold, N., 2015. Ethnopharmacological survey of medicinal plants used in traditional medicine by the communities of Mount Hermon, Lebanon. <i>Journal of ethnopharmacology</i> , 173, pp.139-156.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Menendez-Baceta, G., Aceituno-Mata, L., Molina, M., Reyes-García, V., Tardío, J. and Pardo-de-Santayana, M., 2014. Medicinal plants traditionally used in the northwest of the Basque Country (Biscay and Alava), Iberian Peninsula. <i>Journal of ethnopharmacology</i> , 152(1), pp.113-134.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Hayta, S., Polat, R. and Selvi, S., 2014. Traditional uses of medicinal plants in Elazığ (Turkey). <i>Journal of ethnopharmacology</i> , 154(3), pp.613-623.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Kaval, I., Behçet, L. and Çaklıoğlu, U., 2014. Ethnobotanical study on medicinal plants in Geçitli and its surrounding (Hakkari-Turkey). <i>Journal of ethnopharmacology</i> , 155(1), pp.171-184.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Alarcón, R., Pardo-de-Santayana, M., Priestley, C., Morales, R. and Heinrich, M., 2015. Medicinal and local food plants in the south of Alava (Basque Country, Spain). <i>Journal of ethnopharmacology</i> , 176, pp.207-224.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Cavero, R. Y., and M. I. Calvo, "Medicinal plants used for respiratory affections in Navarra and their pharmacological validation." <i>Journal of ethnopharmacology</i> 158 (2014): 216-220.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Tuttolomondo, T., Licata, M., Leto, C., Savo, V., Bonsangue, G., Gargano, M.L., Ventrella, G. and La Bella, S., 2014. Ethnobotanical investigation on wild medicinal plants in the Monti Sicani Regional Park (Sicily, Italy). <i>Journal of ethnopharmacology</i> , 153(3), pp.568-586.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Mükemre, M., Behçet, L. and Çaklıoğlu, U., 2015. Ethnobotanical study on medicinal plants in villages of Çatak (Van-Turkey). <i>Journal of ethnopharmacology</i> , 166, pp.361-374.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Calvo, M.I. and Cavero, R.Y., 2014. Medicinal plants used for cardiovascular diseases in Navarra and their validation from official sources. <i>Journal of ethnopharmacology</i> , 157, pp.268-273.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Cavero, R.Y. and Calvo, M.I., 2015. Medicinal plants used for musculoskeletal disorders in Navarra and their pharmacological validation. <i>Journal of ethnopharmacology</i> , 168, pp.255-259.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Menale, B. and Muoio, R., 2014. Use of medicinal plants in the south-Eastern area of the partenio regional park (Campania, Southern Italy). <i>Journal of ethnopharmacology</i> , 153(1), pp.297-307.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Sargin, S.A., 2015. Ethnobotanical survey of medicinal plants in Bozozayi district of Mersin, Turkey. <i>Journal of ethnopharmacology</i> , 173, pp.105-126.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79		Calvo, M.I. and Cavero, R.Y., 2015. Medicinal plants used for neurological and mental disorders in Navarra and their validation from official sources. <i>Journal of ethnopharmacology</i> , 169, pp.263-268.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Valentina Savo	Ch.2	70	1892	79	Güler, B., Kümüştekin, G. and Uğurlu, E., 2015. Contribution to the traditional uses of medicinal plants of Turgutlu (Manisa–Turkey). <i>Journal of ethnopharmacology</i> , 176, pp.102-108.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79	Paksoy, M.Y., Selvi, S. and Savran, A., 2016. Ethnopharmacological survey of medicinal plants in Ulukışla (Niğde-Turkey). <i>Journal of Herbal Medicine</i> , 6(1), pp.42-48.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1892	79	Karadeniz, A., Cinbilgel, I., Gün, S.S. and Çetin, A., 2015. Antioxidant activity of some Turkish medicinal plants. <i>Natural product research</i> , 29(24), pp.2308-2312.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gerard Clarke	Ch.2	70	1892	70	1905 I am not an expert on this area but the information in this section seems overly reliant on just one source.	The reason for this is the fact that this publication incorporates an overview of available knowledge
Health Review: Rosaria Costa	Ch.2	70	1892	79	No specific comments to the text but I commented on the state of evidence and key messages in the expert consultation for this tekst part, which will feed into the next version of this tekst part	thanks
Health Review: Nurcan Erbil	Ch.2	70	1892	79	No specific comments to the text but I commented on the state of evidence and key messages in the expert consultation for this tekst part, which will feed into the next version of this tekst part	thanks
Health Review: Yelda Güzel	Ch.2	70	1892	79	There is very limited data on the status of medicinal plant knowledge on Turkey despite here having the most publications per country (as indicated in line 1922). Analysing ethnomedicinal publications from Turkey more detail will be provide more detailed information on this issue	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jukka- Pekka Jappinen	Ch.2	70	1892	79	In general, there are a lot of good references. Even if I am not an expert on this topic, I assume that there must exist a lot of other references too, but they may not have being published in well established scientific publications. For instance, I found this "grey" report from Finland, which is a literature survey: Bertalan Galambosi & Kirsí Jokela 2002: Uhanalaisten lääkekasvien markkinat ja viljely. Kirjallisuusseelvitys (Abstract: Market potential and research in cultivation of some endangered medicinal plants. Literature survey). Maa- ja elintarviketalous 17. 88 pp. + 8 appendixes. (MTT Agrifood Research Finland, Environmental Research, Ecological Production).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jukka- Pekka Jappinen	Ch.2	70	1892	79	There are also some recent scientific references on the medicinal properties of wild plants in the Argumenta report, which can be obtained here:	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jukka- Pekka Jappinen	Ch.2	70	1892	79	Jäppinen et al. 2014 (Jäppinen, J.-P., Tyrväinen, L., Reinikainen, M. & Ojala, A. (eds.) 2014. Luonto lähelle ja terveydeksi. Ekosysteemipalvelut ja ihmisen terveys Argumenta-hankkeen (2013–2014) tulokset ja toimenpidesuosituksukset (Nature for Health and Well-Being in Finland – results and recommendations from the Argumenta project Ecosystem Services and Human Health (2013–2014)). Suomen ympäristökeskuksen raportteja (Reports of the Finnish Environment Institute) 35/2014. 104 pp. Helsinki). <a href="https://helda.helsinki.fi/handle/10138/153461">https://helda.helsinki.fi/handle/10138/153461</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Johannes Langemeyer	Ch.2	70	1892	79	No specific comments to the text but I commented on the state of evidence and key messages in the expert consultation for this tekst part, which will feed into the next version of this tekst part	Thanks
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	Ch.2	70	1893	70	1903 Excellent use of these data; very important to retain.	Thanks
Thomas Brooks	Ch.2	70	1893	70	1903 Excellent use of these data; very important to retain.	Thanks
Health Review: Epameinondas Evergetis	Ch.2	70	1894	70	1901 Even though the fundamental reference (Allen et al. 2014) is of high confidence, it should be noted that the relative shortlisting of medicinal plants presents significant omissions. Some cases of omitted medicinal plants worth mentioning are: <i>Paeonia parnassica</i> Tzanoud. (Annex II of the Habitats directive), <i>Mandragora officinarum</i> L. (Annex IV of the Habitats directive). Also in the Red Data Book of Rare and Threatened plants of Greece - Phitos D. Constantinidis T & Kamari G, (eds), 2009, Hellenic Botanic Society, Patra, Greece, 2 Vols, ISBN 978-960-9407-12-0 - are listed three species of <i>Sideritis</i> (the Greek Mountain Tea): <i>S. euboica</i> Heldr. (Endangered) <i>S. raeseri</i> Boiss. & Heldr. Subsp. <i>attica</i> (Heldr.) Papan. & Kokkini (Vulnerable) <i>S. spylea</i> Boiss. (Endangered). It should also be noted the total absence of Apiaceae plant Family from the fundamental reference, a significant omission since Apiaceae taxa relate to above 10% of the medicinal taxa in numerous herbals of the past (Evergetis & Haroutounian, 2015).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1896	70	1896 Change "3 Vulnerable (VU), 6 Endangered (EN), but none Critically Endangered (CR)" into 'three are Vulnerable (VU), six Endangered (EN), but none Critically Endangered (CR)'	Adapted
Hanna Skryhan	Ch.2	70	1903	71	1906 the table isn't suitable here, replace to Ch.6 or delete	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	70	1905	71	1906 The second row of the table has a different column size from the others	Adapted
Health Review: Epameinondas Evergetis	Ch.2	70	1905	71	1906 In Table 2.7 should be added: The Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization Regulation (EU) No 511/2014 of the European Parliament and the Council of 16 April 2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits arising from their Utilization in the Union Commission Implementing Regulation (EU) 2015/1866 of 13 October 2015, laying down detailed rules for the implementation of regulation (EU) No 511/2014.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Lars Bjork	Ch.2	71	1907	79	No specific comments to the text but I commented on the state of evidence and key messages in the expert consultation for this tekst part, which will feed into the next version of this tekst part	Thanks
Health Review: Valentina Savo	Ch.2	71	1908	71	1911 Change "In national CBD reports 12 countries report on medicinal plants (mainly Eastern Europe and Central Asia), albeit mentioning different kinds of information about these species, which makes it difficult to compare (Table 2.8)" into 'In national CBD reports, 12 countries document medicinal plants (mainly Eastern Europe and Central Asia), albeit mentioning different kinds of information about these species, making comparisons difficult (Table 2.8)'.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valeria Negri	Ch.2	71	1909	71	1911 Italy and Germany are missing in the list of countries mentioning medicinal plants in their CBD reports. See the 5th Italian CBD report available at <a href="https://www.cbd.int/doc/world/it/it-nr-05-en.pdf">https://www.cbd.int/doc/world/it/it-nr-05-en.pdf</a> (at page 47) and related documents at: <a href="https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/7562">https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/7562</a> Also see the 5th German CBD report available at <a href="https://www.cbd.int/doc/world/de/de-nr-05-en.pdf">https://www.cbd.int/doc/world/de/de-nr-05-en.pdf</a> (page 119) Possibly also other countries are missing in the list; I would advise to search within each country report also using "official", "pharmaceutical use plants" etc. as key search words	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Hanna Skryhan	Ch.2	71	1912	72	1913	add the information about other countries of the region	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	71	1912	71	1912	Change "Table 2.8: ECA region national CBD reports mentioning medicinal plants (N=12)" into "Table 2.8: national CBD reports in the ECA region that mention medicinal plants (N=12).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	71	1912	72	1913	In the row of Bosnia change "3.406.573 kg of medicinal plants and forest fruit was exported in 2010 only" into 'A total of 3.406.573 kg of medicinal plants and forest fruits was exported in 2010 only'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	71	1912	72	1913	In the row of Israel change "medical benefit" into 'medicinal use' or 'health benefit'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	71	1912	72	1913	In the row of Kyrgyzstan "More than 200 medicinal plants species used in traditional and official medicine" into 'More than 200 medicinal plant species used in traditional and conventional medicine'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	71	1912	72	1913	in the row of Lithuania change "Over 100 medicinal plants species growing in the forests" into 'Over 100 medicinal plant species growing in forests'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	71	1912	72	1913	In the row of Sserbia, there is a weird spacing between the word "of" and "medicinal"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	71	1912	72	1913	in the row of Tajikistan, change "More than 60 varieties of wild-growing medicinal herbs that in one or another form permitted to use by the public health authorities" into 'More than 60 varieties of wild-growing medicinal herbs whose use, in one or another form, is permitted by the public health authorities'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	72	1914	72	1915	Change "Different studies provide different estimates of the number of medicinal plants in Europe and Central Asia, but there are no figures available for the entire region" into 'Different studies provide different estimates of the number of medicinal plants growing [or used?] in Europe and Central Asia, but there are no aggregated data available for the entire region'	We added growing
Health Review: Epameinondas Evergetis	Ch.2	72	1914	72	1915	In the beginning of the paragraph should be added as introduction the reference of Dioscorides and his work De Materia Medica as the reference pharmacopeia of Europe and Middle East with almost 20 centuries of continuous usage that influenced both Roman and Arabic medicinal practice (Evergetis & Haroutounian, 2015; Staub et al. 2016). As fundamental References should be considered the sterotype edition of the work: Wellman M (Ed.). 1958. Pedanii Dioscuridis Anazarbei De Materia Medica libri quinque. Vol 3. Berlin. And the latest english translation: Beck L Y. 2011. Pedanius Dioscorides of Anazarbus: De Materia Medica. Olms-Weidmann. Hildesheim	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	72	1916	72	1917	Change "Several studies include relatively high figures for individual countries (Table 2.9)" into 'Several studies report relatively high numbers of species per country (Table 2.9)'	Adapted
Health Review: Valentina Savo	Ch.2	72	1917	72	1918	Change "In a recent (2014 – Feb 2017) review of the scientific literature, we found 64 relevant scientific publications" into 'In a review of recent scientific literature (2014-Feb 2017), we found a total of 64 scientific publications in English'	Adapted
Health Review: Valentina Savo	Ch.2	72	1917	72	1918	The number of studies is underestimated	We like to draw the attention to the information on the search strategy for this part of the assessment ... (included now more prominently in the new appendix)
Health Review: Valeria Negri	Ch.2	72	1917	72	1922	I understand quite a lot of work was already done to produce the tables 2.20, 2.21 -2.26 in Appendix 2.7.3, however a search for papers on WEB OF SCIENCE (basic search with different key words) yielded more papers concerning the ECA regions than presently listed.	We like to draw the attention to the information on the search strategy for this part of the assessment ... (included now more prominently in the new appendix)
Health Review: Valentina Savo	Ch.2	72	1918	72	1918	How do you define relevant?	Relevant depends on our search strategy: we will make this more explicit in the new appendix.
Health Review: Valentina Savo	Ch.2	72	1919	72	1919	Remove the word "much"	Adapted
Health Review: Valentina Savo	Ch.2	72	1920	72	1921	Change "(Table 2.20 and Table 2.21-Table 2.26 in Appendix 2.7.3)" into '(Table 2.20-Table 2.26 in Appendix 2.7.3)'	Adapted
Health Review: Valentina Savo	Ch.2	72	1921	72	1922	The number of studies per country is underestimated, especially considering the fact that many studies are in different languages and probably a search in different languages was not performed	We like to draw the attention to the information on the search strategy for this part of the assessment ... (included now more prominently in the new appendix)
Health Review: Valentina Savo	Ch.2	72	1921	72	1922	Change "Geographically the number of studies is highest for the Central European region, with Turkey having the most publications per country (N=17)." into ' According to our review, the number of studies is higher in the Mediterranean and Central European region'. [Turkey is in the mediterranean]	Adapted
Health Review: Valentina Savo	Ch.2	72	1923	72	1923	Change "Table 2.9: Country of region studies listing medicinal plants" into 'Table 2.9: Country or region of the studies listing medicinal plants'	Adapted
Health Review: Valentina Savo	Ch.2	72	1923	72	1924	Table 2.9, in the row of Central Asia: change "200 medicinal plants species from forest ecosystems only" into '200 medicinal plant species from forest ecosystems only'	Adapted
Health Review: Valentina Savo	Ch.2	72	1923	72	1924	Table 2.9, in the row of Central Asia: change "(Egamberdieva, Mamadalieva, Khodjimotov, & Tiezzi, 2013) into '(Egamberdieva et al., 2013)	Adapted
Health Review: Valentina Savo	Ch.2	72	1923	72	1924	Table 2.9, in the row of Turkestan: change "50 medicinal plants taxa" into '50 medicinal plant taxa'	Adapted
Health Review: Valentina Savo	Ch.2	72	1923	72	1924	Table 2.9, in the row of Turkestan: change "(Pawera, Verner, Termote, Kandakov, & Karabaev, 2016)" into '(Pawera et al., 2016)	Adapted
Health Review: Valentina Savo	Ch.2	72	1923	72	1924	Table 2.9, in the row of Kyrgyzstan: change "200 medicinal vascular species" into '200 species of medicinal vascular plants'	Adapted

Health Review: Valentina Savo	Ch.2	72	1923	72	1924	Table 2.9, in the row of Uzbekistan: change "600 medicinal vascular species" into '600 species of medicinal vascular plants'	Adapted
Health Review: Valentina Savo	Ch.2	72	1923	72	1924	Table 2.9, in the row of Armenia: change "1700 medicinal plants species" into '1700 medicinal plant species'	Adapted
Health Review: Epameinondas Evergetis	Ch.2	72	1923	72	1924	In Table 2.9, according to the previous comment should be added: Region: Mediterranean Sea Medicinal Species: 1227 Source: Beck, 2011	included
Allan Watt	Ch.2	73	1926	78	2052	These sections, at least 2.2.2.4.2 feel out of place and might be more appropriate within 2.2.3	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
ECA values liaison group	Ch.2	73	1926	76	2016	Section 2.2.2.4.2 "Medicinal plant knowledge" perhaps has a better place in "Health (GQOL 2.3.2)" or in a section on "Education and knowledge" (Q3). As it is, it does not link clearly to the NCP part of the framework. Knowledge on medicinal plants can be used to report on use of medicinal plants, and trends thereof. This would be worthwhile, but the text needs to be rewritten to be better in line with the other sections on NCP status and trends.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gilberto IGREJAS	Ch.2	73	1926	76	2016	"In a warmer world with harsher, more variable weather, plants and animals raised for food will need to have the biological capacity to adapt more quickly than ever before," said FAO Deputy Director-General Maria Helena Semedo. Knowledge of agricultural genetic resources needs to grow more quickly, according to FAO — especially in under-studied sectors such as forests, where fewer than 500 tree species out of a total of over 80,000 have been studied in-depth.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Suzanne Skevington	Ch.2	73	1926		0	Cox, P.A. (2009) Biodiversity and the search for new medicines. In 'Biodiversity Change and Human Health: from ecosystem services to spread of disease'. Eds O.E. Sala, L.A.Meyerson, and C Parmesan: SCOPE 69, Island Press, Washington and London. Chapter 15. ISBN-13 978 1 59726 497	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	73	1927	73	1934	Additional relevant recent publications for 2.2.2.4.2 (Medicinal plant knowledge- Experimental knowledge and Table 2.20) are provided below for your consideration  Marrelli M, Conforti F, Formisano C, Rigano D, Arnold NA, Menichini F, Senatore F. Composition, antibacterial, antioxidant and antiproliferative activities of essential oils from three <i>Origanum</i> species growing wild in Lebanon and Greece. <i>Nat Prod Res.</i> 2016;30(6):735-9. Gómez-Mateos Pérez M, Navarro Moll C, Merino Espinosa G, Valero López A. Evaluation of different Mediterranean essential oils as prophylactic agents in anisakidosis. <i>Pharm Biol.</i> 2017 Dec;55(1):456-461. Nunes R, Pasko P, Tyska-Czochara M, Szweczyk A, Szlosarczyk M, Carvalho IS. Antibacterial, antioxidant and anti-proliferative properties and zinc content of five south Portugal herbs. <i>Pharm Biol.</i> 2017 Dec;55(1):114-123 Formisano C, Sanna C, Ballero M, Chianese G, Sirignano C, Rigano D, Millán E, Muñoz E, Tagliatalela-Scafati O. Anti-inflammatory sesquiterpene lactones from <i>Onopordum illyricum</i> L. (Asteraceae), an Italian medicinal plant. <i>Fitoterapia.</i> 2017 Jan;116:61-65 Zaluski D, Smolarz HD. TLC profiling, nutritional and pharmacological properties of Siberian ginseng ( <i>Eleutherococcus senticosus</i> ) cultivated in Poland. <i>Pak J Pharm Sci.</i> 2016 Sep;29(5):1497-1502 Mekinić IG, Skroza D, Ljubenkov I, Katalinić V. Insight into the Presence of Stilbenes in Medicinal Plants Traditionally Used in Croatian Folk Medicine. <i>Nat Prod Commun.</i> 2016 Jun;11(6):833-5. Frezza C, Venditti A, Di Cecco M, Ciaschetti G, Serafini M, Bianco A. Iridoids and phenylethanoid glycosides from the aerial parts of <i>Ajuga tenorei</i> , an endemic Italian species. <i>Nat Prod Res.</i> 2017 Jan;31(2):218-223. Portincasa P, Bonfrate L, Scribano ML, Kohn A, Caporaso N, Festi D, Campanale MC, Di Rienzo T, Guarino M, Taddia M, Fogli MV, Grimaldi M, Gasbarrini A. Curcumin and Fennel Essential Oil Improve Symptoms and Quality of Life in Patients with Irritable Bowel Syndrome. <i>J Gastrointest Liver Dis.</i> 2016 Jun;25(2):151-7 Duijker G, Bertsis A, Symvoulakis EK, Moschandreass J, Malliaraki N, Derdas SP, Tsikalas GK, Katerinopoulos HE, Pprintsos SA, Sourvinos G, Castanas E, Lionis C. Reporting effectiveness of an extract of three traditional Cretan herbs on upper respiratory tract infection: results from a double-blind randomized controlled trial. <i>J Ethnopharmacol.</i> 2015 Apr 2;163:157-66. Lionis C. Evidence-based innovative therapeutic medicine of Cretan plants: some encouraging specific functions and claims. <i>Hell J Nucl Med.</i> 2015 Sep-Dec;18 Suppl 1:145.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	73	1927	73	1934	There is great number of recent studies and evidence for crocus (saffron), which grows or even cultivated in Europe. It may worth it to be mentioned as paradigm here. Below a few (out of the many) recent publications. Moradzadeh M, Sadeghnia HR, Tabarraei A, Sahebkar A. Anti-tumor effects of crocetin and related molecular targets. <i>J Cell Physiol.</i> 2017 Apr 13. Razavi BM, Hosseinzadeh H. Saffron: a promising natural medicine in the treatment of metabolic syndrome. <i>J Sci Food Agric.</i> 2017 Apr;97(6):1679-1685. Finley JW, Gao S. A Perspective on <i>Crocus sativus</i> L. (Saffron) Constituent Crocin: A Potent Water-Soluble Antioxidant and Potential Therapy for Alzheimer's Disease. <i>J Agric Food Chem.</i> 2017 Feb 8;65(5):1005-1020.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	73	1927	73	1934	Pharmacological use of cannabis, especially in pain treatment is also another highly- researched paradigm Savage SR, Romero-Sandoval A, Schatman M, Wallace M, Fanciullo G, McCarberg B, Ware M. Cannabis in Pain Treatment: Clinical and Research Considerations. <i>J Pain.</i> 2016 Jun;17(6):654-68.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gerard Clarke	Ch.2	73	1927	70	1934	Establishing evidence for medicinal effectiveness of medicinal plants is important. The quality of study design is important here – e.g. were the 16 studies mentioned placebo controlled and blinded?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Suzanne Skevington	Ch.2	73	1927	73	1934	Experimental studies, such as clinical trials of medicines and traditional therapeutic substances, commonly examine placebo and nocebo effects. These effects examine wellbeing (or lack of it) which can be accounted for by the style in which a substance is administered e.g. a doctors enthusiasm for a new drug (Helman,2001) Reference: Helman C.G. (2001) Culture, Health and Illness. Arnold Publishers and Bath Press, Fourth edition: Chapter 8. Culture and pharmacology. ISBN 0 7506 4789 8	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Valentina Savo	Ch.2	73	1928	73	1934	Rewrite the full paragraph. Suggested new text ' Among 64 recent studies (2014 – 2017) about medicinal plants, almost half (28) provided information on their pharmacological activity, chemical or genetic characterization (Table 2.20 in Appendix 2.7.3). Several focused on the pharmacological activity of folk medicinal plants (some examples in Table 2.10). Information on the pharmacological activity can be important for local users: see Table 2.11 for some examples'.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	73	1935	75	1975	Additional relevant literature for 2.2.2.4.2 Medicinal plant knowledge- Traditional medicinal knowledge is given below for your consideration  Bartha SG, Quave CL, Balogh L, Papp N. Ethnoveterinary practices of Covasna County, Transylvania, Romania. J Ethnobiol Ethnomed. 2015 May 6;11:35 Staub PO, Casu L, Leonti M. Back to the roots: A quantitative survey of herbal drugs in Dioscorides' De Materia Medica (ex Matthioli, 1568). Phytomedicine. 2016 Sep 15;23(10):1043-52. Kujawska M, Klepacki P, Luczaj L. Fischer's Plants in folk beliefs and customs: a previously unknown contribution to the ethnobotany of the Polish-Lithuanian-Belarusian borderland. J Ethnobiol Ethnomed. 2017 Mar 23;13(1):20. Mayer M, Zbinden M, Vogl CR, Iivemeyer S, Meier B, Amorena M, Maeschli A, Hamburger M, Walkenhorst M. Swiss ethnoveterinary knowledge on medicinal plants - a within-country comparison of Italian speaking regions with north-western German speaking regions. J Ethnobiol Ethnomed. 2017 Jan 3;13(1):1. Calvo MI, Cavero RY. Medicinal plants used for ophthalmological problems in Navarra (Spain). J Ethnopharmacol. 2016 Aug 22;190:212-8 Rivera D, Verde A, Obón C, Alcaraz F, Moreno C, Egea T, Fajardo J, Palazón JA, Valdés A, Signorini MA, Bruschi P. Is there nothing new under the sun? The influence of herbs and pharmacopoeias on ethnobotanical traditions in Albacete (Spain). J Ethnopharmacol. 2017 Jan 4;195:96-117. Sžukand R, Pieroni A. The importance of a border: Medical, veterinary, and wild food ethnobotany of the Hutsuls living on the Romanian and Ukrainian sides of Bukovina. J Ethnopharmacol. 2016 Jun 5;185:17-40. Valiakos E, Marselos M, Sakellariadis N, Constantinidis T, Skaltsa H. Ethnopharmacological approach to the herbal medicines of the "Elements Alpha to Delta" in Nikolaos Myrepos' Dynameron. Part II. J Ethnopharmacol. 2017 May 10. pii: S0378-8741(17)30318-5 Valiakos E, Marselos M, Sakellariadis N, Constantinidis T, Skaltsa H. Ethnopharmacological approach to the herbal medicines of the "Antidotes" in Nikolaos Myrepos' Dynameron. J Ethnopharmacol. 2015 Apr 2;163:68-82.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	73	1936	73	1939	A paragraph cannot be constituted by a single sentence (which by the way is too long). Suggested new text: 'Traditional medicine is defined here according to the World Health Organisation. Traditional medicine is the body of "knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness."	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	73	1936	73	1939	After these new two sentences I would add another sentence because the paragraph seems incomplete and there is no logical flow to the next paragraph	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	73	1940	73	1942	Change "The importance of biodiversity-derived medicines for population health has been widely reported, with the WHO estimating that 70-80% of the global population depend on some form of traditional or indigenous medicinal knowledge for their primary health care (Ekor, 2014)" into "The importance of traditional medicines has been widely reported, with the WHO estimating that 70-80% of the global population depend on some form of traditional or indigenous medicinal knowledge for their primary health care (Ekor, 2014)"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	73	1945	73	1945	Change "by both written and oral ways" into "through both oral histories and written texts"	Adapted
Health Review: Valentina Savo	Ch.2	73	1945	73	1949	Change "Plant use has formed the basis of European Traditional Medicine since at least the Middle Ages (fifth to fifteenth centuries AD), with more specialised use of plants, such as homeopathy and the extraction of alkaloids, emerging from the nineteenth Century onwards (Allen et al., 2014; Firenzuoli & Gori, 2007; Petrovska, 2012; C. L. Quave, Pardo-De-Santayana, & Pieroni, 2012)" into "Plant use has been at the basis of the European Traditional Medicine since at least the Middle Ages (fifth to fifteenth centuries AD), with more specialised use of plants, such as homeopathy or the extraction of alkaloids, emerging from the nineteenth century onwards (Allen et al., 2014; Firenzuoli & Gori, 2007; Petrovska, 2012; Quave, Pardo-De-Santayana, & Pieroni, 2012)"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	73	1950	73	1952	Change "Central Asian herbalism has been strongly influenced by Greek, Indian and Chinese, later by Arabic traditions (Eisenman et al., 2014)" into "Central Asian herbalism has been initially influenced by the Greek, Indian and Chinese traditions, and later by the Arabic ones (Eisenman et al., 2014)"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	73	1953	73	1958	The few sentences of this paragraph still belong to the previous one	Thanks for the valid suggestion, we will correct this
Health Review: Valentina Savo	Ch.2	73	1955	73	1958	Change "This results in a very rich pharmacopoeias and a profound local knowledge surrounding medicinal plants. Due to the differing traditions the approach towards products of herbal origin is remarkably different from country to country (e.g. (A. Máthé, 2015; Payyappallimana & Subramanian, 2015))" into "These transformations resulted in a very rich pharmacopoeia and a diverse local knowledge about medicinal plants. As a result, the diversity in traditions has led to different approaches towards products of herbal origin in various ECA regions (e.g., Máthé, 2015; Payyappallimana & Subramanian, 2015)."	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	73	1959	73	1965	Suggested new text: 'In literature, a wide diversity of medicinal plant species are taken into account and a wide range of medicinal uses are identified. According to a recent literature search we found many recent studies (2014 – Feb 2017) focusing on traditional medicine, either in new ethnobotanical studies in which traditional medicinal knowledge holders are consulted (Table 2.10) or in review studies (Table 2.11). Several studies suggest that there is need for further ethnobotanical research on traditional medicines. We highlight some key arguments extracted from these studies in Table 2.12.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valeria Negri	Ch.2	73	1959	75	1974	Line 1959: not 25 but 12 papers listed in the tables mentioned below	This was a mistake, the wrong table references are used here; will be corrected
Graciela Rusch	Ch.2	74	1967	74	1967	The kind of conclusions of the different papers are somewhat disparate. Would it be possible to refer to the effectiveness of the treatment or any indicator of curative value? Adding the degree of certainty about the findings would be useful, if possible.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Hanna Skryhan	Ch.2	74	1967	74	1973	delete table 2.10 and table 2.11	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sandra C. Buttigieg	Ch.2	74	1967	74	1974	Natural compounds have been identified as a useful source of bioactive molecules with promising neuroprotective capabilities. In the present report, we investigated whether extracts derived from two ubiquitous Mediterranean plants namely, the prickly pear <i>Opuntia ficus-indica</i> (EOFI) and the brown alga <i>Padina pavonica</i> (EPP) alleviate neurodegenerative phenotypes in yeast ( <i>Saccharomyces cerevisiae</i> ) and fly ( <i>Drosophila melanogaster</i> ) models of AD and PD. Briffa, M., Ghio, S., Neuner, J., Gauci, A. J., Cacciottolo, R., Marchal, C., ... & Cauchi, R. J. (2017). Extracts from two ubiquitous Mediterranean plants ameliorate cellular and animal models of neurodegenerative proteinopathies. <i>Neuroscience Letters</i> , 638, 12-20.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Valentina Savo	Ch.2	74	1967	74	1968	Change "focusing on establishing evidence regarding local traditional medicine" into "focusing on the pharmacological activity of some plants used in local traditional medicine"	This table is now deleted
Health Review: Valentina Savo	Ch.2	74	1968	74	1969	In the line of Bulgaria it seems that a reference is missing	This table is now deleted
Health Review: Valentina Savo	Ch.2	74	1968	74	1969	In the line of Bulgaria: Change "Antiviral potential of n medicinal plants used in folk medicine" into 'Antiviral potential of medicinal plants used in folk medicine'	This table is now deleted
Health Review: Valentina Savo	Ch.2	74	1968	74	1969	In the line of Bulgaria: Change "Inconstant ecological factors lead to variation in content and volume of plant secondary metabolites, pleading for in vitro cultivation of plant species in optimal constant (non-changing) environment" into 'Inconstant ecological factors lead to a variation in content of plant secondary metabolites. The study suggested in vitro cultivation of plant species in optimal constant (non-changing) environment'	This table is now deleted
Health Review: Valentina Savo	Ch.2	74	1968	74	1969	In the line of Mediterranean change the reference into (Galasso et al., 2014)	This table is now deleted
Health Review: Valentina Savo	Ch.2	74	1971	74	1972	Change "Recent (2014 – Feb 2017) studies highlighting different purposes of medicinal plant characterization studies" into 'Recent (2014 – Feb 2017) studies on the various focuses of research on medicinal plants'	This table is now deleted
Health Review: Valentina Savo	Ch.2	74	1971	75	1973	Table 2.11: Change the style of references (Hayta et al., 2014) (Kholina et al., 2014) (Ordak et al., 2016) (Aidarkhanova, Samatova, & Khusainov, 2015)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	74	1971	75	1973	Table 2.11. In the line of Turkey: you cannot copy and past text from an article unless you use quotes	Adapted
Health Review: Valentina Savo	Ch.2	74	1971	75	1973	Table 2.11. In the line of Russia Change "Informative for conservation measures, such as e.g. for genetic resources" into 'Informative for conservation measures (e.g., for genetic resources)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Yelda Guzel	Ch.2	75	1974	75	1975	"Development of new medicines" are not the only argument of 'Güzel, Güzeljemme, & Miski, 2015'. There are arguments on the impact of the rich biodiversity, rich ethnocultural structure and deep historical roots to the ethnomedicinal knowledge.	Adapted
Graciela Rusch	Ch.2	75	1974	75	1974	The issue about property rights in the table (Efferth et al. 2016) on medicinal plants and the commercial use of these species could be brought up into the broader discussion about this NCP.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	75	1974	75	1974	Change "Arguments for ethnobotanical research" into 'Arguments in literature supporting ethnobotanical research'	Adapted
Health Review: Valentina Savo	Ch.2	75	1974	75	1975	Table 2.12: Change "(Menale, De Castro, Cascone, & Muoio, 2016) into (Menale et al., 2016)	Adapted
Health Review: Valentina Savo	Ch.2	75	1974	75	1975	Table 2.12, in the line of Menale et al., 2016: Change "Recovering ancient knowledge is very important for preserving ethno-biodiversity and to discover new entities for a further evaluation of their biological activity" into 'Recording traditional medicinal knowledge is very important for preserving biocultural diversity and to rediscover plant uses that can be interesting for a further evaluation as regards their biological activity'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	75	1974	75	1975	Table 2.21 in the line of Jaric et al., 2015. Change "They warn for over-exploitation, causing some plants to have become exceptionally rare and under threat, leading to the need for their rational use and protection so as to ensure they are still around for future generations" into 'the authors highlight that over-exploitation is causing some plants to have become exceptionally rare and under threat and they advocate for their rational use and protection so as to ensure they are still around for future generations'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	75	1974	75	1975	In the line of Mustafa et al., 2015 Change "From a cultural perspective they point at the potential of cross-cultural ethnobiological for fostering collaboration" into 'From a cultural perspective, they highlight the potential of cross-cultural ethnobiological research fo fostering collaboration'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	75	1974	75	1975	In the line of Pawera et al., 2016 Change "A gap in documentation of traditional knowledge in Kyrgyzstan" into 'Authors highlight a gap in documentation of traditional knowledge in Kyrgyzstan'	Adapted
Health Review: Valentina Savo	Ch.2	75	1974	75	1975	In the line of Efferth et al., 2016 Change "Focus their review on biopirarcy: the use of biological resources and/or knowledge of indigenous tribes or communities without allowing them to share the revenues generated out of economic exploitation or other non-monetary incentives associated with the resource/knowledge. They argue that the patenting of herbs or natural products" into ' Authors focus their review on biopirarcy, which is the use of biological resources and/or knowledge of indigenous tribes or communities without sharing with them the revenues generated from any economic exploitation of the resource/knowledge. They argue that the patenting of herbal or natural products'	Adapted
Health Review: Valentina Savo	Ch.2	75	1976	78		This part is well written and organized, the arguments are important and timely. Minor changes and some comments for develop an argument further. This part pertains the text from page 75 to 78	Thanks
Health Review: Valentina Savo	Ch.2	75	1977	75	1978	Change "In our fast-changing environment, especially related to increasing urbanisation and changing agricultural practices" into 'In our fast-changing environment, resulted especially from an increasing urbanisation and changing agricultural practices'	Adapted
Health Review: Valentina Savo	Ch.2	75	1980	75	1981	Change "(e.g. (C. L. Quave et al., 2012; Sánchez-Mata, María de Cortes, Tardío, 2016) (see also Section 2.2.3.1)" into '(e.g., Quave et al., 2012; Sánchez-Mata, María de Cortes, Tardío, 2016) (see also Section 2.2.3.1)'	Adapted
The Netherlands: Astrid Hilgers	Ch.2	76	1986	76	1993	This paper provides a global-scale overview of demand for medicinal plants: Wolff, S, Schulp, CJE, Kastner, T & Verburg, PH (2017). Quantifying Spatial Variation in Ecosystem Services Demand: A Global Mapping Approach. Ecological Economics, 136, 14-29.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Hanna Skryhan	Ch.2	76	1986	76	2001	to short! It's repetition of the information	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Zorica Popovic	Ch.2	76	1990	76	1993	Reasons cited for this increased attention have included public desire for affordable health remedies, and a perception that "natural" products are somehow safer and more effective than mainstream medicines. Besides, natural products often provide synergistic action of multiple active compounds, contributing to more than one ailment, which is a usually better choice in comparison to a target-specific chemical product (Popović et al. 2016). Popović, Z., Matić, R., Bojović, S., Stefanović, M., Vidaković, V. (2016). Ethnobotany and herbal medicine in modern complementary and alternative medicine: An overview of publications in the field of I&C medicine 2001–2013. Journal of ethnopharmacology, 181, 182-192.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	76	1991	76	1991	Change "(FAO, 2005; Marco Leonti & Verpoorte, 2017)" into (FAO, 2005; Leonti & Verpoorte, 2017)'	Adapted

Health Review: Zorica Popovic	Ch.2	76	1997	76	1998	Migrant populations moving into Europe and Central Asia from other regions have also brought their own traditional knowledge and related medicinal practices with them. Moreover, immigrants often brought particular varieties of common plants, which due to its different origin may significantly differ by the composition and content of secondary metabolites. This also may have a further impact on biodiversity among the native flora.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	76	2000	76	2001	Change "(Andrea Pieroni et al., 2013; C. L. Quave et al., 2012)" into '(Pieroni et al., 2013; Quave et al., 2012).	Adapted
Mark Rounsevell	Ch.2	76	2002	76	2002	A bit too prescriptive?	We do not think so
Health Review: Valentina Savo	Ch.2	76	2004	76	2004	Change "science-based evidence to local and" into "science-based evidence about local and"	Adapted
Mark Rounsevell	Ch.2	76	2007	76	2007	Meaning?	Adapted
Health Review: Zorica Popovic	Ch.2	76	2010	76	2011	This is particularly important for minority groups who may be representative of local or indigenous communities overseas who traditionally rely on medicinal plant species for their primary care, and who may be better adapt in new environment due to implementation of knowledge from the country of origin.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Mark Rounsevell	Ch.2	76	2011	76	2012	"... should be mainstreamed into national public health care systems...": Prescriptive? Re-write as 'if-what' statement, e.g. 'if this were done 'what' would be the benefits.	Adapted
Health Review: Suzanne Skevington	Ch.2	76	2016	76		Relatively little is known about the interactions between prescribed and traditional medicines on psychological and physical health.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
ECA values liaison group	Ch.2	76	2017	78	2052	Section 2.2.2.4.3 "Public Health Perspectives" perhaps has a better place in 'Health (GQOL 2.3.2)' or in a section on 'Education and knowledge' (Q3). As it is, it does not link clearly to the NCP part of the framework. Another suggestion would be to delete the section altogether or integrate it with section on medicinal plant knowledge.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	76	2017	78	2052	Two additional relevant publications for 2.2.2.4.3 Public health perspectives and Table 2.13 are given below for your consideration  Willis C, Sadler-Reeves L, Elviss N, Aird H, Fox A, Kaye M, de Pinna E, Lane C, McLauchlin J. An assessment of the microbiological safety of fresh whole-leaf herbs from retail premises in the United Kingdom with a focus on Salmonella spp. J Appl Microbiol. 2015 Sep;119(3):827-33. Koleva V, Dragoeva A, Stoyanova Z, Koyanova T. A study on current status of herbal utilization in Bulgaria. Part 2: Safety concerns. J Ethnopharmacol. 2016 May 13;183:123-7.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	76	2017	76	2017	Change "2.2.2.4.3 Public health perspectives" into '2.2.2.4.3 Public health perspectives'	Adapted
Health Review: Gilberto IGREIAS	Ch.2	76	2017	78	20152	Economic viability is one of the main critical factors that influence farmers in choosing breeds and crops. In order to safeguard genetic resources, it is necessary to improve the economic benefit farmers can derive from using underutilized species, varieties and breeds. This includes promoting new products and encouraging increasing demand by consumers. Research should continue to engage to further harness scientific and technological developments to advance in genomic and phenotypic characterisation, preferably oriented to detect and evaluate relevant traits associated with, i.a. productivity, robustness, health, welfare, resource utilisation and product quality.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	76	2023	76	2023	Change "Kassam, Karamkhudoeva, Ruelle, & Baumfiek, 2010)" into 'Kassam et al., 2010'	Adapted
Health Review: Valentina Savo	Ch.2	77	2026	77	2026	Add a topic sentence	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Suzanne Skevington	Ch.2	77	2032			'health care strategies' based on cultural beliefs that are not aligned with those of the cultural majority.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	77	2035	77	2038	The same concept and almost the same sentences are repeated few lines above (1997-2001). There is even the same little mistake in the reference style	Adapted
Health Review: Valentina Savo	Ch.2	77	2037	77	2038	Change "(Andrea Pieroni et al., 2013; C. L. Quave et al., 2012)" into '(Pieroni et al., 2013; Quave et al., 2012).	Adapted
Health Review: Valentina Savo	Ch.2	77	2040	77	2043	I would argue that this is not a problem for the new country of residence, since immigrants might plant their favorite plants but they do not gather them in the wild. This is because plants do not grow in the same familiar environment as back home, have different life forms or grow in different conditions that affect the 'medicinal power'. Instead, I would say that the increasing demand (and prices) can lead to over harvesting in the home countries (ie, plants are sent to family members abroad or are commercialized internationally instead of just locally)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Hanna Skryhan	Ch.2	77	2044	78	2052	to replace to Ch.6 (policy instruments)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	77	2044	77	2045	Marketed products also have problems of contamination, adulteration, approximative determination of the content of active principles) there are also cases where different plant parts have quite different contents of active principles (see for the example the case of Kava (see Martin, A.C, Johnston, E., Xing, C. and Hegeman, A.D., 2014. Measuring the chemical and cytotoxic variability of commercially available kava (Piper methysticum G. Forster). PloS one, 9(11), p.e111572.)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	77	2051	78	2052	Table 2.13 in the line of (Dhami & Mishra, 2015) remove "and" from the first line or use a comma instead of a colon	Adapted
Health Review: Valentina Savo	Ch.2	77	2051	78	2052	Table 2.13 in the line of (Calapai, 2008): Add a comma before and after "which may be based on traditional practice"	Adapted
Health Review: Valentina Savo	Ch.2	77	2051	78	2052	Table 2.13 in the line of Chan, 2003; Ekor, 2013. Remove the extra parenthesis	Adapted
ECA values liaison group	Ch.2	78	2054	78	2058	Section 2.2.3 on non-material NCPs will overlap to some extent with Section 2.3 on Good Quality of Life. This is unavoidable and not that problematic. Although a statement about the difference between use and value has been added to 282-285, we would suggest to explain that value and NCP are so strongly intertwined, that certain overlap between them could not be avoided. Note that the statement "For the assessment of an ecosystem service capacity or use we consider only if it is valued, not how it is valued.." has not been followed that consistently in Section 2.2.3, but some other comments will highlight this individually.	this is now addressed in chapter 1 section on value



ECA values liaison group	Ch.2	78	2059	83	2241	The whole section on 'Learning and knowledge generation' is interesting and matches quite nicely with the propose NCP. However, you will have noticed that there is a GQOL category 'education and knowledge' which overlaps strongly but is currently not mentioned in section 2.3. Two different lengthy sections on such overlapping topics seem unnecessary, but please at least mention in section 2.2.3.1 that there is overlap with GQOL and, vice versa, mention in section 2.3 that education and knowledge is covered in section 2.2.3.1. Alternatively, you could consider shortening the section in 2.2.3.1 and moving a part to 2.3 that relates more strongly to GQOL.	section 2.1.1 now expalns the structure of chapter 2 and the relationship between GQOL and NCP
ECA values liaison group	Ch.2	78	2059			The name of this section does not quite match the NCP category. Please consider updating it to 'Learning and Inspiration' or link it to the NCP category, and reflect to what extent 'inspiration' is covered.	section title changed and inspiration is also focussed on in section 2.2.3.2.2 on aesthetic experience
Mark Snethlage	Ch.2	78	2066			suggested additional refs: Gorenflo, L. J., Romaine, S., Mittermeier, R. A., & Walker-Painemilla, K. (2012). Co-occurrence of linguistic and biological diversity in biodiversity hotspots and high biodiversity wilderness areas. Proceedings of the National Academy of Sciences of the United States of America, 109(21), 8032–7. <a href="http://doi.org/10.1073/pnas.1117511109">http://doi.org/10.1073/pnas.1117511109</a> Axelsen, J. B., & Manrubia, S. (2014). River density and landscape roughness are universal determinants of linguistic diversity. Proceedings of the Royal Society of London B: Biological Sciences, 281(1784). Grant, C. (2012). Analogies and links between cultural and biological diversity. Journal of Cultural Heritage Management and Sustainable Development, 2(2), 153–163. <a href="http://doi.org/10.1108/20441261211273644">http://doi.org/10.1108/20441261211273644</a>	Gorenflo added but other two not used due to space constraints and maafi 2005 used instead
Johannes Langemeyer	Ch.2	78	2067	78	2072	Evidence and further explanations needed.	this section has been rewritten and now includes more references as evidence and explanations
Germany	Ch.2	78	2069	78	2072	This information would be useful to include in the SPM (p. 16, ll 410 ff) and link this with the discussion of languages in chapter 2, p. 80, l. 2139-2156	this is mentioned in SPM
Health Review: Malcolm Ward	Ch.2	79	2079	79	2082	UK example of Ecoschools at <a href="http://www.eco-schools.org.uk/">http://www.eco-schools.org.uk/</a>	space prevetned the menion of such case studies and evidence used is from peer reviewed literature
Graciela Rusch	Ch.2	79	2083	79	2088	This paragraph is a bit difficult to follow.	this has been rewritten
ECA values liaison group	Ch.2	79	2083	79	2088	Please remove this section which refers to economic value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	this has been removed from chapter 2. economic value is now covered in section 2.3.5 and other forms of vlau in sections 2.3.1-2.3.4
Mark Rounsevell	Ch.2	79	2113	80	2117	Defined elsewhere, so no need to repeat here	Ok
Mark Snethlage	Ch.2	80	2135			possible additional refs: BABAI D. & MOLNAR ZS. (2013): Multidimensionality and scale in a landscape ethnoecological partitioning of a mountainous landscape (Gyimes, Eastern Carpathians, Romania). Journal of Ethnobiology and Ethnomedicine 9:11. MOLNAR ZS. & BABAI D. (2009): Folk plant knowledge in Gyimes I.:Plant names, folk taxonomy, plant knowledge on individual and community level (in Hungarian). Botanikai Közlemények 96:117-143.	We are adding the suggested references in the supplementary material. Unfortunately we were also requested to edit down the whole chapter, and particularly this section.
Johannes Langemeyer	Ch.2	80	2139	80	2072	An evidence base and explanation on how biodiversity (loss) and linguistic diversity (loss) are related is not given. Suggestive statements like those introduced on this connection might undermine the overall credibility of the assessment.	Now it is completely reworded
Mark Rounsevell	Ch.2	82	2191	82	2192	"...which has usually rewarded those farmers who produced more at the expense of supporting smaller farms...": This was true in the past, but the MacSharry reforms of the mid 1990s reversed this situation with greater 'protection' for smaller farmers and less for large farms. Also the CAP has for a very long time, provided additional payments to Less Favoured Areas, which might also support ILK holders. I'd suggest re-phrasing.	Not applicable in the current version
Graciela Rusch	Ch.2	82	2191	82	2204	Should these issues about policies be dealt with in Ch 6? It would provide a more consistent structure among the different NCPs, because policy instruments are treated in only a few.	Yes, we agree. So we leave this out
Graciela Rusch	Ch.2	82	2211	82	2219	The statements here are a bit unclear.	We delete this pragraph
Germany	Ch.2	83	2229	80	2236	"There is enough evidence about the role of ILK as a reservoir of knowledge for guarantying food security and health in Europe." This sentence needs to be explained more clearly. In how far can ILK guarantee food security and health? In general ILKP is seen as very positive - are there instances of overuse/misuse associated with ILKP in ECA?	We delete this pragraph
Graciela Rusch	Ch.2	83	2229	83	2230	The connection between ILK and food security is unclear. Please, explain this.	We delete this pragraph
ECA values liaison group	Ch.2	83	2229	83	2236	This text on guaranteeing food security and health has some overlaps with Section 2.3, especially with text on relations between NCP and GQOL, and / or text on food security and health. Please reconsider if it should stay here in 2.2.3 or if it can be moved to Section 2.3. It is a great statement with stand-alone value, so it could be moved quite easily.	We delete this pragraph
Johannes Langemeyer	Ch.2	83	2242			I suggest to use a coherent subdivision of this section either along the lines of activities or ecosystems (but not mixed) to avoid repetitions in the text.	We keep the subdivision of activities
ECA values liaison group	Ch.2	83	2242			In the IPBES NCP classification, this NCP is just named Physical and Psychological experiences. Please consider updating the heading to match the NCP category, and throughout the section. Consider to account for this in Table 2.1 (line 289-290) as well.	Suggestion accepted
Health Review: Suzanne Skevington	Ch.2	83	2242			Quality of life is an important psychological experience, yet is not included in this section. Needs to be acknowledged in the introductory para. There is little international empirical evidence to evaluate the relation between biodiversity, health and quality of life (Skevington, 2009), despite good qualitative evidence from cultural case studies. Ref: Skevington S.M. (2009) Quality of life, biodiversity and health: observations and applications. In ' Biodiversity Change and Human Health: from ecosystem services to spread of disease'. Eds O.E. Sala, L.A.Meyerson, and C.Parmesan: SCOPE 69, Island Press, Washington and London. Chapter 15. ISBN-13 978 1 59726 497	Quality of life has a whole section, 2.3. , which includes health and the contributions of this NCP.
Health Review: Malcolm Ward	Ch.2	83	2242	84	2276	Additional evidence at the Natural Resources Wales annual Welsh Outdoor Recreation Survey - <a href="https://naturalresources.wales/evidence-and-data/research-and-reports/welsh-outdoor-recreation-survey/?lang=en">https://naturalresources.wales/evidence-and-data/research-and-reports/welsh-outdoor-recreation-survey/?lang=en</a> with Summary Report for 2016 at: <a href="https://naturalresources.wales/media/681025/welsh-outdoor-recreation-survey-key-facts-for-policy-and-practice-2016.pdf">https://naturalresources.wales/media/681025/welsh-outdoor-recreation-survey-key-facts-for-policy-and-practice-2016.pdf</a>	Thanks for this input...however, we try to cite the scientific literature as it is requested
Finnish Government	Ch.2	83	2243	88	2377	take into account the importance of open access condicions on recreational use of nature	Accessability is already mentioned in this section as a key factor determining the experience of nature
Graciela Rusch	Ch.2	83	2244	83	2244	I suggest to use 'nature-based tourism' instead of ecotourism. In any case, use the same term consistently throughout. In places 'nature' tourism is used.	Suggestion accepted
Health Review: Julie Garnier	Ch.2	83	2253	83	2253	Birding should also be mentioned since it has become the number one hobby in some countries such as UK	We added wildlife tourism (not only birding) in this list
Mark Snethlage	Ch.2	83	2258	83	2265	Although there may be a correlation between areas people prefer for outdoor recreation and nature, a recent study from the UK showed that the nature (biodiversity) value of sites is not what draws the peoples' choices. Hornigold, K., Lake, I., & Dolman, P. (2016). Recreational Use of the Countryside: No Evidence that High Nature Value Enhances a Key Ecosystem Service. PLOS ONE, 11(11), e0165043. <a href="http://doi.org/10.1371/journal.pone.0165043">http://doi.org/10.1371/journal.pone.0165043</a>	Many thanks for this information. We add this reference
Mark Snethlage	Ch.2	83	2258			I miss in the discussion the important sector of wildlife watching, and in particular bird watching which is a booming tourist business. For example, Extremadura has seen the development of a wide range of services (guided tours, bed and breakfast etc) focusing on wildlife watching. Bird watching is only mentioned under the iconic species section, but it is much more than that. Several valuation studies have been done to assess the effect of the return of iconic species on the local economy, through growth in tourism: e.g.: Molloy, D, 2011. Wildlife at work. The economic impact of white-tailed eagles on the Isle of Mull. The RSPB, Sandy. <a href="http://www.rspb.org.uk/images/wildlifeatwork_tcm9-282134.pdf">http://www.rspb.org.uk/images/wildlifeatwork_tcm9-282134.pdf</a> ; Bryden, D.M., Westbrook, S.R., Burns, B., Taylor, W.A., and Anderson, S. 2010. Assessing the economic impacts of nature based tourism in Scotland Scottish Natural Heritage Commissioned Report No. 398. <a href="http://www.snh.gov.uk/docs/B726802.pdf">http://www.snh.gov.uk/docs/B726802.pdf</a>	We added birdwatching in this list and the references recommended by reviewer. We are aware about this service, but we did not find in the review performed a comprehensive assessment of birdwatching for Europe and Central Asia. We are aware about this knowledge gap and we highlight it in the corresponding section of knowledge gaps. We also add new information about the economic values of the NCP in a new section on values.

Johannes Langemeyer	Ch.2	84	2273	84	2276	Is this due to changing behaviour (as suggested) or simply due to the fact that the area considered as PA has increased?	The literature and reports consulted do not give us evidence about a possible cause, so we cannot add the explanation here
Finnish Government	Ch.2	84	2278	84	2278	The figure as AAVR cannot be right considering the populations of Finland and the UK. Furthermore, the very low rates in Finland, and no visitors in the UK in the late 1990's are suspicious.	Although we are confident about the data provided in this figure because we used peer-review papers as a source of information; we decide to remove it .
Finnish Government	Ch.2	85	2285	85	2289	Most of the nature recreation (especially those in table 2.14) in many countries takes place in commercially managed forests (Nordic countries), in meadows and fields, closeby waterways notwithstanding their protection status, or in neighbouring semi-natural environment (forested parks etc.). E.g. Sievänen et al. 2004	Yes, that's right! This is why this is explained earlier in the text. Figure 2.50 only refers to protected areas, but we also highlight the role of these ecosystems in providing recreational services. We have removed the statement about protected areas to avoid any misreading.
IPBES Knowledge and Data Task Force (KD TF)/ Task Group on Indicators (TGI)	Ch.2	85	2291	85		The graph of Percentage of areas covered by protected areas can be replaced to the graph which TGI provided	We add the figure prepare by the knowledge task force
Johannes Langemeyer	Ch.2	86	2296			Double check table. It is not clear what the number in the table mean (Why do they not sum 100 if they are %?)	Following the suggestions of other reviewers and because the wording limitation, we drop this table out.
Allan Watt	Ch.2	86	2296	86	2299	Recreational fishing is given more attention than in the FOD but this table (referring to it only as angling) suggests it is only important in the UK, which is surely wrong. And see lines 2494-2495 for some other data.	Following the suggestions of other reviewers and because the wording limitation, we drop this table out.
Hanna Skryhan	Ch.2	86	2296	86	2299	delete the table! It doesn't have value for the chapter	Suggestion accepted
The Netherlands: Astrid Hilgers	Ch.2	86	2298	86	2299	More data on particularly hunting participation rates can be found in Schulp, CJE, Thullier, W & Verburg, PH (2014). Wild food in Europe: A synthesis of knowledge and data of terrestrial wild food as an ecosystem service. Ecological Economics, 105, 292-305.	Many thanks for this suggestion...as we must shorten the text we did not include this metadata, but some information about participation in hunting is provided
Finnish Government	Ch.2	86	2298	86	2298	Use more recent participation rates for Finland : Sievänen, Tuija; Neuvonen, Marjo (Eds.) 2011. Luonnon virkistyskäyttö 2010. Metlan työraportteja, Working Papers of the Finnish Forest Research Institute 212: 190 s.. Finnish Forest Research Institute, Metsätutkimuslaitos	Following the suggestions of other reviewers and because the wording limitation, we drop this table out.
Health Review: Julie Garnier	Ch.2	86	2298	86	2298	Same as above 95.	Following the suggestions of other reviewers and because the wording limitation, we drop this table out.
Finnish Government	Ch.2	86	2315	86	2315	reword recreation experience increases -> improves	Not applicable in the current version
Johannes Langemeyer	Ch.2	86	2317	87	2318	What about the Black Sea, Caspian Sea and the Eastern Mediterranean?	Not applicable in the current version because the required shorten
Johannes Langemeyer	Ch.2	86	2317	87	2318	More intuitive (and comparable) than monetary values would be amounts of visitors. I assume such numbers could be quite easily be found.	We could not find these numbers for all the countries of the ECA region. Anyway, this is not applicable in the current version.
ECA values liaison group	Ch.2	86	2317	87	2323	Please remove this section which refers to economic value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	Suggestion accepted
Graciela Rusch	Ch.2	87	2324	87	2324	The distinction between different ecosystem types provides good structure to this section. An effort to organize the sections of the other NCP would be desirable. For instance, the section about food provision refers barely to agro-ecosystems and agricultural landscapes. this distinction would also be useful to identify which are the ecosystems that are most important for the generation for each NCP.	Thanks for this comment. However, because we were asked to shorten the text, this section has been merged as we all NCP follow now the same storyline
Finnish Government	Ch.2	87	2325	87	2331	add Finland in this list (Sievänen & Neuvonen 2011)	Because wording limitation, we do not add the specific names of the countries, but just we refer to the subregions.
Finnish Government	Ch.2	87	2325	87	2331	... and in Finland (Sievänen et al. 2004).	Because wording limitation, we do not add the specific names of the countries, but just we refer to the subregions.
Finnish Government	Ch.2	87	2332	87	2335	This is a too far-reaching conclusion on few, geographically limited areas. Preferences are culture dependent, and these conclusions are not valid in countries where conifers are part of the natural species. Furthermore, recreationists usually prefer variance over homogeneity in forest landscape.	We have deleted this paragraph
Finnish Government	Ch.2	87	2338	87	2338	remove word "preserving"	We have deleted this paragraph
Finnish Government	Ch.2	87	2339	87	2339	However, visitors make trade-offs between the different factors in the recreations sites, for example they might accept lower biodiversity level to gain preferred scenery or easier access (Horne et al. 2005). Reference: Horne, P., Boxall, P.C. & Adamowicz, W.L. 2005. Multiple-use management of forest recreation sites: a spatially explicit choice experiment. Forest Ecology and Management 207: 189-199.	We have deleted this paragraph
ECA values liaison group	Ch.2	87	2340	87	2342	Please remove this section which refers to economic value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	Suggestion accepted
Finnish Government	Ch.2	87	2353	87	2355	mysterious expression	We have deleted this paragraph
Johannes Langemeyer	Ch.2	87	2356	88	2370	The section on 'urban systems' (I assume 'urban green and blue spaces' would be a more appriate title) is poorly developed, given that urban green spaces are both in terms of visits and visitors the most important ecosystems for recreational activities at all. Several references are outdated (e.g. Bolund & Hunnhammar, 1999) and wrongly cited (Camps-Calvet et al., 2016). Several reviews on urban ES, including recreation, have not been considered, including: Haase D, Larondelle N, McPhearson T, Schwarz N, Hamstead Z, Kremer P, Langemeyer J, Elmquist T et al. (2014): Quantitative review of urban ecosystem services assessment: Concepts, models and implementation. AMBIO, 43:413-433. DOI 10.1007/s13280-014-0504-0/2014 DOI 10.1007/s13280-014-0504-0 http://link.springer.com/content/pdf/10.1007%2Fs13280-014-0504-0.pdf; & Gómez-Baggethun E, Gren Å, Barton DN, Langemeyer J, McPhearson T, O'Farrell P, Andersson E, Hamstead Z, Kremer P (2013). Urban Ecosystem Services. In Elmqvist T. (Ed.): Urbanization, biodiversity and ecosystem services. Springer Netherlands: 175-251. DOI 10.1007/978-94-007-7088-1_11 http://link.springer.com/content/pdf/10.1007%2F978-94-007-7088-1_11.pdf; GÓMEZ-BAGGETHUN, Erik; BARTON, David N. Classifying and valuing ecosystem services for urban planning. Ecological Economics, 2013, vol. 86, p. 235-245; 21.22. Konijnendijk, C. C., Annerstedt, M., Nielsen, A. B., & Maruthaveeran, S. (2013). Benefits of urban parks: a systematic review. A report for IPFRA. IPFRA; Langemeyer J., Latkowska M.J., Gomez-Baggethun E., Voigt A., Calvet-Mir L., Pourias J., Camps-Calvet M., Orsini F., Breuste J., Artmann M., Jokinen A., Béchet B., Brito da Luz, P., Hursthouse A., Stępień M.P. and Balazsentiene L. (2016). Ecosystem services from urban gardens. In: Bell, S., et al., (Eds.) Urban Allotment Gardens in Europe, Routledge; London, pp. 115-141. ISBN 978-1-138-92109-2 (hbk)	We follow a systematic review for all the NCP with a clear searching string and unfortunately these papers did not appear. Having said this, we were also requested to cut the chapter by half and to reduce this section by 70%. So in the final version we do not go though all the ecosystems, but rather synthesize the information. Some of the references suggested by the reviewer were included in the Supplementary amterial of extra references.
Health Review: James JT Connolly	Ch.2	87	2356	2377	88	This section on the physical and psychological benefits of urban nature may wish to add the evidence of improved mental health (e.g. Triguero-Mas et al. 2015) and child's cognitive development (Davdand et al. 2015).	The links between NCP and health is made in section 3. In section3, we include this information.
Finnish Government	Ch.2	88	2373	88	2375	health, psychological wellbeing and emotional attachment can be also motivations for recreation activities. The hierarchy of motivations is unclear.	Because word limitations and to follow the same storyline than other NCP, this paragraph was deleted
Graciela Rusch	Ch.2	88	2378	88	2378	The contribution of PA to nature-based tourism is mentioned earlier. Suggest to merge to avoid repetition.	Suggestion accepted
Johannes Langemeyer	Ch.2	88	2379	88	2385	this is contradictng figure 2.50	They represent different data, but in order to avoid misunderstandings we delete this sentence.

Johannes Langemeyer	Ch.2	88	2383	88	2402	Mostly redundant with information provided in intro of 2.2.3.2	Agree, and we merge them
Finnish Government	Ch.2	88	2383	88	2383	Mention that in Scandinavia the large amount of complementing areas is the reason for low number of visits in protected areas.	Unfortunately we were also requested to edit down the whole chapter, and particularly this section. So this comment does not apply anymore.
Graciela Rusch	Ch.2	88	2400	88	2400	It could be mentioned that tourism needs to be managed as any other use of nature. High nr of visitors can not only cause physical damage, but also erode the nature-experience in some cases. The literature about Recreational Opportunity Spectrum (ROS) provides some theory about the management of visitor nrns.	We now mention which activities can erode the provision of this NCP. However we did not add new references because we were requested to edit down the whole chapter, particularly this section
Finnish Government	Ch.2	88	2400	88	2400	"recreational use" use "recreational experience" instead	Done
Graciela Rusch	Ch.2	89	2418	89	2418	Hunting is very important in Norway and in Eastern European Countries (e.g. Romania, including international hunting). It would be informative to distinguish between trophy hunting (usually international hunting, important in e.g. Eastern Europe, Romania) from other hunting that encompasses food (mainly own consumption) and recreation - maintenance of culture (Norway, Sweden, Finland). Also, 'photographing - photo safaries' could be mentioned as alternatives to hunting (but related to it). And, this section that refers to hunting and consumption overlaps with provisioning NCP from wild species.	We clarified in the new version that hunting is explained as part of this NCP, although we acknowledge the possibility of being NCP-food. Besides this, we could not address the suggestion because we did not find data that distinguishes between trophy hunting from hunting for food. We did not find papers or statistic about photosafaris either
Johannes Langemeyer	Ch.2	89	2419	89	2419	Why this specific focus on hunting tourism and hunting in general?	We clarified in the new version that hunting is explained as part of this NCP, although we acknowledge the possibility of being NCP-food.
Mark Rounsevell	Ch.2	89	2429	89	2429	Southern Europe is?	Correct
Finnish Government	Ch.2	90	2419	90	2422	This paragraph of hunting tourism should not start the chapter, as tourism is a minor part of hunting which is mainly conducted by local people as part of their culture.	Now this is corrected
Jean-Pierre Arnauduc	Ch.2	90	2442	90	2443	In France, hunters are not usually farmers: <a href="http://chasse.bipe.fr/#/Portrait">http://chasse.bipe.fr/#/Portrait</a>	Not applicable in the current version because the required shorten
Johannes Langemeyer	Ch.2	90	2444	90	2447	Can you really separate hunting for meat from hunting for recreation (I assume mixed motivations are prevailing), thus rather speak of 'main motivation'	We clarified in the new version that hunting is explained as part of this NCP, although we acknowledge the possibility of being NCP-food. Besides this, we could not address the suggestion because we did not find data that distinguishes between trophy hunting from hunting for food.
Finnish Government	Ch.2	90	2446	90	2446	add "mainly"	Not applicable in the current version because the required shorten
Jean-Pierre Arnauduc	Ch.2	90	2458	90	2459	In France, the economic value of hunting is €3.89 Billiards : <a href="http://chasse.bipe.fr/#/ChiffresCles">http://chasse.bipe.fr/#/ChiffresCles</a>	Not applicable in the current version because we were required to build a new section on values and do not add values here
ECA values liaison group	Ch.2	90	2458	90	2459	Please consider removing this sentence which refers to economic value and suggest it as an addition to the authors of Section 2.3.5. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	Done
Finnish Government	Ch.2	90	2461	90	2463	... and in Finland (Nygård & Uthardt 2011). Mikael Nygård & Lorenz Uthardt, 2011. Opportunity or threat? Finnish hunters' attitudes to hunting tourism. Journal of Sustainable Tourism, Volume 19:383-401.	We are adding the suggested references in the supplementary material. Unfortunately we were also requested to edit down the whole chapter, and particularly this section.
Hanna Skryhan	Ch.2	90	2473	90	2473	add the information about EE in the paragraph	We could not find statistics about EE for hunting. However, this is not applicable in the current version because we were required to shorten
Graciela Rusch	Ch.2	91	2485	91	2485	Remove 'recreational' at the start.	Not applicable anymore
Hanna Skryhan	Ch.2	91	2485	92	2519	information about EE & CA is totally missing!	We could not find statistics about EE & CA for fishing. However, this is not applicable in the current version because we were required to shorten
Finnish Government	Ch.2	91	2496	91	2497	satisfaction from the fishing...	Not applicable in the current version because the required shorten
Finnish Government	Ch.2	91	2501	92	2502	Recreation fishing (e.g. angling) does not demand travel infrastructure (like roads?) and if it does it is not missing from the other parts of the continent. !	Not applicable in the current version because the required shorten
Mark Rounsevell	Ch.2	92	2505	92	2519	Could these data be tabulated?	We drop this information out because the shorten required
ECA values liaison group	Ch.2	92	2505	92	2519	Please remove this section which refers to economic value and suggest it as an addition to the authors of Section 2.3.5 or make it less about 'economy' and more about NCP use. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP. Finally, the valuation method is not always clearly mentioned.	Done
Finnish Government	Ch.2	92	2512	93	2549	you need to recognize that big part of the mushroom yield, especially in Eastern Europe, do not enter into markets, statistics do not provide accurate picture	Not applicable in the current version because the required shorten
Mark Rounsevell	Ch.2	92	2520	92	2520	Compare this section with the relevant section on material NCPs to avoid overlap?	We clarified in the new version that hunting and this content is explained as part of this NCP, although we acknowledge the possibility of being NCP-food.
Graciela Rusch	Ch.2	92	2520	92	2520	Some of this information overlaps with provisioning services, merge / cross-reference, avoid repetition.	We clarified in the new version that hunting and this content is explained as part of this NCP, although we acknowledge the possibility of being NCP-food.
Johannes Langemeyer	Ch.2	92	2529	93	2549	Numbers for Western Europe only seem to include Italy (from what the text states), the numbers seem in general to be little credible. Differences seem much better explained by lacking reporting/available data.	Not applicable in the current version because the required shorten
Health Review: Daniela Haluza	Ch.2	92	2533			The term "connectedness of people with nature" is cited. I would suggest that connectedness to nature should also be included in the section on	The section suggested is not provided in the comment.
ECA values liaison group	Ch.2	92	2543	93	2545	Please remove in this sentence the reference to economic value and suggest it as an addition to the authors of Section 2.3.5, and delete it in Figure 2.53 as well. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP.	Done
Mark Snethlage	Ch.2	93	2250			wild food gathering is a recent and trendy development, also among urban dwellers: UK: <a href="http://www.wildfoodschool.co.uk/">http://www.wildfoodschool.co.uk/</a> ; <a href="http://www.wildfooduk.com/">http://www.wildfooduk.com/</a> ; <a href="https://www.eatweeds.co.uk/">https://www.eatweeds.co.uk/</a> ; <a href="http://www.wildaboutfood.co.uk/">http://www.wildaboutfood.co.uk/</a> ; <a href="https://www.foragingcourses.com/">https://www.foragingcourses.com/</a> ; France: <a href="http://www.sauvages-et-comestibles.org/">http://www.sauvages-et-comestibles.org/</a> ; <a href="http://plantessauvagescomestibles.com/">http://plantessauvagescomestibles.com/</a> ; Austria: <a href="http://www.essbarewildpflanzen.at/">http://www.essbarewildpflanzen.at/</a> ; numerous books in german language: <a href="http://www.buchhaus.ch/result?bpmquery=Essbare%20Wildpflanzen">http://www.buchhaus.ch/result?bpmquery=Essbare%20Wildpflanzen</a> etc	Many thanks for this information, however due to the edition down required, this is not applicable anymore. But many thanks!

Graciela Rusch	Ch.2	93	2544	93		As above, these sections seem to fit better under provisioning services, since also the economic value is presented.	We clarified in the new version that this content is explained as part of this NCP, although we acknowledge the possibility of being NCP-food or material
Mark Rounsevell	Ch.2	93	2550	93	2550	Again, try to avoid overlap with the material NCP section on this topic	We clarified in the new version that this content is explained as part of this NCP, although we acknowledge the possibility of being NCP-food or material
Finnish Government	Ch.2	93	2550	93		You need to mention everyone's right in Scandinavian countries and Finland that allow picking berries	Not applicable in the current version because the required shorten
Finnish Government	Ch.2	93	2555	93	2558	You need to find references showing the trend for wild foods	We could not find anything else, but as mentioned often we could not expand more due to the required shorten of the text
ECA values liaison group	Ch.2	93	2569	93	2572	Please remove in this sentence the reference to economic value and suggest it as an addition to the authors of Section 2.3.5, and delete it in Figure 2.53 as well. Because it is not a measure of the status and trend of NCP capacity or use, it is out of context in Section 2.2 and overlaps with information covered in Section 2.3.5 (Valuing NCP). Moreover, other value types (health, diversity & options, security etc.) are not being referred to in this section either, which implies that IPBES / Chapter 2 puts uses economic value as the sole measure of importance of the NCP.	Done
Finnish Government	Ch.2	94	2583	94	2584	The taste and nutritional value of wild berries is highly appreciated in Nordic countries - the picking is not only for recreational purposes.	We clarified in the new version that this content is explained as part of this NCP, although we acknowledge the possibility of being NCP-food or material
Graciela Rusch	Ch.2	94	2585	94	2585	Here medicinal plants are mentioned too, as in section above. Could some of these sections be revised to avoid repetition?	Done
Mark Rounsevell	Ch.2	94	2597	94	2597	"traditional" instead of "typical"?	Not applicable in the current version because the required shorten
Johannes Langemeyer	Ch.2	94	2601			The message of the graphs (and why they have been included) is not clear.	We delete this figure in the new version
Finnish Government	Ch.2	94	2601	94	2604	Index is unclear	We delete this figure in the new version
Johannes Langemeyer	Ch.2	94	2605			Consider upgrading this section making it a stand-alone subsection of 2.2.3	We follow the classification of NCP approved by all the governments in a IPBES plenary. This is why it cannot stand alone as a NCP
Graciela Rusch	Ch.2	94	2605	94	2605	Other services are also generated at the landscape scales (landscape physical features are important for their delivery); these include for instance pollination and pest control by natural enemies. It would be good to make this distinction under these services too.	The effect of land-uses and landscapes were included when appropriate across NCP
Health Review: Suzanne Skevington	Ch.2	95	2038			Suggest insert a subheading 'Quality of Life' commensurate with the opening statement on page 1 that Good QoL is central to this area. ALL subsections should review evidence on Quality of Life (where available), or where necessary, note that good evidence is missing. Until recently, good indicators to assess all the important dimensions of QoL relevant to this field have not been widely available.	Quality of Life has its own section 2.3. and due to the required shorten of the whole chapter we refer to it mostly in section 2.3.
Graciela Rusch	Ch.2	95	2612	95	2612	Recent work by Tenerelli et al. 2016 could be cited also (using photoseries techniques).	We are adding the suggested references in the supplementary material. Unfortunately we were also requested to edit down the whole chapter, and particularly this section.
Finnish Government	Ch.2	95	2642	95	2650	Take into account the seasonal effects : Tyrväinen et al. Scandinavian Journal of Forest Research Vol. 32 , iss. 4,2017	Not applicable in the current version because the required shorten
Finnish Government	Ch.2	95	2642	95	2642	Scandinavian countries exclude Finland, Fenno-Scandinavian countries or Nordic countries include her. The authors should check which region they are referring to not only in this sentence, but in many previous ones as well.	Not applicable in the current version because the required shorten
Finnish Government	Ch.2	96	2658	96		Grazing activities, i.e. cattle in the landscape increase the landscape values. Grammatikopoulou, J., Pouta, E., Salmivirta, M. & Soini, K. 2012. Heterogeneous preferences for agricultural landscape improvements in southern Finland. Landscape and Urban Planning, 107: 181–191.	We are adding the suggested references in the supplementary material. Unfortunately we were also requested to edit down the whole chapter, and particularly this section.
ECA values liaison group	Ch.2	97	2719	97	2720	'Symbolic meaning of life' is perhaps the only NCP category in Section 2.2 that does not really feature in the IPBES NCP classification anymore. Either explain why this NCP was included, or consider including 'Existence of species and ecosystems' and 'Spiritual and religious experience'	This title is indeed from an old version of the NCP categories. The whole section has been reduced to a great extent and has been moved under the 'Cultural heritage, identity and stewardship' section in the final draft (2.3.3)
ECA values liaison group	Ch.2	97	2720			The whole section on 'Spiritual and religious experiences' overlaps strongly with the GQOL category 'spirituality and religions', which is currently not mentioned in section 2.3. Two different lengthy sections on such overlapping topics seem unnecessary, but please at least mention in section 2.2.3.3.1 that there is overlap with GQOL and, vice versa, mention in section 2.3 that spirituality and religions are covered in section 2.2.3.3.1. Alternatively, you could consider shortening the section in 2.2.3.1 and moving a part to 2.3 that relates more strongly to GQOL.	The whole section has now moved to the QoL section under 2.3.3
ECA values liaison group	Ch.2	97	2720			Spiritual and religious experience now seems to fit better in section 2.3, because it coincides with the 'new' category in QoL called 'spirituality and religions'. So far it has seemed difficult to present this as an NCP, perhaps it will be better off in a section on Quality of Life?	The whole section has now moved to the QoL section under 2.3.3
ECA values liaison group	Ch.2	97	2721	97	2778	This introductory text could also serve well in Section 2.3 as a heading on spirituality and religions. It does not really cover status and trends of the NCP, but frames and explains in a very useful way how spirituality and religions can relate to nature.	Thank you for the suggestion; it has been used in that section.
Health Review: Suzanne Skevington	Ch.2	97	2722			2005'. Good spiritual quality of life can be a potent outcome (Skevington, 2009)	Due to the limited space, this section has been removed from the final chapter structure thus it is no longer possible to add references here.
ECA values liaison group	Ch.2	98	2754	98	2758	Please remove or suggest it as an addition to the authors of Section 2.3.2 on Health. Because it is not a measure of the status and trend of NCP capacity or use, it is also of much use in Section 2.3 (health or relation NCP - GQOL).	Text has been removed
Finnish Government	Ch.2	99	2772	99	2773	Also Horne 2008. Reference: Horne, P. 2008. Use of Choice Experiments in Assessing the Role of Policy Instruments in Social Acceptability of Forest Biodiversity Conservation in Southern Finland. In Birol, E. & Koundouri, P. (eds.) Choice Experiments Informing Environmental Policy A European Perspective. Edward Elgar Publishing.	Thank you for the reference suggestion. Due to the limited space, this section has been removed from the final chapter structure.
Health Review: Suzanne Skevington	Ch.2	99	2778			Needs a statement here about the need for more empirical evidence on spiritual QoL.	Due to the limited space, this section has been removed from the final chapter structure.
Johannes Langemeyer	Ch.2	99	2783	99	2789	I would not necessarily speak of 'underexplored'. Several historical reasons (mainly the enlightenment) explain very well why spiritual and religious links are less important for large parts of Central European societies. I would agree that this cultural background partly facilitated over-uses of natural resources, but as explained elsewhere in this chapter many cultural-natural sights in Western Europe are nowadays formally recognized and protected (the assessment of historical and cultural values is also included in the EU-EIA legislation).	Due to the limited space, this section has been removed from the final chapter structure.
Health Review: Julie Garnier	Ch.2	99	2789	99	2789	The lack of exploration between cultural and natural diversity in Western Europe is worth being emphasized as it has been explored worldwide and the overlap is significant. This places local and indigenous communities at the forefront of protecting such diversity.	Due to the limited space, this section has been removed from the final chapter structure.
Graciela Rusch	Ch.2	100	2827	100	2827	It would be informative to include other biophysical indicator for 'existence value' than protected areas. Habitat provision for native biodiversity and the problems associated with habitat degradation are important questions to take up. Further, this is relevant for the discussion of flows of services because some of the iconic species in Europe (the large 5) migrate, and usually require large areas. Also existence value could be attributed by urban dwellers or people not coexisting with the animals, but the service is generated by those who live close to them.	We are grateful for the comment. Given that Ch. 3 will do a biodiversity assessment, and that indicator choice for the assessment of this NCP has been decided earlier in the process, we decided not to use additional indicators. The aspect of migratory species is currently understudied, but referenced (Lopez-Hoffman et al. 2010).
ECA values liaison group	Ch.2	100	2827			Please consider referring to relevant aspects of Good Quality of Life in the introductory text of 'Existence of Species and Ecosystems'. This element would mostly be 'Living well in harmony with nature' (not covered in 2.3)	We made a short reference to increased quality of life.

Germany	Ch.2	100	2828	100	2828	NCP supporting identities - how does this relate to the IPBES framework and/or chapter 1	This is part of the NCP classification, agreed upon by IPBES. The classification is provided and explained in Chapter 1.
Lisa P. Sousa	Ch.2	101	2850	101	2853	Figure 2.55 - It is difficult to identify protected areas in Western and Central Europe so maybe the map size should be increased	In order to show the whole ECA we want to keep the current map size. Western and Central Europe have indeed a relatively low amount of areas.
Mark Rounsevell	Ch.2	101	2854	101	2855	Perhaps represent as a bar chart to better visualise the data?	We decided to keep the table, as we were asked to add totals.
Hanna Skryhan	Ch.2	101	2854	101	2856	add the column "Total area"	We added this.
Mark Snethlage	Ch.2	102	2862			Iconic species in Europe that attract interest from the wider public to see include: cetaceans (whale watching in the Azores, Iceland, Bay of Biscay etc), vultures (Gorges du Tarn, France <a href="http://vautours-lozere.com/defaultgb.htm">http://vautours-lozere.com/defaultgb.htm</a> ), European Bison (Bialowieza), Brown Bear (Romania, Finland), Wolf (Spain), Red Deer, etc	For the assessment we built systematic literature search. No literature is suggested here. Several of the suggested species are already included in the text.
Finnish Government	Ch.2	102	2888	102	2920	Summary of existence values is very limited.	This comment referred to a section on an indicator for this NCP, not specifically existence value.
ECA values liaison group	Ch.2	103	2937	104	2952	This section deals with the consequences of interregional flows NCPs, which is much needed and highly interesting. The suggestion is to clearly separate and structure the effects into effects on Nature (ecosystems & biodiversity), on NCPs, and finally and especially 'Good quality of life'. The only aspects of GQOL that are now mentioned are distributional equity and lower costs of food. We are aware that this section is on interregional flows of NCPs, but nevertheless suggest to touch upon consequences for some GQOL categories (sensu Pascual et al. 2017), especially: Diversity & options, Security and livelihoods (among others: political stability, FEW security), living well in harmony with nature.	The reference to distributional equity and to food security should be sufficient here.
Mark Snethlage	Ch.2	103	2938			additional ref: Meyfroidt, P., Lambin, E. F., & Hertel, T. W. (2013). Globalization of land use: distant drivers of land change and geographic displacement of land use. Current Opinion in Environmental Sustainability, 5(5), 438-444. <a href="http://doi.org/10.1016/j.cosust.2013.04.003">http://doi.org/10.1016/j.cosust.2013.04.003</a>	We decided to stick to references with empirical focus.
Johannes Langemeyer	Ch.2	104	2953	104	2973	Which of the previously described ES are considered in EFP? Is this a scientifically sound indicator? Consider common critiques on EFP and evaluate if this indicator is appropriate for this type of assessment.	The ES considered in the Ecological Footprint are described in the section. We have considered and are aware of the critique on the method. Within the assessment there is no space for a method critique. We are of the opinion that the indicator can be used for this purpose.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	Ch.2	104	2964	105	2971	Using NFA 2015 in data year 2011: per capita values look correct, but I count 52 countries in this aggregation. Same with western and central Europe – I count 40 countries in this aggregation.  If you want to update with NFA 2016 in data year 2012: The Europe and Central Asia region have a per capita footprint of 4.5 gha/person and per capita biocapacity of 2.9 gha/person (calculations based on 52 countries). For western and central Europe (data for 40 countries) the per capita footprint is 4.6 gha/person, while per capita biocapacity is 2.2 gha/person. For eastern Europe (7 countries) the per capita footprint is 4.7 gha/person (5.2 gha/person biocapacity per capita). For central asia (5 countries), the footprint was 3.2 gha/person while per capita biocapacity was 1.7.  (Note: increases can be attributed to change in carbon footprint methodology from NFA 2015 to NFA 2016)	ECA has 54 countries, for 7 EF data is missing, this makes 47 countries as the basis for the calculations
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	Ch.2	104	2964	105	2971	Values used here are outdated and could be updated/replaced with the values up to 2012 that have been provided to IPBES for these reports.	Values have been updated with the 2017 edition of the national footprint accounts.
Johannes Langemeyer	Ch.2	104	2968	104	2973	Are EFP and biocapacity based on the same indicators? If not, it is very questionable to compare them as done here.	Yes, according to the methodology they are meant for these purposes.
Johannes Langemeyer	Ch.2	104	2971	104	2973	How does this relate to the flow between regions (2.2.4)? What is the consequence of having a reserve in terms of biocapacity, are those countries encouraged to use more?	We added a sentence that a negative balance between biocapacity and EF can be ascribed to interregional flows.
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	Ch.2	105	2974			Please amend the figure caption to indicate that results are expressed in gha per person. Also, according to which criteria is Israel included in the map?	Caption was amended accordingly. Israel is part of Western Europe in the IPBES regions.
Mark Snethlage	Ch.2	105	2980			suggested map: Imhoff, M.L., L. Bounoua, T. Ricketts, C. Loucks, R. Harris, and W.T. Lawrence. 2004. HANPP Collection: Human Appropriation of Net Primary Productivity as a Percentage of Net Primary Productivity. Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). <a href="http://dx.doi.org/10.7927/H4W66HPJ">http://dx.doi.org/10.7927/H4W66HPJ</a> . (Old data though)	We decided not to include a map of HANPP per se, as this section is about interregional flows of ES, not about the appropriation per se
Graciela Rusch	Ch.2	105	2986	105	2986	Is it correct to say that HANPP is 'imported' by Europe?	Changed to "embodied HANPP"
Mark Rounsevell	Ch.2	106	2988	106	2989	Ch1 is currently using the same figure, so we might need to agree on where it appears. No need for 2 appearances.	to be discussed with CH: 1
Johannes Langemeyer	Ch.2	106	2989			(Sub-)regional boundaries established for this chapter are not respected in the graph which makes it a bit misfitting. Could this be adapted.	This can unfortunately not be re-drawn based on the original data. We had to rely on published literature.
Johannes Langemeyer	Ch.2	106	2994	106	2994	Since the section is mainly focussing on the flow between sub-regions it is confusing to include here national accounts (which might also include flows within the same subregion).	This was deleted as there was enough large scale evidence.
Graciela Rusch	Ch.2	109	3037	109	3040	This paragraph could be linked to the section about wood fuels and the importance of carbon storage in reducing CO2 emissions.	The focus of this section was more on the interregional flows, a link to other sections could, also given word limits, not be established.
Health Review: Julie Garnier	Ch.2	109	3039	109	3039	I think that there is a CRUCIAL point to highlight: low-income countries and the most vulnerable and deprived societies are the ones bearing the most impact from climate change. Even though Europe has reduced its GHG emissions, the impact of CC is increasingly unbearable for the ones at the frontline of biodiversity conservation, despite their vital role as custodians of ecosystems upon which climate change mitigation largely depends.	This is a valid point, but it could, given word limit, not be addressed in this section, which focuses on interregional flows of ES (and not the equity consequences) - in turn, for the equity section no literature was found that specifically pointed to this issue.
Lisa P. Sousa	Ch.2	109	3041	113	3130	It could be interesting to compare the relative proportion of studies on marine and terrestrial ecosystem services	We agree, but unfortunately when we extract data from the revised papers, we did not do this analysis and now we couldn't go back to the thousands of papers revised
Mark Rounsevell	Ch.2	109	3048	109	3048	"...should be taken into account...": Through the confidence language.	Not applicable in the current version because the required shorten
Mark Rounsevell	Ch.2	110	3082	110	3084	I like the way these data are presented in this figure. But, I'm struggling to discern the differences between the colours. Could a different color scheme be used that's more contrasting? Plus, also best to avoid red-green combinations for the colour blind.	We worked this figure with the graphics designers of IPBES
Germany	Ch.2	113	3132	113	3132	Please add the criteria, that were used to structure the "semi-structured" literature review	Elements are referred to in Section 2.2. and full details are in the Appendix
Graciela Rusch	Ch.2	113	3135	113	3135	LULCC a driver of change? Please, revise. Land - use change maybe?	Kept as LULCC to be consistent with other parts of the assessment
Graciela Rusch	Ch.2	113	3135	113	3135	IT would be good to indicate the degree of uncertainty that both the scenarios and the predictions have.	Scenario uncertainty is dealt with in Chapter 1. It is difficult to deal with Prediction uncertainty, as this is (often) not covered in the papers reviewed. Some indication is given by use of alternative scenarios where possible

Germany	Ch.2	113	3137	113	3177	While climate change was identified as the most frequently mentioned driver based on the literature reviews, this does not necessarily imply that it is the most important in terms of impacts on NCPs. Please explain why you focus here only on IPCC scenarios? Chapter 4 provides an indepth assessment of direct and indirect drivers, making much more drivers than climate change evident. Also, chapter 4 explicitly covers future trends for these drivers. Please make sure that this is mentioned and well linked.	As we were extracting information from papers we could only use what authors had used which was entirely IPCC scenarios for climate change. Links to Chapter 4 are included, as well as the reason for the focus on climate and LULCC change.
Mark Sneath	Ch.2	113	3138			possible map: Climate Effects on Food Supply Projected % Change in Wheat Yield, under various SRES (2050) data download: <a href="http://sedac.ciesin.columbia.edu/data/collection/crop-climate/maps/gallery/search/">http://sedac.ciesin.columbia.edu/data/collection/crop-climate/maps/gallery/search/</a> ; Projected % Change in Wheat Yield, under various SRES (2020) data download: <a href="http://sedac.ciesin.columbia.edu/data/collection/crop-climate/maps/gallery/search/">http://sedac.ciesin.columbia.edu/data/collection/crop-climate/maps/gallery/search/</a>	Thank you for this suggestion. We decided to use similar maps but from Nelson et al. 2009;2010
Germany	Ch.2	113	3147	113	3149	while there are projected increases and mixed response, the per capita availability might decline ---> this does not sound convincing. If there are increases and mixed responses, overall it still declines?	These responses refer to different crops and for most regions there is a greater dependence on wheat, hence as a broad generalisation across ECA there is an overall decrease in daily calories available.
Mark Sneath	Ch.2	113	3161			"In Finland, for example, forest stand models calculate that under an IPCC SRES B2 scenario pine growth in southern Finland could increase by 16% and in Lapland by 31%, while under a higher (A2) scenario these figures were 40% and 80% respectively (Forsius et al., 2013)." Compare this with (Chapter 2, page 47, line 1304): "In an extreme scenario, large regions of the boreal forests could, by the end of the century, shift to a drier climate with lands normally occupied by the woodland/shrubland biome. Under a warming climate, it is likely that fire frequency and severity will increase (Keywood et al. 2013)."	This a consequence of different scenarios (Extreme possibly A1F1, as opposed to A2) and different models and slightly different time periods. I agree that fire frequency and severity could increase and this has been flagged.
Mette Skern-Mauritzen	Ch.2	114	3170	114	3171	It should be noted that the climate envelope model by Cheung et al is a simplistic prediction model, not taking into account key mechanisms. For instance, in high latitude systems light is a key factor, with onset of spring bloom and with winter dark. The light conditions will not change with climate.	Thanks for this comments which has been noted.
Graciela Rusch	Ch.2	115	3202	115	3206	IT would be good to refer to these statements in the section about Bio-fuel production. Because, indeed, the extraction of forest products as biofuel, will take in some regions (e.g. the Nordic countries) about 90 years to recover (above ground and root biomass). Since building of soil carbon is estimated to take around 5 000 yr, the loss of soil carbon associated with the process of woodfuel extraction should be estimated to recover in this time lag.	A new section on biofuel/wood energy production has been added which hopefully deals with this.
Graciela Rusch	Ch.2	115	3202	115	3217	It would be good to distinguish clearly in the scenario analysis what are impacts of management from those unavoidable drivers of change. Because management can be changed, and opinions can be highlighted. Also, link the issue of policies as potential for impacting management (should be the aim of policies?)	This example was just looking at changes in management and other drivers of change were not included explicitly. The effects of policy are dealt with at the end of the section.
Hanna Skryhan	Ch.2	115	3212	115	3221	delete or replace to Ch.5	This has been kept as it shows how different management scenarios impact on different components of an NCP and on two NCP
Graciela Rusch	Ch.2	116	3250	116	3250	Could this analysis be structured around the specific NCP? (e.g. water quality, water amount, flood control, etc)?	This has been done
Graciela Rusch	Ch.2	116	3258	116	3258	This statement is very general. IN which sense, and which 'future environmental change'?	This has been rewritten and this section removed as it is not about the NCP itself
Finnish Government	Ch.2	118	3303	118	3328	The chapter 2.2.6.3 is unorganized and the line of thought is missing, redundant examples	This has been rewritten
Graciela Rusch	Ch.2	118	3315	118	3322	These examples show that the evidence is very fragmented. See my comment at the start. Could some general statements be made about these services. Regarding green infrastructure in urban areas there is considerable literature to review also. Any reviews to refer to rather than more case-study base?	A comment has been made at the start that
Finnish Government	Ch.2	118	3319	118	3319	"mental recreation" term is established	This term has now been removed
Finnish Government	Ch.2	118	3322	118	3322	You may want to discuss about equality of the effects in 2.2.6.3 : 36. Pouta, E., Neuvonen, M. & Sievan, T. 2009. Participation in Cross-country Skiing in Finland under Climate Change: Application of Multiple Hierarchy Stratification Perspective. Journal of Leisure Research 41 (1), pp. 87-104.	Thank you. As we revised this section there was not room to include your suggestion.
Health Review: Bryan W. Brooks	Ch.2	119	1	164	4936	Thank you for the opportunity to review and comment on the health section of chapter 2. I applaud the authors for developing an interesting draft with transdisciplinary perspectives on NCPs. As the document currently stands, a number of interconnected topics are not well integrated. These appear as stand alone topics, yet they clearly are not. This section of chapter two would benefit from more synthetic treatment across some of the key subject areas. For example, as noted in eh report, environmental pollution was identified as a human health concern by 55% of ECA, yet pollution in general received short shrift in this report, likely due to the authors expertise. I have made some comments below to hopefully facilitate such an effort, which would strengthen this document.	section 2.3 has been redrafted to create more interconnection between topics. Pollution is now mentioned 4 times in the executive summary and is extensively considered in the sections on air and water quality
Health Review: Suzanne Skevington	Ch.2	119	3332	133	3848	Many researchers in the quality of life field would say that a substantial part of this section (2.3.2) is not about Quality of Life (which is a subjective experience) but about Standard of Living. Suggest change the title	section 2.3 has been redrafted to focus more on quality of life and section headings reflect the guidance for IPBES assessments
Health Review: Suzanne Skevington	Ch.2	119	3332	133		No review of Quality of Life or Wellbeing (MDGs) in relation to biodiversity and/or health	biodiversity and health is now discussed extensively in a revised section 2.3.2 on contributions to physical, mental and social dimension of health
ECA values liaison group	Ch.2	119	3334			In this introduction to GQOL, please consider explaining that certain aspects of GQOL (sensu Pascual et al. 2017) have not been covered, and the reasons for this. Reasons include overlap with non-material NCPs and other ones, plus that the aspects had not been in focus during the ECA.	this is now covered in section 1.5.2 and 2.1.1
Finnish Government	Ch.2	119	3340	119	3344	The concept of "relational values" is not well established. Needs to be introduced more profoundly if used in essential role.	this is covered in section 1.5.2 in the introductory chapter
Dan Faith	Ch.2	119	3344			reference is made to diversity of future options – but where is the discussion of this, especially with ref to ncp18?	this is now covered in section 2.2.3.4 on maintenance of options
Health Review: Bryan W. Brooks	Ch.2	119	3345			It was encouraging to see the Food-Energy-Water nexus given attention. Certainly this represents a global megatrend that must be examined. This section, however, like much of the FEW work, fails to examine the environmental quality and ecosystem integrity interfaces and implications of divergent FEW management scenarios. It also fails to identify the importance of green/circular economy, sustainable and green chemistry and engineering as ways to reduced disease burden while fueling innovation. Sustainable molecular design of chemicals for reduce hazard represents a transformational approach to address the environmental pollution and health implications of such exposures. I recommend Coish et al 2016: <a href="http://pubs.acs.org/doi/abs/10.1021/acsschemeng.6b02089?src=rcsyz&amp;journalCode=asceq">http://pubs.acs.org/doi/abs/10.1021/acsschemeng.6b02089?src=rcsyz&amp;journalCode=asceq</a>	In the sub-sections on security, an introduction will highlight which NCPs contribute to each security objective. The part of the comment on implications of different management scenarios is about solutions which is in principle a topic for chapter 6 unless it is decided that NBS are part of chapter 2
Mark Rounsevell	Ch.2	119	3354	119	3354	An increasing problem is overeating and obesity, as well as food waste. Are you able to cover this issue at all: The following paper might be useful for this: Alexander, P. et al. (2017). Losses, inefficiencies and waste in the global food system. Agricultural Systems, 153, 190-200	Waste is already addressed in chapters 5, 6. Within the limitation of 500 words for this section, references and data are included about the trends in average fat supply and protein supply, obesity and overweight, and the prevalence of food over-acquisition .
Alberto Bernues	Ch.2	119	3354	122		Similarly, the contribution to food provisioning is mainly addressed in terms of food security. Food security is an important issue, specially in the Global South, but not so much in Western Europe where the debate is on food quality and safety, and generally in the way the food chain operates. "Extrinsic" quality attributes (those that do not depend on the product itself but on the production system) are increasingly important for consumers/citizens (e.g. origin, tradition, link to the territory, animal welfare, etc.). The report mainly follows a food security narrative, which can be counterproductive for biodiversity conservation and ecosystem services. See for example: Bernues A., Olaizola A., Corcoran K., 2003. Extrinsic attributes of red meat as indicators of quality in Europe: an application for market segmentation. Food Quality and Preference 14(4), 265-276. Grunert K. G., 2006. Future trends and consumer lifestyles with regard to meat consumption, Meat Sci, vol. 74, no. 1, pp. 149–160.	This section length is limited to 500 words. However, we have incorporated a food sovereignty approach and included references and data on the nutrition transition and changes in the diet.
Health Review: Bryan W. Brooks	Ch.2	119	3354			Food security is appropriately examined. Food security also includes food safety, but unfortunately it is not examined at any length. However, sustainable and safe food production is clearly an NCP. Food contamination has direct influences on health outcomes, yet the lists of contaminants examined in foods, if they are examined, are very limited. Food safety considerations associated with pollution, and challenges with production in water stresses regions, should be examined.	Unfortunately, given the limitation of this section's length to 500 words, we have needed to leave out much information. The NCP Food is dealt with in section "2.2.2.1 Food and feed". The tradeoffs associated related to food production are dealt with in section "2.3.1.4 Food-energy-water nexus security".

Graciela Rusch	Ch.2	120	3378	120	3378	Which sub-region?	This sentence has been left out due to the length constraints of the section.
Health Review: Malcolm Ward	Ch.2	120	3382	120	3399	Loopstra R et al. Austerity, sanctions and the rise of food banks in the UK - BMJ 2015; 350 doi: <a href="https://doi.org/10.1136/bmj.h1775">https://doi.org/10.1136/bmj.h1775</a> (Published 08 April 2015) [Cite this as: BMJ 2015;350:h1775]	Thanks you for the suggestion. However, we have needed to cut references, so this could not be added. We have included it in the extra-references appendix
Health Review: Malcolm Ward	Ch.2	120	3400	121	3413	There is no reference to the alarming rise of 'food waste', particularly in developed economies? <a href="https://www.theguardian.com/environment/ng-interactive/2015/aug/12/produced-but-never-eaten-a-visual-guide-to-food-waste">https://www.theguardian.com/environment/ng-interactive/2015/aug/12/produced-but-never-eaten-a-visual-guide-to-food-waste</a>	Food waste is dealt with in chapters 5 and 6.
Graciela Rusch	Ch.2	122	3448	122	3448	It would be good to provide a balanced picture about sources of renewable energy, and put bio-fuels in a context of sustainable management.	Will be addressed in the upcoming energy security and food-energy-water security sub-sections
Health Review: James JT Connolly	Ch.2	122	3448	3451	122	The discussion of Energy Security may wish to include recent European scholarship on the rising issue of energy poverty	Will be addressed in the upcoming energy security sub-section section
Johannes Langemeyer	Ch.2	125	3539	125	3558	This paragraph seems to be on flood regulation (and thus misplaced here), the link to water availability is not clear.	This paragraph was removed
Hanna Skryhan	Ch.2	125	3551	125	3558	replace to the Ch.6	This paragraph was removed
Graciela Rusch	Ch.2	128	3653	128	3659	The basis to examine these trade-offs is limited in the description of 'provisioning services in the sections above). The assessment on food production provides little evidence on the dependence on nature.	This section on trade-offs was completely reframed
Mark Rounsevell	Ch.2	129	3694	129	3694	It's worth checking for overlap with other chapters on this topic.	The Aral sea case overlaps with chapters 3, 4 and 6. This case will be significantly reduced and kept in a box in the contribution to security sub-section of chapter 2
Graciela Rusch	Ch.2	133	3844	133	3844	Earlier you state that seawater desalination is rather challenging due to energy demands?	We will change the text in order to avoid this contradiction in the section.
Health Review: Sandra C. Buttigieg	Ch.2	133	3848	146	4312	I have found this section quite exhaustive on physical and mental health but somewhat lacking on emotional health. Perhaps it is good to provide conceptual/operational definitions of the three types of health. Additionally, we refer to emotional well-being and it's importance in being resilient to stress, pressures etc. What about meditation in open spaces?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gilberto IGREJAS	Ch.2	133	3848	134	3910	Active networking and steady exchange of information and knowledge between science, breeding and farming practices play a key role in creating synergies and achieving economies of scale, while avoiding overlaps and making outcomes more accessible to end-users. Such networks lead to better coordination and offer opportunities for innovation, while building on shared needs.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Rebecca Lovell	Ch.2	133	3848	134	3910	I think this section gives a good precise and concise summary of the topic. I would suggest that the mention of ageing populations (line 3889) is replaced with some text on shifts in the structures of society (the implications of an aging society are contested) and that the rise in the prevalence and costs of NCDs is also referenced. I wasn't sure what was meant by the mention of increasing cultural diversities on line 3890. You may want to reference the recent WHO Cultural Contexts of Health report which discusses the relevance of the natural environment (e.g. line 3892) Napier, A. D., Depledge, M., Knipper, M., Lovell, R., Ponarin, E., Sanabria, E., & Thomas, F. (2017). Culture matters: World Health Organisation. On line 3905 I wondered if it would be useful to list Ecohealth, One Medicine and Global Health along with One Health as, while they general refer to the same-ish approaches, they relate to different sectors.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	133	3849	133	3853	This sentence does not give an accurate reflection of the SOK review (WHO and CBD, 2015). The SOK review (WHO and CBD, 2015) covered 10 thematic and 4 cross cutting areas, not three as mentioned in this sentence.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sjerp de Vries	Ch.2	133	3850			Here the term biodiversity is used. To me, this is not the same as nature. I think it is important to define central terms clearly and to use them in a consistent manner. NB: later on also terms such as green space are used.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	133	3854			I think it is a bit awkward to say that BD/ES support 'good health status'. They also support your health when you do not have a good health status. When you are mentally ill, access to green space will have positive health impacts, but not to such extent that you will have a 'good health status'. And what is actually meant with 'good health status'. It is a sort of ideal state. Hence, I suggest to change this formulation. Perhaps just say: 'in supporting human health' or 'in supporting and promoting human health'.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	133	3856	133	3863	The examples of active and passive experience of health benefits accruing from nature do not include examples that reflect contact with nature in urban areas. Active contact with nature in urban areas may include undertaking sports, exercise, dog walking or other physical activity in urban green spaces. Passive contact with nature in urban areas often includes walking through, or driving past, urban green spaces; viewing parks from windows; or simply listening to natural sounds. Such experiences are important in urban areas and need acknowledging	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	133	3863	133	3865	'other benefits' of biodiversity/NCPs are mentioned but this could be elaborated upon further. In general I felt that this chapter lacked depth on the links between biodiversity and mental/emotional health. The psycho-social benefits, cultural benefits, and therapeutic effects of biodiversity were largely absent and few references given.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	133	3863			Idem. Reconsider using the term 'good health'.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	133	3863	134	3910	2.3.2 introduction paragraphs: I greatly miss reference to the report of The Rockefeller Foundation–Lancet Commission on planetary health. This highly influential report stresses the fact that natural systems underpin human health and explores the associated scientific basis.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Suzanne Skevington	Ch.2	133	3866			Health benefits are also variously linked to many different aspects of quality of life: physical, psychological, social, environmental and spiritual (Skevington and Mc Crate, 2012). Skevington SM and Mc Crate FM. (2011) Expecting a good quality of life in health. Assessing people with diverse diseases and conditions using the WHOQOL-BREF. Health Expectations, 15, 49-62. DOI 10.1111/j.1369-7625.2010.00650.x.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: James JT Connolly	Ch.2	133	3867	3871	133	In addition to the increasing focus on health and access as a result of urbanizing populations, there is increasing attention paid to the extent to which the health benefits provided by nature are inequitably distributed in urban environments, raising environmental and health justice concerns	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Stefania Paduano	Ch.2	133	3867	133	3871	Barton H, Grant M. A health map for the local human habitat. J R Soc Promot Health 2006; 126: 252-53. Reference for Health Cities	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	133	3867	133	3871	Perhaps a sentence could be included before these lines, explaining that the urban parks movement of the 19th century (in the UK as well as in Europe and the US) was primarily driven by improving health improvements (i.e. fresh air, greenery, contact with nature, health benefits) and a morality agenda (i.e. mixing of social classes). Such an outline historical sentence would help emphasise the current urban health problems are not new.WARD-THOMPSON, C., 1998. Historic American Parks and Contemporary Needs. Landscape Journal, 17, 1; 1-25 ; WARD-THOMPSON, C., 2002. Urban Open Space in The 21st Century. Landscape and Urban Planning, 60; 59-72.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	133	3868	133	3871	Would be interesting here to provide a couple of examples of research groups, universities, papers, etc. which demonstrate the increasing interest in human health-environment linkages in Europe.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Julie Garnier	Ch.2	133	3870	133	3870	Need to include disease associated with air pollution current food production systems which are all more generally linked to our disconnect from nature and anthropocentric vision of life	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	133	3871	133	3873	Can references for studies in Central Asia be provided here?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gilberto IGREJAS	Ch.2	134	1885	135	3927	Zoonotic diseases of significance in developing countries fall into three categories based on the form of transmission: foodborne (cysticercosis, brucellosis, tuberculosis), infectious (avian influenza, tuberculosis), and vector-borne (rabies or trypanosomosis).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	134	3096	134	3098	"Other approaches". Although the One Health concept is more or less known, referring to those other approaches without any clue for the reader would benefit from citation(s).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Amor Torre-Marín	Ch.2	134	3874	134	3874	"well-established": confidence term? If so to be used between brackets. If noy alternative wording should be used.	Thanks for the valuable comment, here it was not inteded as formal IPBES confidence term
Health Review: Daniel Todorov	Ch.2	134	3874	134	3877	There is not distinct citation about the connection between wild life as a source of medicinal recources	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	134	3874	134	3886	The narrative here does not reflect the urban European perspective. For example the importance and significance of cultural ecosystem services in urban areas has not been acknowledged in this paragraph. This acknowledgement would make the relevance of this review to urban areas more explicit than it is now. Relevant references include: Kremer, P, Elmqvist, T, McPhearson, T, 2015. Advancing the frontier of urban ecosystem services research, Ecosystem Services, 12, 149-151. La Rosa, D., Spyra, M., Inostroza, L., 2016. Indicators for cultural ecosystems services for urban planning: a review. Ecological Indicators, 61, 74-89.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Zorica Popovic	Ch.2	134	3877	134	3880	The ways in which health status is affected by biodiversity and NCPs is therefore determined by the nature of specific climate, ecological and socio-economic conditions, including the character and frequency of interactions between people or their communities and the natural environment.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sjerp de Vries	Ch.2	134	3878			'is therefore determined by' Put way to strong. (According to some evolutionary theories, e.g. Stress Reduction Theory, the beneficial effects of contact with nature are quite universal.)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Julie Garnier	Ch.2	134	3878	134	3878	Health status is affected by biodiversity LOSS – Loss of food diversity ahs been largely responsible for observed trends in NCDs	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	134	3880			I would not say that they determine the strength/direction....Perhaps better reformulate to stress that the social/economic/cultural factors can mediate the relationships between health and biodiversity.	adapted for the new appendix
Yelda Guzel	Ch.2	134	3881	134	3882	This important issue can be assessed by citing more literature if available	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Edna Cabecinha	Ch.2	134	3882	134	3886	A reference or references here is needed (e.g. Denis and James, 2016; Ruokolainen et al., 2016) <a href="http://www.sciencedirect.com/science/article/pii/S1618866715001612">http://www.sciencedirect.com/science/article/pii/S1618866715001612</a> ; DOI: 10.1097/ACI.0000000000000304	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	134	3882	134	3886	I found the issue of group- or community-specific dependencies and risks very interesting. This could be expanded upon and perhaps one of two references provided? Have there been studies looking at health and biodiversity linkages for groups such as those with disabilities, HIV positive, asylum seekers, etc? If not, this is surely a gap in the current research.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Zorica Popovic	Ch.2	134	3882	134	3886	This means that differentials in the ways in which some communities (including indigenous and local communities), groups specifically associated with nature (through work, education, recreational activities, tourism) or groups within wider society (e.g. women, people suffering from poverty) experience and interact with biodiversity and ecosystems may also result in differences in the influence of biodiversity and ecosystems on their health status, with the potential for group- or community-specific dependencies and risks.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	134	3887	134	3891	It is stated that healthcare systems are struggling due to changing demographics, climate change, etc. Is there (quantitative) evidence of this that could be referenced or given here?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix



Health Review: Daniel Todorov	Ch.2	134	3887	134	3891	The whole part is not backed up with any citation.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Julie Garnier	Ch.2	134	3891	134	3891	Keyb issues also include highly sectoralized health at governances and policy levels (See One Health paper - Queenan et al 2017)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Zorica Popovic	Ch.2	134	3899	134	3901	The SoK also highlights the negative impacts which certain health sector activities can have on biodiversity, including different kinds of air, soil and water pollution, especially through the release of active pharmaceutical ingredients into the environment (Boxall & Kretsch, 2015).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Ana R. Ribeiro	Ch.2	134	3900			The pollution-payer principle may be emphasized, as well as the need of regulations for pharmaceutical industry (concerning wastewater quality and the assessment of ecotoxicity in the drug development)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Julie Garnier	Ch.2	134	3906	134	3907	One Health IS an integrated approach and is increasingly recognized as the approach needed for dealing with global health challenges by WHO, FAO, OIE.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Mark Rounsevell	Ch.2	134	3911	134	3911	Would be good to have a stronger link to NCPs in this section	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Rebecca Lovell	Ch.2	134	3911	141	4095	I found the structure of the NCD section a bit odd. Why use the title 'access to nature'? 'Nature' is a very ill-defined term for this publication, there are many terms used in the literature and I think the discussion of the evidence should reflect this. Further, much of the evidence reviewed cannot be used to discuss whether or not people actually can or do 'access' nature, rather just whether or not they live in a place with a greater or lesser amount of 'natural features'. I think the whole section needs proof reading and potentially re-drafting. Particular issues relate to listing features of funded research and specifics of individual studies/reviews rather than discussing the actual evidence of linkages between exposure to biodiversity and health outcomes?	Changed into 'Exposure to nature'
Health Review: Maud Huynen	Ch.2	134	3912	141	4095	Section 2.3.2.1 Non-communicable diseases. This section is divided in three sub-sections: nutrition, access to nature and ecotoxicology. I really miss inclusion of an emerging important topic, namely the links between biodiversity and NCD. It is somewhat unclear whether the linkages between biodiversity and NCD is part of the section on access to nature'. It seems that 'the immune systems' is included as health outcome in Table 2.17, but it remains clear what mechanism would underly this health impact (access to nature or exposure to microbial biodiversity?). The possible linkages between microbial diversity and allergies is not discussed in the current text ('old friends hypothesis'). I suggest to include the linkages between (microbial) biodiversity and NCD in a much more explicit way, perhaps as a fourth subsection of 2.3.2.1. In particular as it has been identified as an important knowledge gap on page 145 (lines 4301-4305)	Thank you for checking whether all relevant health outcomes are addressed. Some NCDs (such as cardiovascular disease) are present in Table 2.17. Others (such as forms of cancer) are not, because we did not find greenspace-health review literature addressing them.
Health Review: Konstantinos Tzoulas	Ch.2	134	3912	135	3927	The section on non-communicable disease and contact with nature is too broad and generic. This section ought to explicitly review evidence of health benefits of contact with nature for cardiovascular disease, type II diabetes, and colon cancers. Contact with nature and these three non-communicable diseases have been researched, particularly in European, American and Australian urban areas. Relevant references to follow up include those mentioned in section 3.1 of SOK review (WHO and CBD, 2015). Additional references that could be considered include: ASTELL-BURT, T., FENG, X. and KOLT, G.S., 2014. Is neighbourhood green space associated with a lower risk of type 2 diabetes evidence from 267,072 Australians. Diabetes care, 37(1), pp. 197-201.; HAYS, L.M., HOEN, H.M., SLAVEN, J.E., FINCH, E.A., MARRERO, D.G., SAHA, C. and ACKERMANN, R.T., 2016. Effects of a Community-based Lifestyle Intervention on Change in Physical Activity Among Economically Disadvantaged Adults With Prediabetes. American Journal of Health Education, 47(5), pp. 266-278.; NGOM, R., GOSSELIN, P., BLAIS, C. and ROCHETTE, L., 2016. Type and proximity of green spaces are important for preventing cardiovascular morbidity and diabetes—a cross-sectional study for Quebec, Canada. International Journal of Environmental Research and Public Health, 13(4), 423; STORGAARD, R.L., HANSEN, H.S., AADAH, M. and GLÜMER, C., 2013. Association between neighbourhood green space and sedentary leisure time in a Danish population. Scandinavian Journal of Public Health, 41(8), pp. 846-852.; TAMOSIUNAS, A., GRAZULEVICIENE, R., LUKSIENE, D., DEDELE, A., REKLAIKIENE, R., BACEVICIENE, M., VENKLOVIENE, J., BERNOTIENE, G., RADISAUSKAS, R., MALINAUSKIENE, V., MILINAVICIENE, E., ULMER, J.M., WOLF, K.L., BACKMAN, D.R., TRETHERWAY, R.L., BLAIN, C.J., O'NEIL-DUNNE, J.P. and FRANK, L.D., 2016. Multiple health benefits of urban tree canopy: The mounting evidence for a green prescription. Health and Place, 42, pp. 54-62.	Thank you for this overview of indeed relevant literature. Because of a word count limitations, we have focussed on >review< literature.
Health Review: Jenny Roe	Ch.2	135	3917			On links between biodiversity and health, reference systematic review by Lovell, line 38381 <a href="http://www.ecehh.org/research-projects/biodiversity-review/">http://www.ecehh.org/research-projects/biodiversity-review/</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	135	3920	135	3920	Cancer, metabolic and immune-associated diseases are also on the rise and should be mentioned here.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Julie Garnier	Ch.2	135	3920			NCDs, cardiovascular diseases and airpollution which is one of the main environmental risk factor – Ambient indoor air pollution associated with cooking with solid fuels in rural households in Eastern Europe is an important factor. See Prüss-Ustün A, Wolf J, Corvalán C, Bos R, Neira M. Preventing Disease Through Healthy Environments: a Global Assessment of the Burden of Disease from Environmental Risks. WHO, Geneva, Switzerland; 2016.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	135	3920			Include the WHO's GBD reports. Murray et al 2012 Lancet 380 pp. 2197-2223 <a href="http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(12)61689-4/abstract">http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(12)61689-4/abstract</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Margarida Simões	Ch.2	135	3920	135	3921	“(…)cardiovascular diseases are the major NCDs worldwide, with the highest per-capita 3921 cardiovascular disease burden falling on Eastern Europe and Central Asia (Benziger et al., 2016)”. This statement may be related to Table 2.1 (page 10), relatively to Regulation of climate (reduce heat stress) for which effects are correlated (heat stress and stroke and cardiovascular diseases)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	135	3921			I do not think that Benziger et al 2016 is included in the references list to this chapter. (note: I did not check all references)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Lars Bjork	Ch.2	135	3928	148		No specific comments to the text but I commented on the state of evidence and key messages in the expert consultation for this tekst part, which will feed into the next version of this tekst part	thanks
Health Review: Rosaria Costa	Ch.2	135	3928	148		No specific comments to the text but I commented on the state of evidence and key messages in the expert consultation for this tekst part, which will feed into the next version of this tekst part	thanks
Health Review: Maud Huynen	Ch.2	135	3928	148		Would there be a possibility to include a separate subsection stressing the importance of biodiversity-climate-health interlinkages. I think it would really be a big omission and a missed opportunity if this issue is not made more explicit in this chapter.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gilberto IGREJAS	Ch.2	135	3928	136	3968	The lack of coordination of policy making between agriculture and health undermines efforts to overcome ill health among the rural poor and gives short shrift to agriculture’s role in alleviating many of the world’s most serious health problems. Considered here are malaria, pesticide poisoning, AIDS, and diseases transmitted from animals to humans. The important link through food security and nutrition is discussed elsewhere.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Johannes Langemeyer	Ch.2	135	3928	148		No specific comments to the text but I commented on the state of evidence and key messages in the expert consultation for this tekst part, which will feed into the next version of this tekst part	thanks
Health Review: An Martel	Ch.2	135	3928	148		No specific comments to the text but I commented on the state of evidence and key messages in the expert consultation for this tekst part, which will feed into the next version of this tekst part Please insert the following reference after the “modern pharmaceutical products”; (Cragg & Newman, 2016) : Newman, D.J., & Cragg, G.M. (2016). Natural Products as Sources of New Drugs from 1981 to 2014. J. Nat. Prods., 79 (3), 629-661. DOI: 10.1021/acs.jnatprod.5b01055	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valeria Negri	Ch.2	135	3929	135	3929	An issue lacking: not just ‘modern agriculture’, but ‘ALL TYPES OF AGRICULTURE’ (including traditional agriculture in less developed areas, organic agriculture, etc)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	135	3929	135	3930	The term ‘well established’ (used as a consistent confidence term for this review) is more accurate for this statement, than the term well documented’ (which seems broad and undefined). Consider amending accordingly.	Adapted in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	135	3929	136	3968	In the nutrition section urban food growing needs mentioning, including the potential benefits and risks from air and land contamination. References to consider include: Lawson, L., 2016. Agriculture: Sowing the city, Nature, 540, 522-524. Meharg, A.A., 2016. City farming needs monitoring. Nature, 531, S60; Leake, J.R., Adam-Bradford A., Rigby J.E., 2009. Health benefits of ‘grow your own’ food in urban areas: implications for contaminated land risk assessment and risk management? Environ Health, 8 Suppl 1: S6.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Zorica Popovic	Ch.2	135	3930	135	3934	Of increasing interest is the role which biodiversity can play in nutrition security towards the concept of “functional food”, supporting dietary health by providing a wide food resource base, diversifying sources of macro- and micro-nutrients, providing opportunities for development of nutraceuticals, and helping to meet nutritional needs in times of social or economic instability (Hunter et al., 2015).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sjerp de Vries	Ch.2	135	3935	135	3951	Is this relevant with regard to contributions to health?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
UNEP-WCMC: The Biodiversity Indicators Partnership (BIP)	Ch.2	135	3941	135	3943	Excellent use of these data; very important to retain.	Thanks
Thomas Brooks	Ch.2	135	3941	135	3943	Excellent use of these data; very important to retain.	Thanks
Health Review: Valeria Negri	Ch.2	135	3945	135	3948	Lacking bibliographic references: Magos Brehm, J., N. Macted, B.V. FordLloyd, and M.A. Martins Loução 2008. National inventories of crop wild relatives and wild harvested plants: case study for Portugal. Genet. Resour. Crop. Evol. 55:779–796 Landucci F., Panella L., Lucarini D., Gigante D, Donnini D., Kell S., Macted N., Venanzoni R., Negri V. 2014. A prioritized inventory of crop wild relatives and wild harvested plants of Italy. Crop Science, 54: 1628-1644 DOI: 10.2135/cropsci2013.05.0355	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valeria Negri	Ch.2	135	3950	135	3951	Islands like Madeira or the Canary islands belong to ‘Western’ Europe, Western Europe is not mentioned in the text (Western in place of Eastern?)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	135	3952	136	3968	Additional recent studies on edible wild plants of Europe for subchapter 2.3.2.1.1 Nutrition are provided below for your consideration  Guarrera PM, Savo V. Wild food plants used in traditional vegetable mixtures in Italy. J Ethnopharmacol. 2016 Jun 5;185:202-34. Pulaj B, Mustafa B, Nelson K, Quave CL, Hajdari A. Chemical composition and in vitro antibacterial activity of Pistacia terebinthus essential oils derived from wild populations in Kosovo. BMC Complement Altern Med. 2016 May 26;16:147. Licata M, Tuttolomondo T, Leto C, Virga G, Bonsangue G, Cammalleri I, Gennaro MC, La Bella S. A survey of wild plant species for food use in Sicily (Italy) - results of a 3-year study in four Regional Parks. J Ethnobiol Ethnomed. 2016 Feb 9;12:12. Kaliszewska I, Kołodziejska-Degórska I. The social context of wild leafy vegetables uses in Shiri, Daghestan. J Ethnobiol Ethnomed. 2015 Aug 11;11:63. (Daghestan is in Eastern Europe). Schunko C, Grasser S, Vogl CR. Explaining the resurgent popularity of the wild: motivations for wild plant gathering in the Biosphere Reserve Grosses Walsertal, Austria. J Ethnobiol Ethnomed. 2015 Jun 30;11:55. Kasper-Pakosz R, Pietras M, Łuczaj Ł. Wild and native plants and mushrooms sold in the open-air markets of south-eastern Poland. J Ethnobiol Ethnomed. 2016 Oct 7;12(1):45-50	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Sjerp de Vries	Ch.2	135	3952	136	3968	What is the conclusion with regard to contribution to health?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	135	3952	135	3952	The phrase 'widely assessed' does not seem to be accurate, especially since the statement has only been substantiated by one reference. Either the phrase 'widely assessed' needs replacing with an accurate phrase, or additional references added. Further references that could be relevant include: MISRA, R.C., SAHOQ, H.K., PANI, D.R. and BHANDARI, D.C., 2013. Genetic resources of wild tuberous food plants traditionally used in Simlipal Biosphere Reserve, Odisha, India. Genetic Resources and Crop Evolution, 60(7), pp. 2033-2054.; NEDELICHEVA, A., 2013. An ethnobotanical study of wild edible plants in Bulgaria. EurAsian Journal of BioSciences, 7, pp. 77-94.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	136	3879	136	3982	Include references to these 14 review studies	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	136	3966	136	3968	Could this reference be of relevance? KHASBAGAN, HUAI, H., PEI, S., 2000. Wild plants in the diet of Arhorchin Mongol herdsmen in Inner Mongolia. Economic Botany, 54(4), pp. 528-536.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Hanna Skryhan	Ch.2	136	3969	137	4004	add information about consequences of the Chernobyl disaster	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	136	3969	136	3969	Additional studies to support statement: "wild foods as a route of exposure to environmental contaminants" of subchapter 2.3.2.1.2 Ecotoxicology are given below for your consideration  Gałgowska M, Pietrzak-Fiećko R. Pesticide contaminants in selected species of edible wild mushrooms from the north-eastern part of Poland. J Environ Sci Health B. 2017 Mar 4;52(3):214-217. Širić I, Kasap A, Bedeković D, Falandysz J. Lead, cadmium and mercury contents and bioaccumulation potential of wild edible saprophytic and ectomycorrhizal mushrooms, Croatia. J Environ Sci Health B. 2017 Mar 4;52(3):156-165. Abass K, Koiranen M, Mazej D, Tratnik JS, Horvat M, Hakola J, Järvelin MR, Rautio A.Arsenic, cadmium, lead and mercury levels in blood of Finnish adults and their relation to diet, lifestyle habits and sociodemographic variables. Environ Sci Pollut Res Int. 2017 Jan;24(2):1347-1362. doi: 10.1007/s11356-016-7824-5.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Bryan W. Brooks	Ch.2	136	3969			The ecotoxicology section would benefit from: 1. Identifying the need to prioritize contaminants and other stressors of concerns within different parts of ECA; and 2. Identify next generation tools employed to understand ecological responses to and functions providing resilience to stressors. Herein, the Adverse Outcome Pathway approach (Ankley et al 2010. Environmental Toxicology and Chemistry), ecological genomics (see <a href="https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=335537">https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=335537</a> ) and high resolution chemical profile analysis.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sjerp de Vries	Ch.2	136	3969			Is this section not rather early positioned in the chapter? Perhaps better at the end of the chapter and combine it with other disservices/potential negative effects (e.g. growing vegetables in allotment gardens with polluted soil).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gilberto IGREJAS	Ch.2	136	3969	137	4004	Agriculture affects health, and health affects agriculture. Agriculture supports health by providing food and nutrition for the world's people and by generating income that can be spent on health care. Yet agricultural production and food consumption can also increase the risks of water-related diseases (malaria) and foodborne diseases—as well as health hazards linked with specific agricultural systems and practices, such as infectious animal diseases (avian flu, brucellosis), pesticide poisoning, and aflatoxicosis.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	136	3970	136	3982	Consider mentioning the fact that some of the European edible plants may themselves contain substances causing subclinical adverse health effects Kristanc L, Kref S. European medicinal and edible plants associated with subacute and chronic toxicity part I: Plants with carcinogenic, teratogenic and endocrine-disrupting effects. Food Chem Toxicol. 2016 Jun;92:150-64 Kristanc L, Kref S. European medicinal and edible plants associated with subacute and chronic toxicity part II: Plants with hepato-, neuro-, nephro- and immunotoxic effects. Food Chem Toxicol. 2016 Jun;92:38-49.	This is touched upon in the medicinal plants section in the appendix
Health Review: Konstantinos Tzoulas	Ch.2	136	3970	137	4004	The section on ecotoxicology seems unfinished and an early draft. There is no clear narrative that runs through this section. The last sentence of the section (lines 4003-4004) are very broad and general (potential for what exactly? How could such different studies all be grouped and generalised as one?). There is no clear conclusion from this section. The whole section needs re-writing.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Graciela Rusch	Ch.2	136	3974	136	3974	The question of toxicity of lead ammunition has been a very hot topic in Norway. This literature could be revised more thoroughly. Similar systems in Sweden and Finland. Sigbjørn Stokke could be contacted for further information Sigbjorn.Stokke@nina.no and Bjørnar Ytreshus for one-health Bjornar.Ytreshus@nina.no  Additional references for supporting statement "In contrast, some other studies..." are provided below	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	136	3975	136	3975	Lehel J, Laczay P, Gyurcsó A, Jánoska F, Majoros S, Lányi K, Marosán M.Toxic heavy metals in the muscle of roe deer (Capreolus capreolus)—food toxicological significance. Environ Sci Pollut Res Int. 2016 Mar;23(5):4465-72. García MÁ, Nuñez R, Alonso J, Melgar MJ. Total mercury in fresh and processed tuna marketed in Galicia (NW Spain) in relation to dietary exposure. Environ Sci Pollut Res Int. 2016 Dec;23(24):24960-24969.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sjerp de Vries	Ch.2	136	3979	136	3982	So, what is the conclusion regarding contribution to health?	Clarified in the new appendix
Health Review: Zorica Popovic	Ch.2	136	3979	136	3982	Recent review studies on ecotoxicology relevant to health issues for the ECA-region IPBES assessment (N=14) focus mainly on environmental pressure on the ecosystem related to health care & safety (N=11) and some on the use of animals or plants as bioindicators for monitoring environmental pollution and its effects (N=3). Research on phytoremediation led to the successful implementation of solutions related to using of green plants to remove, contain, inactivate or destroy harmful environmental pollutants (Schwitzgubel, 2004). Schwitzgubel, J.P. (2004). Potential of phytoremediation, an emerging green technology: European trends and outlook. PROCEEDINGS-INDIAN NATIONAL SCIENCE ACADEMY PART B, 70(1), 131-152.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Daniel Todorov	Ch.2	136	3979	136	3982	The whole part is not backed up with any citation.	Clarified in the new appendix
Health Review: Sjerp de Vries	Ch.2	136	3983			Does this subsection fit in this section on contributions to health (and rather early within this section, 2.3.2)?	Yes, it concerns health relevant research in relation to nature

Health Review: Theofilos Poutahidis	Ch.2	136	3987	136	3987	Re: Bisphenol A. An additional reference: Vafeiadi M, Roumeliotaki T, Myridakis A, Chalkiadaki G, Fthenou E, Dermitzaki E, Karachaliou M, Sarri K, Vassilaki M, Stephanou EG, Kogevinas M, Chatzi L. Association of early life exposure to bisphenol A with obesity and cardiometabolic traits in childhood. Environ Res. 2016 Apr;146:379-87.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Ana R. Ribeiro	Ch.2	136	3987			“...but still present in the environment, some...” or “...but still present in the environment DOU TO THEIR PERSISTANCE, but some...”	Adapted
Amor Torre-Marín	Ch.2	136	3988	136	3988	“inconclusive”: confidence term? If so to be used between brackets. If noy alternative wording should be used.	not intended as a IPBES confidence term
Health Review: Edna Cabecinha	Ch.2	136	3988	136	3994	Please be attention to the bibliography	Not sure what is meant with the comment
Health Review: Theofilos Poutahidis	Ch.2	136	3991	136	3992	The case of environmental endocrine disruptors is important and needs to be elaborated some more. Especially, in the light of a study from the USA that highlights the need for recognizing currently unrecognized ones (Mansouri K, et al. CERAPP: Collaborative Estrogen Receptor Activity Prediction Project. Environ Health Perspect. 2016 Jul;124(7):1023-33.) Additional recent studies from Europe reporting on endocrine disruptors include (but not restrict to)  Monteagudo C, Mariscal-Arcas M, Heras-Gonzalez L, Ibañez-Peinado D, Rivas A, Olea-Serrano F. Effects of maternal diet and environmental exposure to organochlorine pesticides on newborn weight in Southern Spain. Chemosphere. 2016 Aug;156:135-42. Ruczyńska W, Szlinder-Richert J, Drgas A. The occurrence of endocrine disrupting compounds in off-shore sediments from the southern Baltic Sea. Environ Sci Process Impacts. 2016 Sep 14;18(9):1193-207. Ribeiro CM, Maia AS, Ribeiro AR, Couto C, Almeida AA, Santos M, Tiritan ME. Anthropogenic pressure in a Portuguese river: Endocrine-disrupting compounds, trace elements and nutrients. J Environ Sci Health A Tox Hazard Subst Environ Eng. 2016 Oct 14;51(12):1043-52 Cocci P, Palermo FA, Quassinti L, Bramucci M, Miano A, Mosconi G. Determination of estrogenic activity in the river Chienti (Marche Region, Italy) by using in vivo and in vitro bioassays. J Environ Sci (China). 2016 May;43:48-53.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Ana R. Ribeiro	Ch.2	136	3992			a.o.?	adapted in the new appendix
Health Review: Ana R. Ribeiro	Ch.2	136	3993			Remove )	adapted in the new appendix
Health Review: Edna Cabecinha	Ch.2	136	3999	136	3999	Lichens (Parmar et al. 2016); phytoplankton (Cabecinha et al. 2009; Schroede et al., 2016); <a href="http://dx.doi.org/10.1080/21553769.2016.1162753">http://dx.doi.org/10.1080/21553769.2016.1162753</a> ; doi:10.1016/j.ecolind.2008.04.006; doi:10.1007/s10933-015-9860-4	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Graciela Rusch	Ch.2	137	4005	137	4095	The analysis in this section is very good. If some of this (listing references, indicating degree of certainty and regional coverage) could be done to structure other sections, the specific evidences provided would appear less fragmented and would help to produce some synthesis statements.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	137	4005	141	4095	I was extremely happy to see mention of green and blue spaces in this chapter. However, again I felt that there was much more focus on the physical health links with these environments and not enough on the mental/emotional/psycho-social/cultural aspects.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	137	4005	141	4095	Access to nature: I miss a brief overview of the possible underlying mechanism. Direct effects of access to nature (for mental wellbeing?), indirect effect via physical activity, how does access to nature affect the endocrine system??? etc etc. What is included in the term ‘access to nature’? For example, line 4020-402 1 discusses reduced heat stress through improved climate concitions, but I’, not sure this is how I would interpret the meaning of ‘access to nature’.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gilberto IGREJAS	Ch.2	137	4005	141	4095	Many farmers in developing countries overuse pesticides and do not take proper safety precautions because they do not understand the risks and fear smaller harvests. Making matters worse, developing countries seldom have strong regulatory systems for dangerous chemicals: Pesticides banned or restricted in industrial countries are used widely in developing countries.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Stefania Paduano	Ch.2	137	4006	137	4016	Martinez Juarez et al 2015 The impact of ecosystems on human health and well-being: A critical review. J Outdoor Recreation and Tourism. 10;63-69. This study cab be added	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Ana R. Ribeiro	Ch.2	137	4006			“...shows THAT there are...”	adapted in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	137	4006	137	4016	This paragraph ends with a conclusion from a literature review, that may or may not had the same aim and objectives of the review reported here. So, it is not clear how the conclusion from Sandifer et al. (2015) could reflect the review of the studies mentioned at the start of this paragraph. It would be expected that the conclusions, from each of the reviews and studies mentioned in lines 4007-4012, would be collated, evaluated and summarised. Without this synthesis it is difficult to see how one conclusion from one review could reflect the breadth of research shown by the studies mentioned above. Consider amending the second half of this paragraph, to reflect the key messages across the studies mentioned in the first part than just one of them.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	137	4006	141	4095	The whole of section 2.3.2.1.3 could improve with a clear structure and narrative. At the moment the information in this section is provided in the following sub-sections (a) overview of a body of literature other than the literature reviews that were covered (lines 4006-4016); (b) overview of European projects (lines 4017-4028); (c) strength of evidence for specific health outcomes from contact with nature (Table 2.17, lines 4029-4050); (d) attempted explanation of differences in strength of evidence (Table 2.18, Figure 2.71 and lines 4051-4067); (e) negative aspects of ecosystems and health (only touched upon, lines 4068-4072); (f) gaps in knowledge (lines 4077-4086); and (g) water bodies (lines 4087-4095). First, if this section is about the literature shown in Tables 2.17 and 2.18, then the start of the section ought to overview the literature shown in Tables 2.17 and 2.18, not another set of literature. Second, the sub-section on gaps in knowledge (lines 4077-4086) seemed appropriate for ending the section. So, the sub-section on water bodies (lines 4087-4095) seems out of place, and begs the question why were not woodlands mentioned (i.e. even a more common physical and aesthetic element than water bodies)? Third, the attempted explanation of differences in strength of evidence (Table 2.18, Figure 2.71 and lines 4051-4067) needs acknowledging the epidemiological model, even if it then just focuses on the biomedical model.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Rebecca Lovell	Ch.2	137	4007	137	4016	I think this paragraph needs redrafting. Some of the references are included twice and in different formats. The comment that more research is needed should go at the end of this section.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Sjerp de Vries	Ch.2	137	4012	137	4016	Confusing: strong evidence vs. limited in rigor. Which is it?	This is a quote
Health Review: Daniel Todorov	Ch.2	137	4012	137	4016	I agree with the idea but the structure of the last part makes it unclear.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sjerp de Vries	Ch.2	137	4017	137	4028	Conclusions of these two (large?) projects?	We have added status / conclusions of these projects.
Health Review: Rebecca Lovell	Ch.2	137	4017	138	4038	I'm not sure why providing extensive details of EU funded projects (including the mention of the BlueHealth project later in the chapter) is useful. I'd cut back to one or two sentences and save words for actual evidence? Line 4035 – the reviews relate to more than just the quantity of greenspace around residential areas. Also relate to proximity, type, features, qualities etc. There are many more reviews (many of which are fully systematic) which could have been included in the table and text to give a more comprehensive overview of the state of the evidence. I've included a list of some of the ones I am aware of at the end of this document. Some of the reviews used here are not systematic, give little detail on method, or do not consider the quality of the evidence. The title of table 2.17 needs restructuring. Why don't you use the same four box evidence assessment approach as used in the full IPBES assessment? In the table (and generally) I don't think that the use of language which suggests change (e.g. 'improved' mental health, 'reduced' mental health...) is helpful unless you are discussing the results of an intervention or change in some exposure etc. I don't agree with some of the summaries of evidence in the table, e.g. that "Improved" (see above) Mental Health" is 'weak' – the Hartig et al. 2014 review for instance (which should be referenced here as it is a review of reviews) concluded that some of the strongest evidence relates to mental health. The 'positive or weak' summary in relation to obesity could be misinterpreted. I don't think there is 'consistent' evidence that nature based physical activity is a precursor of reduced obesity – the Lachowyz paper specifically highlights the lack of evidence, and the global links between obesity and physical activity are, as of, yet unclear. The reporting of the strength of evidence (arguably not the strength but the consistency) changes towards the end of the table (reduced cardiovascular disease row).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Stefania Paduano	Ch.2	137	4017	137	4022	Executive summary and main report: ten Brink P., Mutafoglu K., Schweitzer J.-P., Kettunen M., Twigger-Ross C., Kuipers Y., Emonts M., Tyrväinen L., Hujala T., Ojala A. (2016) The Health and Social Benefits of Nature and Biodiversity Protection – Executive summary. A report for the European Commission (ENV.B.3/ETU/2014/0039), Institute for European Environmental Policy, London / Brussels. I think you have just written this in red IEEP et al. 2016, but I didn't find it in the paragraph 2.6 References.	Will be included in the new appendix
Health Review: Stefania Paduano	Ch.2	137	4017	137	4022	Case studies: Schweitzer J.-P., Mutafoglu K., ten Brink P., Paquel K., Illes A., Gitti G., Kettunen M., Twigger-Ross C., Baker J., Kuipers Y., Emonts M., Tyrväinen L., Hujala T., and Ojala A. (2016) The Health and Social Benefits of Nature and Biodiversity Protection: Annex 1: 20 Cases. A report for the European Commission (ENV.B.3/ETU/2014/0039), Institute for European Environmental Policy, London/Brussels. I think you have just written this in red IEEP et al. 2016, but I didn't find it in the paragraph 2.6 References.	we will refer to the main report
Health Review: Konstantinos Tzoulas	Ch.2	137	4025	137	4028	This sentence needs further explanation and elaboration. What were the findings from this study? Why are these findings significant to merit mentioning here (i.e. making relevance explicit).	the sentence is deleted in the new appendix
Health Review: Theofilos Poutahidis	Ch.2	137	4034	137	4035	Additional evidence Re: "positive relation between the quantity of green space around residential areas and certain health outcomes.": Ruijsbroek A, Mohnen SM, Droomers M, Kruize H, Gidlow C, Gražulevičienė R, Andrusaityte S, Maas J, Nieuwenhuijsen MJ, Triguero-Mas M, Masterson D, Ellis N, van Kempen E, Hardyns W, Stronks K, Groenewegen PP. Neighbourhood green space, social environment and mental health: an examination in four European cities. <i>Int J Public Health</i> . 2017 Apr 7. Nieuwenhuijsen MJ, Khreis H, Triguero-Mas M, Gascon M, Davdand P. Fifty Shades of Green: Pathway to Healthy Urban Living. <i>Epidemiology</i> . 2017 Jan;28(1):63-71. Zach A, Meyer N, Hendrowsito L, Kolb S, Bolte G, Nennstiel-Ratzel U, Stilianakis NJ, Herr C, GME Study Group. Association of sociodemographic and environmental factors with the mental health status among preschool children-Results from a cross-sectional study in Bavaria, Germany. <i>Int J Hyg Environ Health</i> . 2016 Jul;219(4-5):458-67 Gražulevičienė R, Vencloviene J, Kubilius R, Grizas V, Danilevičiute A, Dedele A, Andrusaityte S, Vitkauskienė A, Steponavičiute R, Nieuwenhuijsen MJ. Tracking Restoration of Park and Urban Street Settings in Coronary Artery Disease Patients. <i>Int J Environ Res Public Health</i> . 2016 May 31;13(6) van den Berg M, van Poppel M, van Kamp I, Andrusaityte S, Balseviciene B, Cirach M, Danilevičiute A, Ellis N, Hurst G, Masterson D, Smith G, Triguero-Mas M, Uzdanavičiute I, de Wit P, van Mechelen W, Gidlow C, Gražulevičienė R, Nieuwenhuijsen MJ, Kruize H, Maas J. Visiting green space is associated with mental health and vitality: A cross-sectional study in four European cities. <i>Health Place</i> . 2016 Mar;38:8-15.	Thank you for this relevant literature overview. As these sources are not reviews, we did not include them in Table 2.17.
Health Review: Sjerp de Vries	Ch.2	137	4036	137	4037	Generally, I am missing a discussion/mentioning of the green space/nature indicators used in the different studies.	This indeed is an informational addition. We have now added the green space / nature inclusion criteria for each review study in table 2.18.
Health Review: Jenny Roe	Ch.2	137	4036			Table 2.17: Often reviewed greenspace-related health outcomes and their state of evidence as reported in reviews. Is all the literature cited systematic reviews? "often reviewed" is an ambiguous descriptor; it would be helpful to now how much rigor is applied in this list of reviews. If not systematic reviews, how included? I recommend you only include systematic reviews in this Table. Under Reduced psychiatric morbidity you state "Attention" (precursor) – what do you mean? how is attention a precursor of psychiatric morbidity? do you mean cognitive functioning? The categories in this table require some consolidation e.g. Mental health; what's the difference between improved perceived mental health and general mental health? Why not combine in one category? What do the numerals mean (e.g. III of III)? There's no note for interpretation. The referencing is muddled; i.e. sometimes abbreviated initials are included, sometimes just surnames. I'm not sure what your basis for inclusion of the reviews is, but a number of recent reviews are missing: WHO Urban Green Space and Health 2016 <a href="http://www.euro.who.int/_data/assets/pdf_file/0005/321971/Urban-green-spaces-and-health-review-evidence.pdf?ua=1">http://www.euro.who.int/_data/assets/pdf_file/0005/321971/Urban-green-spaces-and-health-review-evidence.pdf?ua=1</a> Frances Kuo, 2015 <a href="http://journal.frontiersin.org/article/10.3389/fpsyg.2015.01093/full">http://journal.frontiersin.org/article/10.3389/fpsyg.2015.01093/full</a> Harvard Public Health <a href="http://www.chgharvard.org/sites/default/files/resources/Paper-NaturalEnvironmentsInitiative_0.pdf">http://www.chgharvard.org/sites/default/files/resources/Paper-NaturalEnvironmentsInitiative_0.pdf</a> On mental wellbeing, my own review (not systematic) of mental wellbeing benefits and nature, 2016 <a href="http://environmentalscience.oxfordre.com/view/10.1093/acrefore/9780199389414.001.0001/acrefore-9780199389414-e-93">http://environmentalscience.oxfordre.com/view/10.1093/acrefore/9780199389414.001.0001/acrefore-9780199389414-e-93</a> RESIDENTIAL greenness current perspectives on its impact on maternal health and pregnancy outcomes Authors: Banay RF, Bezdold CP, James P, Hart JE, Laden F <a href="https://www.dovepress.com/article-31609.t66504309">https://www.dovepress.com/article-31609.t66504309</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	137	4036	138	4038	Table 2.17 needs clarity. Specifically which studies were cross sectional and which were longitudinal needs to be clearly indicated. Also, the empty quotation marks within the Table need explaining. Where exactly in the text are the levels of evidence strength explained? Is the strength of evidence evaluated consistently across the studies? The terms used in the relevant column do not seem to suggest so (e.g. fairly consistent and moderate both are indicated as II of III); and other terms have no indication at all). Clarity and consistency are needed.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Johannes Langemeyer	Ch.2	137	4037			Add the scale to the table.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Rebecca Lovell	Ch.2	138	4039	139	4050	This section needs proof reading. The sentence beginning on line 4044 doesn't make sense. The references at the end of the paragraph need sorting. Could the evidence of the linkages between biodiversity and the various health outcomes be discussed in a bit more detail? I'm not sure the table is adequate to provide this detail. Our review of the links between biodiverse spaces and health outcomes also highlighted negative associations: Lovell, R., Wheeler, B. W., Higgins, S. L., Irvine, K. N., & Depledge, M. H. (2014). A systematic review of the health and well-being benefits of biodiverse environments. <i>Journal of Toxicology and Environmental Health, Part B</i> , 17(1), 1-20.	Thank you, we have reformulated this sentence.
Health Review: Konstantinos Tzoulas	Ch.2	138	4041	138	4043	Studies in urban ecosystem disservices address the negative contributions of the ecosystems to health. The same comment applies the statement on the line 4068. References that could be considered include: von Dohren, P., Haase, D., 2015. Ecosystem disservices research: are review of the state of the art with a focus on cities, <i>Ecological Indicators</i> , 52, 490-497. Lyytimäki, J., Sipilä, M., 2009. Hopping on one leg – the challenge of ecosystem disservices for urban green space management, <i>Urban Forestry and Urban Greening</i> , 8, 309-315.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	138	4043	139	4056	Clarity is needed in throughout these lines. First, the statement in lines 4043-4044 is too broad and generic (it needs to mention specifics; what does major disagreement mean? Is there minor disagreement? What strengths of evidence specifically?). Second, the statement in lines 4044-4050 needs resolving (i.e. is the older of the later set of studies more robust? On balance there is well established evidence of contact with nature and psychological health outcomes. Is this reflected here?). Third, lines 4051-4056 are very generic and difficult to follow without knowing the specifics. These lines need deleting and rewriting. For example in line 4052 is stated that the same selection and grading criteria are not used amongst the studies, but the opposite is stated in line 4056.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Malcolm Ward	Ch.2	138	4044	139	4050	Additional evidence from Natural England: <a href="http://publications.naturalengland.org.uk/category/6502695238107136">http://publications.naturalengland.org.uk/category/6502695238107136</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gerard Clarke	Ch.2	138	4046	138	4047	Recommend adding these reviews which includes a discussion of urbanisation and mental health <a href="http://www.sciencedirect.com/science/article/pii/S0074774216301209?via%3Dihub">http://www.sciencedirect.com/science/article/pii/S0074774216301209?via%3Dihub</a> <a href="https://jphysiolanthrop.biomedcentral.com/articles/10.1186/s40101-015-0061-7">https://jphysiolanthrop.biomedcentral.com/articles/10.1186/s40101-015-0061-7</a> There is also some literature on urban upbringing and schizophrenia <a href="https://academic.oup.com/schizophreniabulletin/article-lookup/doi/10.1093/schbul/sbu072">https://academic.oup.com/schizophreniabulletin/article-lookup/doi/10.1093/schbul/sbu072</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Ana R. Ribeiro	Ch.2	138	4046			Please delete "is reported in reviews"	Done, thank you.
Health Review: Ana R. Ribeiro	Ch.2	138	4047			"...conclude THAT there are..."	Done, thank you.
Health Review: Jenny Roe	Ch.2	138	4048			Line 4048; you need to state how this supporting literature supports the findings in the Table. And these are 'not more recent' i.e. some were generated in 2013 and are singular research studies, so I'm not sure of the merit of including them to support Table 2.17	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sjerp de Vries	Ch.2	139	4050			De Vries et al. (2016) in BJO might be added here	Done, thank you.
Health Review: Sjerp de Vries	Ch.2	139	4051	139	4067	Suddenly a lot of methodological detail here. Unbalanced compared to other parts of the chapter, where such issues are not discussed.	We agree and have shortened this section.
Health Review: Rebecca Lovell	Ch.2	139	4051	139	4064	I think the section (including table 2.18) could be reduced to a sentence or two about the types, reliability etc. of evidence. I'm not sure its helpful here and think the space could be used to discuss the actual evidence to a greater degree. You could link to a succinct and robust discussion of the assessment of evidence reliability and robustness (e.g. those coming out of Cochrane, CEE etc.). If you keep it, it needs to be rerafted, some of it doesn't make sense (e.g. line 4054 sentence beginning 'Even though...'). In public health the pyramid is known as the 'Hierarchy of Evidence' and is typically applied to intervention research not necessarily to observational evidence (such as is discussed in this section). The acronym NRCT is given in the legend but not used. I don't see the value of table 2.18.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jenny Roe	Ch.2	139	4053			Line 4053, both study selection criteria and strength grading criteria vary widely per review study; isn't the problem also lack of consistency in experimental design between studies and outcome variables, making synthesis difficult ?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	139	4056	139	4067	It is stressed several times that more integrated, holistic approaches are needed. For this reason I'm really concerned about the rather prominent reference to Figure 2.71 in this part of the text. I'm not sure whether establishing an experimental evidence based on studies in the top-level of the pyramid is actually feasible (or desirable) in this field. The pyramid in figure 2.71 is based on a very reductionist approach to health research, which is not suitable for most of the interlinkages between nature and health. It might work for very direct relationships (access to nature and pace of recovery after an operation?), but many other links to our health are intricate, multifaceted and complex and are manifested at various spatial and temporal scales. I don't think that well-controlled interventions are feasible (briefly stated on page 140 line 4083-4086) or desirable. The pyramid does not include studies that are explicitly based on system approaches. Even though such integrated approaches are highly recommended (also acknowledged in this chapter) grading evidence using this pyramid would not recognise this at all. I recommend reconsidering the inclusion of figure 2.71 in this chapter.	It has been deleted
Health Review: Konstantinos Tzoulas	Ch.2	139	4056	139	4067	Lines 4056-4064 and Figure 2.71 are applicable within the biomedical model of health. However, non-clinical, public health, research is not covered by the ontological and epistemological assumptions that underpin Figure 2.71 or the narrative in lines 4056-4064. It is clear that the review presented here focuses on the biomedical model of health. However, the epidemiological, or public health, model also needs acknowledging in order to set the set context of the biomedical model	the figure is deleted
Health Review: Ana R. Ribeiro	Ch.2	139	4059			Please replace "outcomes,(A. van den Berg & Berg, 2012) suggest three criteria" by "outcomes.A. van den Berg & Berg (2012) suggested three criteria"	Done, thank you.
Health Review: Sandra C. Buttigieg	Ch.2	139	4064	139	4067	What about Systematic Reviews and Meta analysis in the top layer of the hierarchy of evidence. Glower, Izzo, Odato and Wang divide the pyramid of hierarchy of evidence into unfiltered and filtered information.	Figure deleted
Health Review: Henrik Lerner	Ch.2	139	4065	139	4067	There are some problems with this view of science when one regards some methods as giving more evidence than others. The pyramid might work well for quantitative research methods, but qualitative research methods are hardly represented in this pyramid. When it comes to understanding indigenous knowledge, interviews and observational studies gives most evidence on the subject matter, but these methods often rank very low in the pyramid. RCT gives good and solid knowledge but only in certain kinds of research questions. Other research questions need other methods. A minor comment is that NRCT is mentioned in the caption but not indicated in the pyramid.	Figure deleted
Health Review: Marieta Braks	Ch.2	139	4066	139		Figure 2.71. NRCT is in legend but not in figure.	Figure deleted

Health Review: Jenny Roe	Ch.2	139	4066			Figure 2.71: The figure and how you approached the review, would be better placed before the outcome of the review, i.e. Table 2.17 RCTs appear at the top of your pyramid, but you need to acknowledge there are real problems in achieving this in natural experiments; working – often – in deprived urban communities is very messy; whilst it's a nice aim, it's simply not possible to follow stringent medical approaches in these populations; i.e. the field of natural experiments is much more messy	Figure deleted
Health Review: Ana R. Ribeiro	Ch.2	139	4067			Adapted instead of adopted	Figure deleted
Health Review: Sandra C. Buttigieg	Ch.2	139	4068	139	4072	This paragraph seems to be weak in terms of adverse effects and counteracting potential adverse effects.	we extended it a little in the new appendix
Health Review: James JT Connolly	Ch.2	139	4068	88	4068	An additional and potentially more serious adverse effect of greening in the urban context is the possibility for certain types of new green infrastructure to generate processes of displacement and gentrification among vulnerable populations. This effect moderates health benefits, especially for lower SES populations.	included in the new appendix
Health Review: Emma Goring	Ch.2	139	4068	139	4071	The issue of pollen allergies is raised here but no solution is suggested. How can this issue be dealt with? Are some plant species less allergy-provoking?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jukka-Pekka Jappinen	Ch.2	139	4068	139	4072	I suggest that this para should be supplemented with a reference to the publication, that suggests that biodiversity loss and rising trends of inflammatory diseases, two global megatrends, may be related: 1) Leena von Herzen, Ilkka Hanski & Tari Haahela 2011: Natural immunity – Biodiversity loss and inflammatory diseases are two global megatrends that might be related. EMBO Reports (2011) 12:1089-1093. <a href="http://embor.embopress.org/content/12/11/1089">http://embor.embopress.org/content/12/11/1089</a> 2) and also to the publication that describes the biodiversity hypothesis: Tari Haahela, Stephen Holgate, Ruby Pawankar, Cemri A Akdis, Suwat Benjapontak, Luis Caraballo, Jeffrey Demain, Jay Portnoy & Leena von Herzen and WAO Special Committee on Climate Change and Biodiversity 2013: The biodiversity hypothesis and allergic disease: world allergy organization position statement. World Allergy Organ J. 2013; 6(1): 3. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3646540/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3646540/</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jukka-Pekka Jappinen	Ch.2	139	4068	139	4072	Also this publication should be mentioned as part of the above addings. This study describes e.g. the differences in the presence of allergy between the people living in Finnish Karelia and Russian Karelia (=allergy is more common in Finnish Karelia than in Russian Karelia). People have more nature contact on the Russian side of the border, which seems to buffer allergic reactions. Publication: Ilkka, Hanski and the Karelia Study Group (Leena von Herzen, Nanna Fyhrquist, Kaisa Koskinen, Kaisa Torppa, Tiina Laatikainen, Piia Karisola, Petri Auvinen, Lars Paulin, Mika J. Mäkelä, Erkki Vartiainen, Timo U. Kosunen, Harri Alenius & Tari Haahela) 2012. Proceedings of the National Academy of Sciences of the United States of America PNAS May 2012. <a href="http://www.pnas.org/content/109/21/8334">http://www.pnas.org/content/109/21/8334</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jenny Roe	Ch.2	139	4068			Line 4068, other factors include fear of green space, particularly perceptions of safety amongst women.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Julie Garnier	Ch.2	139	4072			Paradoxically, the lack of exposure to nature has contributed to the observed increase in allergic problems through an alteration of microbial diversity	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Daniela Haluza	Ch.2	139	4072			Therefore, we proposed the expression "Green Public Health" to raise awareness for utilizing all kinds of natural resources for Public Health promotion and to create an umbrella term for the research on nature's effects on health. Ref.: Haluza et al. (2014), Cervinka et al. (2014): Green Public Health - Benefits of Woodlands on Human Health and Well-being).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jukka-Pekka Jappinen	Ch.2	139	4072	139		You may also consider a new para that describes the relationship between biodiversity loss and existence of inflammatory diseases incl. the existence of allergies. These findings are coming e.g. from the three above mentioned studies/references.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jukka-Pekka Jappinen	Ch.2	139	4072	139		Also this publication/reference is interesting: Molly Fox, Leslie A. Knapp, Paul W. Andrews & Corey L. Fincher 2013: Hygiene and the world distribution of Alzheimer's disease. Epidemiological evidence for a relationship between microbial environment and age-adjusted Alzheimer disease burden. In: Evolution, Medicine and Public Health 2013(1): 173-186. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3868447/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3868447/</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sandra C. Buttigieg	Ch.2	139	4074	140	4076	The column Evidence grading criteria is not filled up consistently across sources and therefore difficult to understand	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jenny Roe	Ch.2	139	4074			Table 2.18; I find some of this literature problematic, for the reasons cited above, it's not systematically generated, e.g. James et al., 2015 "This review is not meant to be comprehensive" ; so why include? This table needs an evaluative paragraph; I found it difficult to follow; what it seems to show is that there is no consistent approaches, even in approaching reviews of the literature. The Cochrane method for systematic reviews is the gold standard to which these should be compared.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Rebecca Lovell	Ch.2	140	4077	140	4086	Most the points made about future research needs are good. Agree it is difficult to conduct intervention research but there are many good opportunities to which a natural experiment methodology could be applied? Could also note that greater use of theory – especially in relation to intervention research – would be very valuable.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Malcolm Ward	Ch.2	140	4077	140	4079	Additional evidence at the Natural Resources Wales annual Welsh Outdoor Recreation Survey - <a href="https://naturalresources.wales/evidence-and-data/research-and-reports/welsh-outdoor-recreation-survey/?lang=en">https://naturalresources.wales/evidence-and-data/research-and-reports/welsh-outdoor-recreation-survey/?lang=en</a> with Summary Report for 2016 at: <a href="https://naturalresources.wales/media/681025/welsh-outdoor-recreation-survey-key-facts-for-policy-and-practice-2016.pdf">https://naturalresources.wales/media/681025/welsh-outdoor-recreation-survey-key-facts-for-policy-and-practice-2016.pdf</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Zorica Popovic	Ch.2	140	4082	140	4082	Challenges for future research are therefore to follow subjects prospectively, differentiate between greenness quantity and quality, and identify the above mediators (James et al., 2015; Gascon et al., 2016). Besides, more research is needed on the impact of specific green space on the human health and well-being (specific floristic composition, volatile emission in the green environment, forest bath, etc.).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sjerp de Vries	Ch.2	140	4087			Suddenly aesthetics is mentioned. It has not been discussed why this is important.	We understand that we should not use this concept without discussing it, and therefore have reformulated the sentence.
Health Review: Emma Goring	Ch.2	140	4087	141	4095	It is fantastic to see mention of blue space but I felt that this section was under-developed. 'Blue spaces' as a concept should be briefly defined. For example these can be natural or man-made, etc. What exactly is meant by 'blue infrastructure' (this is not a commonly-known term and perhaps requires defining). When is the BlueHealth project due for completion?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Daniela Haluza	Ch.2	140	4087			The combination of nature and water (green and blue spaces) has been shown to have positive effects on health and well-being compared to one of the spaces alone. Also, waterfalls have positive health effects, see Gaisberger et al. (2012), Grafetstätter et al. (2017).	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Rebecca Lovell	Ch.2	140	4087			I'm not sure I agree with the statement that all the water/health research originates from toxicology etc.. There is now a small but growing body of research on bluespaces of relevance to this section coming out of psychology, social sciences and geography. I'm not sure I think it is helpful to make such a distinction between blue and green spaces. Very few 'blue spaces' don't have any green, and many green spaces have blue elements. Would be good to actually report some of the evidence of the links between blue spaces (and the ecology of blue spaces) and health?? Throughout the whole chapter I think it would be very helpful to make a clear distinction between evidence which tells us which environments are associated with good health outcomes and evidence which tells which environmental actions we can take to enhance health outcomes. Currently there is very little on conservation activities, nature based solutions etc. which enhance the environment to enhance health. The term biodiversity is rarely mentioned throughout the chapter.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Ana R. Ribeiro	Ch.2	140	4087	140	4090	This is importante, considering the uses for recreational activities, besides the use for drinking.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Zorica Popovic	Ch.2	140	4106	140	4090	However, the relationship between water and health in current literature is mostly investigated in the field of ecosystem functioning, environmental toxicology and microbiology and not explicitly in the research field of blue space and human well-being.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: James JT Connolly	Ch.2	141	4092	141	4092	The threat of displacement and gentrification as a result of tourism and property value increase is also likely much greater for new blue space infrastructure than new green space, especially with the expansion and development of beachfronts. This threat moderates health benefits, especially for lower SES populations.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Sjerp de Vries	Ch.2	141	4092			Associations: with mental health	Thank you, we have added this.
Health Review: Maud Huynen	Ch.2	141	4096	142	4136	For section 2.3.2.2.: Perhaps see theme issue Theme issue 'Conservation, biodiversity and infectious disease: scientific evidence and policy implications' compiled and edited by Hillary S. Young, Chelsea L. Wood, A. Marm Kilpatrick, Kevin D. Lafferty, Charles L. Nunn and Jeffrey R. Vincent	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gilberto IGREIAS	Ch.2	141	4096	146	4312	Coordinating agriculture and health interventions can yield significant welfare benefits for the poor in developing countries.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Richard Kock	Ch.2	141	4096	143	4136	An issue which is not well presented here is the question of hypotheses beyond the dilution effect. For example the idea that the linearity of the interface between more natural habitat and human landscapes; agricultural and settlement can lead to a similar phenomena to the forest edge effect associated with a number of vector borne diseases in tropical systems e.g. yellow fever, chikungunya, etc. Modelling of the social economic and ecological/structural changes on the disease environment show how disturbance of ecosystems might lead in some circumstances to increasing disease emergence or activity in human landscapes. There may be some generalizable scenarios associated with patterns of development and different landscapes and species communities. This can be through simply host switching by pathogens given population opportunity and in some cases related to changes in the so-called dilution effects with biodiversity trends. Perhaps more important are the artificially generated biological and structural anomalies (genetics and novel habitat (e.g. urban environment - dengue; monoculture livestock systems, poultry and highly pathogenic avian influenza). This idea is closely aligned to theories on resilience and biodiversity. There is an increasing literature on this subject even if still lacking in absolute proof of concept given its complexity, the evidence is building and mechanistic explanations emerging.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jenny Roe	Ch.2	141	4096			Blue health, see CREW review of literature <a href="http://www.hutton.ac.uk/sites/default/files/files/snc/CREW%20Blue%20Health%20project%20FINAL.pdf">http://www.hutton.ac.uk/sites/default/files/files/snc/CREW%20Blue%20Health%20project%20FINAL.pdf</a> My main criticism is the criteria for inclusion i.e. systematic reviews or just general reviews or just general research papers; over what period of time? It's not clear, and therefore difficult to assist in providing additional literature.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Daniel Todorov	Ch.2	141	4097	142	4136	There should be some data and mentioning about the connection between lowering the biodiversity and lowering the access to folk medicine from indigenous people	Included in the section on medicinal plants
Health Review: Julie Garnier	Ch.2	141	4103			Climate change also affects human and animal health directly and indirectly through its impact on biodiversity. Hosts and pathogens were evolving together in a relatively stable climate but the equilibrium is now changing with change in vector distribution and behaviour and rate of evolution of pathogens being much faster than those of host species (Queenan et al 2017) and Kock RA, Khomeiko S, Zuther S, Orynbayev M. Emergency Response to Saiga Mortality Kazakhstan May 2015. Available from: URL: <a href="http://www.cms.int/saiga/sites/default/files/document/Saiga%20MOS3_report%20Kock%20Khomeiko%20Zuther%20Orynbayev%2011062015_eng_1.pdf">http://www.cms.int/saiga/sites/default/files/document/Saiga%20MOS3_report%20Kock%20Khomeiko%20Zuther%20Orynbayev%2011062015_eng_1.pdf</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Marieta Braks	Ch.2	141	4104	141	4105	I would adjust into:	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Julie Garnier	Ch.2	141	4104			Routes of pathogen exposure for humans include through direct contacts with infected animals, through aerosols, through contact with contaminated food, soils or water, and activities ...	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Henrik Lerner	Ch.2	141	4104	141	4106	I think it is important to highlight that there might be different pathways involved in disease transmission. In some cases there might be conflicts between being in nature on the one hand and avoiding diseases on the other hand. However, the risks must be properly evaluated and also pinpointed down to the proper pathway. A recent study highlighting this is Elmerberg et al, 2017: Johan Elmerberg, Charlotte Berg, Henrik Lerner, Jonas Waldenström & Rebecca Hessel (2017) Potential disease transmission from wild geese and swans to livestock, poultry and humans: a review of the scientific literature from a One Health perspective, Infection Ecology & Epidemiology, 7:1, 1300450 I have further below highlighted a few other passages where this reference might be suitable, and I think it is wise to comment on this topic only in one of these passages.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Stefania Paduano	Ch.2	141	4104	141	4113	Hosseini PR et al. 2017 Does the impact of biodiversity differ between emerging and endemic pathogens? The need to separate the concepts of hazard and risk. Phil. Trans. R. Soc. B 372: 20160129. It is interesting this different view on emerging and endemic pathogens.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix



Health Review: Stefania Paduano	Ch.2	141	4104	141	4113	Kilpatrick AM, Salkeld DJ, Titcomb G, Hahn MB. 2017 Conservation of biodiversity as a strategy for improving human health and well-being. Phil. Trans. R. Soc. B 372: 20160131. New review	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Stefania Paduano	Ch.2	141	4104	141	4113	Wood CL, McInturff A, Young HS, Kim DH, Lafferty KD. 2017 Human infectious decrease with urbanization but not with biodiversity. Phil. Trans. R. Soc. B 371: 20160122.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Stefania Paduano	Ch.2	141	4104	141	4113	Dilution effect and amplification effect e.g. Lou Y, Wu J and Wu X. 2014 Impact of biodiversity and seasonality on Lyme-pathogen transmission. Theoretical Biology and Medical Modelling 11:50	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Julie Garnier	Ch.2	141	4106			Ecosystem change AND climate change are risks factors	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Zorica Popovic	Ch.2	141	4106	141	4113	Whilst ecosystem change is recognised as a risk factor for disease emergence and spread, a specific role for biodiversity is not always clear. Increasing diversity would significantly affect the pathogen-carrying species only if those would be ideally abundant within the habitat. However, if there were several potential pathogen hosts, the fluctuations of their abundance wouldn't cause significant changes in disease emergence. But, if there was only one preferred host for a pathogen, the fluctuations of its population will be a significant factor for disease spreading (Popović and Popović, 2011). One mechanism by which biodiversity may reduce disease risk is the "dilution effect", whereby, in ecosystems where hosts of an infectious agent vary in their ability to transmit an infection, increased diversity of potential hosts reduces the risk of disease outbreak. This concept remains controversial, and any such effect is likely highly specific to pathogen and location (e.g. Randolph and Dobson, 2012). However, some evidence for the dilution effect in at least some local contexts has been presented from several European studies (e.g. Ruyts et al., 2016; Khalil et al., 2016; Kedem et al., 2014; Bolzoni et al., 2012) Popović, Z., Popović S. 2011. Forest Transition and Zoonoses Risk. Encyclopedia of Environmental Health. pp. 803-811. Please consider this publications for the chapter 2.3.2: Reid, W.V., Mooney, H.A., 2016. The Millennium Ecosystem Assessment: testing the limits of interdisciplinary and multi-scale science. Current Opinion in Environmental Sustainability 19, 40-46.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Ana R. Ribeiro	Ch.2	141	4107			The occurrence of antibiotics in the environment may promote the selection of antibiotic resistance genes (ARGs) and antibiotic resistant bacteria (ARB). Please see the publications: Manaia, C.M., 2017. Assessing the Risk of Antibiotic Resistance Transmission from the Environment to Humans: Non-Direct Proportionality between Abundance and Risk. Trends in Microbiology 25, 173-181. Rizzo, L., Manaia, C., Merlin, C., Schwartz, T., Dagot, C., Ploy, M.C., Michael, I., Fatta-Kassinos, D., 2013. Urban wastewater treatment plants as hotspots for antibiotic resistant bacteria and genes spread into the environment: A review. Science of The Total Environment 447, 345-360.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Marieta Braks	Ch.2	141	4109	141	4113	I oppose Dilution effect as a general model suggesting a positive (meaning decreasing) effect of biodiversity on disease risk. Of course when you add a host to a system of reservoir hosts this will lead to dilution, but when you add a reservoir host to a system it is not. All depends on which system you look at and whether you consider burden of one disease or total disease burden.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	141	4111	141	4113	Could a case study example from one of these European studies be briefly outlined? This would help to fully illustrate the dilution effect concept.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	141	4111	141	4113	Is this evidence strong or weak?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	141	4114	141	4116	Could a reference or example be provided of a zoonotic disease posing a major public health threat in the ECA region?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Margarida Simões	Ch.2	141	4125			After reference there is a lose letter 'k'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Theofilos Poutahidis	Ch.2	141	4162	143	4190	<p>2.3.2.4 Medicines and Biomedical research</p> <p>This subchapter seems that would benefit from some clarification and focus. Currently, it starts with reports about legal and ethical issues relating to drug development from natural resources. Then it ends up with the potential of marine bacteria and plant endophytic fungi for contributions in drug discovery. First, this text seems to need a few introductory lines explaining why biodiversity is important in biomedical research. Something similar to the introductory text of 2.2.2.4 Provision of Medicinal resources.</p> <p>Chapter 9 of the 2015 WHO/CBD State of knowledge review is an excellent guide for that. Also, the two following papers</p> <p>Takahashi Y. Continuing fascination of exploration in natural substances from microorganisms. Biosci Biotechnol Biochem. 2017 Jan;81(1):6-12.</p> <p>Shen B.A. New Golden Age of Natural Products Drug Discovery. Cell. 2015 Dec 3;163(6):1297-300.</p> <p>It is unclear why marine cyanobacteria and plant endophytic fungi are selectively mentioned and other sources are overlooked. What about fresh water microalgae for example?</p> <p>Finamore A, Palmery M, Bensehaila S, Peluso I. Antioxidant, Immunomodulating, and Microbial-Modulating Activities of the Sustainable and Ecofriendly &lt;i&gt;Spirulina&lt;/i&gt;. Oxid Med Cell Longev. 2017;2017:3247528.</p> <p>Wu Q, Liu L, Miron A, Klímová B, Wan D, Kuža K. The antioxidant, immunomodulatory, and anti-inflammatory activities of Spirulina: an overview. Arch Toxicol. 2016 Aug;90(8):1817-40.</p> <p>In general, mentioning bacteria for drug discovery parallels the concept of pro- and postbiotics. Along these lines there are numerous reports published at 2016 and 2017 describing similar effects of many different types of bacteria. Don't bacteria with known probiotic properties belong to our natural microbial ecosystem? Why only marine bacteria or the endophytes are considered and mentioned here as "natural" source bacteria? The lack of information regarding microbial diversity and contributions of environmental, food grade and commensal microbes in human health in chapter 2 makes it even more difficult to the reader to understand clearly the concept of subchapter 2.3.2.4</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Julie Garnier	Ch.2	142	4135			<p>Training and investment in developing One health approach is being addressed currently through European funded NEOH (Network for the Evaluation of One Health) as well as development of One Health academic courses (One Health master developed by Royal Veterinary College and London School of Hygiene and Tropical medicine in London)</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	142	4137	142	4161	<p>Climate change is mentioned, but only as driver of disaster risk. I really miss more elaboration on the biodiversity-climate-health nexus. Both climate change and biodiversity are expected to have an impact on human health. However, they do not operate in isolation from each other. For example: Climate change is expected to greatly affect future biodiversity/ES, while many climate mitigation effort will adopt nature-based solutions/options. There is an urgent need to account for such biodiversity-climate interlinkages in assessing associated health implications (i.e. biodiversity-health-climate nexus). [Note: see for example the upcoming conference on this issue in Bonn June 27-29: <a href="http://www.europarc.org/news/2017/01/biodiversity-health-face-climate-change-conference/">http://www.europarc.org/news/2017/01/biodiversity-health-face-climate-change-conference/</a>]</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Hanna Skryhan	Ch.2	142	4138	142	4161	<p>add information about consequences of the Chernobyl disaster (may be in special Box). I can provide links and publications or summarize information published in Russian in Belarus, Russia and Ukraine, if authors will agree with comment</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	142	4138	142	4161	<p>Nature based solutions are gaining increasing political support at the European Union level. This needs appropriate acknowledgement in this section. For details <a href="https://ec.europa.eu/research/environment/index.cfm?pg=nbs">https://ec.europa.eu/research/environment/index.cfm?pg=nbs</a></p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	142	4141	142	4142	<p>This is a large statement to make (the health burden of disasters is likely to increase as a result of climate change). I feel that is could be expanded upon and more references provided.</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
PESC-4: Frederic Lemaître	Ch.2	142	4150	142	4150	<p>it would be good to reference Nature based solutions as well as EbA. A reference detailing this umbrella concept that includes both adaptation and mitigation measures would be: H. Eggermont, E. Ballan, J.M.N. Azevedo, V. Beumer, T. Brodin, J. Claudet, et al. Nature-based solutions: new influence for environmental management and research in Europe GAIA - Ecological Perspectives for Science and Society, 24 (2015), pp. 243–248</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Graciela Rusch	Ch.2	142	4154	142	4154	<p>This could be linked to the necessity of maintaining bio / genetic diversity of organisms that generate food.</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Graciela Rusch	Ch.2	142	4170	142	4170	<p>Here the benefit sharing mechanism of the Nagoya protocol on Access and benefit-sharing of genetic resources (CBD) could be referred to. If some of these plants are cultivated later, the Nagoya protocol can be in conflict with the regulations under the International Treaty on Plant Genetic resources under FAO</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Gerard Clarke	Ch.2	142	4170	142	4175	<p>An important point for sure but may need more balance. Is it plausible that indigenous communities could scale up for more widespread distribution and maximum benefits at the population level? More dialogue between stakeholders needed on this point.</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Maud Huynen	Ch.2	143	4191	143	4199	<p>I'm happy that this section is included but it really needs strengthening. There is an urgent need for integrated, system-based approaches. The Rockefeller Foundation–Lancet Commission on planetary health report, for example, stresses the need for, among others, improve understanding of potential non-linear state shifts in the natural systems underpinning human health, expanding transdisciplinary research activities, integrated surveillance systems.</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Henrik Lerner	Ch.2	143	4192	143	4199	<p>This paragraph could be further developed. The sentence ending with reference to Sandifer et al. gives the implication that new coalitions must be promoted. At other places, broad approaches such as One Health, EcoHealth etc. are mentioned but here I am unsure if these approaches will fit into the claim of new coalitions. I think this paragraph needs to address that. The sentence ending with Oosterbroek et al. might be improved by Elmerg et al mentioned above.</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Stefania Paduano	Ch.2	143	4192	143	4199	<p>Rydin et al 2012. Shaping cities for health: complexity and the planning of urban environments in the 21st century. Lancet 379: 2079–108</p>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Emma Goring	Ch.2	143	4197	143	4199	Is it possible to identify institutions/research groups/organisations/funders already engaging in this sort of research?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Rebecca Lovell	Ch.2	143	4200			The section on integrating policy etc. is useful and generally well written. The discussion of the ECA work is very detailed but is only descriptive. Is this necessary? Could policy/practice opportunities be identified?	We give an overview of what is mentioned in the CBD reports as indication of to what extent countries find these issues important, not to assess policy opportunities
Hanna Skryhan	Ch.2	143	4210	143	4217	turn the text into the diagram	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Emma Goring	Ch.2	144	4230	144	4231	Again, mental health effects are mentioned in passing but not expanded upon. Could examples of mental health benefits be provided here or references given?	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Jukka-Pekka Jäppinen	Ch.2	144	4234	144	4235	Better than reference Jäppinen & Heliölä 2015 (this may also stay as second reference), there should be a reference to the original report Jäppinen et al. 2014 (Jäppinen, J.-P., Tyrväinen, L., Reinikainen, M. & Ojala, A. (eds.) 2014. Luonto lähelle ja terveydeksi. Ekosysteemiopalvelut ja ihmisen terveys Argumenta-hankkeen (2013–2014) tulokset ja toimenpidesuosituksukset (Nature for Health and Well-Being in Finland – results and recommendations from the Argumenta project Ecosystem Services and Human Health (2013–2014)). Suomen ympäristökeskuksen raportteja (Reports of the Finnish Environment Institute) 35/2014. 104 pp. Helsinki). <a href="https://helda.helsinki.fi/handle/10138/153461">https://helda.helsinki.fi/handle/10138/153461</a>	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Henrik Lerner	Ch.2	144	4244	144	4246	Encouraging people to be more in the wild might increase the risk of spreading disease. However, the true risk might be very limited. Compare this with Elmerg et al. mentioned above.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Marieta Braks	Ch.2	144	4246	144	4247	"for the same reason" the reason in the preceding sentence is opposing. I do not understand.	This is adapted and included in the new appendix
Hanna Skryhan	Ch.2	144	4248	144	4254	replace to the Ch.6	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
PESC-4: Kristina Raab	Ch.2	144	4255	146	4312	knowledge gaps should be addressed in the knowledge gap section rather than in the middle of some other section => include this text in section 2.5	Adapted in the new text
Health Review: Maud Huynen	Ch.2	144	4255			What report is meant here. There is no reference. Or do you mean the Appendix 2.7.7? this is not clear.	Adapted in the new appendix
Health Review: Henrik Lerner	Ch.2	144	4256	144	4256	In order to make such an IPBES health assessment one need to further analyze the underlying definition of health. Initially stated in the chapter a rather broad definition of health seems to be used. In the WHO & SCBD report this section builds on, the WHO definition of health is fundamental. Unfortunately there has been a major theoretical discussion of the shortcomings of the WHO definition, although it has merits of being a political vision of improving health. I do believe a more thorough analysis of what kind of health one strives for is needed. See for example two papers of mine where I discuss this for One Health: Henrik Lerner & Charlotte Berg (2015) The concept of health in One Health and some practical implications for research and education: what is One Health?, Infection Ecology & Epidemiology, 5:1, 25300, DOI: 10.3402/iee.v5.25300 Lerner, H. 2016. Conceptions of health and disease in plants and animals. In: T. Schramme & S. Edwards. Handbook of the Philosophy of Medicine. Springer Science + Business Media, Dordrecht. DOI 10.1007/978-94-017-8706-2_19-1 Lerner, H. 2016. Conceptions of health and disease in plants and animals. In: T. Schramme & S. Edwards. Handbook of the Philosophy of Medicine. Springer Science + Business Media, Dordrecht. DOI 10.1007/978-94-017-8706-2_19-1	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Rebecca Lovell	Ch.2	144	4256			I agree that an IPBES health assessment is necessary, however it should be sensitively designed (perhaps following a period of expert prioritisation?) so as not to waste time/resources and reproduce the various existing reviews. However, I am not sure the evidence as discussed in the preceding sections will convince IPBES of this.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Suzanne Skevington	Ch.2	144	4256			Need to have an IPBES Conclusion on Quality of life and Wellbeing and its relationship with biodiversity and health. This would be commensurate with the statement in the first paragraph of Chapter 2. There is considerable need for a cross-cultural study with a wide range of different cultures world-wide, to be able to draw global conclusions with confidence. The WHO (2000) link you already include to their document on Traditional Medicines recommends using the WHOQOL to assess quality of life in Annex IX. This should be brought out in the Conclusion. Also a review by Lercher (2004) (see ref in Key recommendations)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Konstantinos Tzoulas	Ch.2	144	4256	146	4312	First, the sentence in lines 4192-4195 is contradictory. It starts by saying this is not a matter of just research design, and then goes on to talk about things that are indeed a matter of research design (i.e. establishing causation). Second, the information mentioned in relation to appendix 2.7.7 (lines 4201-4231) reflects political priorities, not necessarily scientific priorities. The distinction and the implications need to be made clear. Third, the European Centre for Environment and Human Health, the Health Walks, the Green Gym, and green exercise initiatives in the UK could also be mentioned in lines 4232-4247). Fourth, yes the need exists for a systematic review of knowledge as indicated in knowledge gap 1 (lines 4256-4264). Fifth, the knowledge gap 2 ought to acknowledge the need for effective communication, co-operation, and integration amongst the action of different institutions (lines 4265-4278). Finally, knowledge gaps 4, 5 and 6 need setting in the context (i.e. acknowledging both the biomedical and public health models, and then justifying the focus on the biomedical model accordingly; lines 4292-4312).	Thanks for the valuable comments, which we unfortunately cannot fully integrate due to severe downsizing of the health text. The first remark led to a change in the new appendix. The second remark: we never interpreted this a purely political or scientific. Third remark: we cannot add more examples due to limited space. We partly improved the knowledge gaps in the appendix.
Health Review: Malcolm Ward	Ch.2	144	4256	145	4264	Also consider Health Impact Assessment which should also identify links, relationships and inform policy recommendations - <a href="http://www.who.int/hia/en/">http://www.who.int/hia/en/</a>	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Emma Goring	Ch.2	144	4257	144	4257	How will biodiversity-health relationships be 'more appropriately' assessed? What will assessment criteria or protocols look like?	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Bryan W. Brooks	Ch.2	145	4265			Identifying the one health concept here was useful. However, it should have, in my opinion, been introduced at the beginning of the health portion of chapter 2, and provided an guiding theme for demonstrated the various connections among human and ecosystem health and NCPs. I recommend reviewing this document: <a href="https://www.ncbi.nlm.nih.gov/pubmed/27717067">https://www.ncbi.nlm.nih.gov/pubmed/27717067</a> . Harmful algal blooms in inland and coastal waters, for example, represent a time example of a one health issue for ECA because these often occur when NCP are stressed. I recommend this article: Brooks BW, Lazorchak JM, Howard MDA, Johnson MV, Morton SL, Perkins DAK, Reavie ED, Scott GI, Smith SA, Steevens JA. 2016. Are harmful algal blooms becoming the greatest inland water quality threat to public health and aquatic ecosystems? Environmental Toxicology and Chemistry 35: 6-13.	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.

Health Review: Bryan W. Brooks	Ch.2	145	4270	145	4300	Biomonitoring programs for humans and ecosystems should be developed and implemented as a coordinated activity throughout Europe and East Asia. For example, programs such as UBA's environmental specimens bank ( <a href="http://www.umweltbundesamt.de/en/topics/health/assessing-environmentally-related-health-risks/environmental-specimen-bank">http://www.umweltbundesamt.de/en/topics/health/assessing-environmentally-related-health-risks/environmental-specimen-bank</a> ) in Germany and CDC's NHANES program in the USA ( <a href="https://www.cdc.gov/nchs/nhanes/index.htm">https://www.cdc.gov/nchs/nhanes/index.htm</a> ) would support the NCP knowledge gaps identified here, because data from these activities can then be directly linked to health status and the rise of noncommunicable diseases.	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Emma Goring	Ch.2	145	4279	145	4281	What sort of data is needed? How will this be collected? Who will conduct the research? Who will fund the research? Possible fundingsources would be useful to identify here.	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Rebecca Lovell	Ch.2	145	4279			This section needs to be re-drafted and language tightened, some of the points are a bit confused.	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Rebecca Lovell	Ch.2	145	4292			Natural Experiments offer huge potential here too. There have been reviews of biodiversity-health (we did one as above) and see Dean, J., et al. (2011). "Does biodiversity improve mental health in urban settings?" Medical hypotheses 76(6): 877-88 Again why identify water as a specific feature? Why not other other elements such as woods, geodiversity etc.?	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Sjerp de Vries	Ch.2	145	4294	145	4295	Has this been mentioned before? References?	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Gerard Clarke	Ch.2	145	4301	145	4305	Agreed but also some research ongoing that should be acknowledged e.g. work of Graham Rook and others <a href="http://journals.sagepub.com/doi/abs/10.1177/1757913916650225?url_ver=Z39.88-2003&amp;rft_id=ori:rid:crossref.org&amp;rft_dat=cr_pub%3dpubmed">http://journals.sagepub.com/doi/abs/10.1177/1757913916650225?url_ver=Z39.88-2003&amp;rft_id=ori:rid:crossref.org&amp;rft_dat=cr_pub%3dpubmed</a> <a href="http://www.pnas.org/content/110/46/18360.long">http://www.pnas.org/content/110/46/18360.long</a> <a href="http://www.pnas.org/cgi/pmidlookup?view=long&amp;pmid=27185913">http://www.pnas.org/cgi/pmidlookup?view=long&amp;pmid=27185913</a>	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Sjerp de Vries	Ch.2	145	4305			Kuo (2015) in <i>Frontiers of Psychology</i>	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Suzanne Skevington	Ch.2	146	4265			Point 2. Not just policy integration from these intergovernmental organsations but also integration between departments/divisions within them. Perhaps you might recommend an initiative to 'mainstream' biodiversity health and quality of life at Deputy Director General level, in each UN organisation for a period, to create a network and move it forward?	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: Sjerp de Vries	Ch.2	146	4307			Mediate? I assume moderate is intended.	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Health Review: James JT Connolly	Ch.2	146	4308	146	4309	Lower SES populations are also the most vulnerable to being displaced from access to new and improved urban natural infrastructure meant to provide health benefits.	We partly improved the knowledge gaps in the appendix, but cannot include it in the new tekst due to drastic downsizing needs.
Johannes Langemeyer	Ch.2	146	4333	146	4339	Maybe absolute numbers are more intuitive.	in revised section 2.3.3 both absolute numbers and percentages are used
Graciela Rusch	Ch.2	146	4333	146	4333	In the section about cultural landscapes, it would be good to try to distinguish the value of cultural heritage (what do humans wish to preserve of how we have shaped nature in the past (and has survived the pass of time), vs new ways of 'transforming nature' for our use, that will happen as these systems being part of a dynamic socio-ecological system.	this has been addressed in revised section 2.3.3 that now has two sections the first on vlave thorough sue and the second on vlave through protecion and beyond use
Graciela Rusch	Ch.2	146	4341	146	4341	Are these percentages of 'protected cultural landscapes'? This is not the same as saying that Western Europe has 'more cultural landscapes'? The other regions are likely to have considerable area of "cultural landscapes".	the text has been revised so it is now clear when the percetnages or numbers are for partiaular sub-regions
Roger Keller	Ch.2	147	4387	148	4389	The "European Landscape Convention (ELC)" should be mentioned much more prominently in this chapter. The ELC has a very inclusive understanding of landscape (see <a href="http://www.coe.int/en/web/landscape/home">http://www.coe.int/en/web/landscape/home</a> ) and could serve as a kind of role model how landscape and biodiversity can be appreciated by different stakeholders.	given space conrants introduced after the SOD the mention of the ELC had to be removed and this section had to focus on material that covered the whole of the ECA region
Health Review: Bryan W. Brooks	Ch.2	151	4490			Water reuse was not examined, yet reuse if done well and safely represents and important management strategy to meet SGDs. In parts of ECA that are drought susceptible	given space conrants introduced after the SOD this sentence was removed and water quantity issues are discussed in section 2.2.16
Brendan Coolsaet	Ch.2	151	4492	151	4909	Literature on Justice/equity in the context of biodiversity generally talks about 3 dimensions: distribution, procedure/participation, and recognition. The last one is missing from this section. (on recognition and conservation see eg. Franks, Martin & Schreckenberg (2016) From livelihoods to equity for better protected area conservation; Franks & Schreckenberg (2016) Advancing equity in protected area conservation; Martin et al. (2016) Justice and conservation: The need to incorporate recognition; Zafra-Calvo et al. (2017) Towards an indicator system to assess equitable management in protected areas; etc.)	This has been added and some of the literature has also been added.
Brendan Coolsaet	Ch.2	151	4492	151	4909	The structure of section 2.3.4 is problematic. The distinction intra/inter-generational should probably be made upfront (section 2.3.4.1), as this does not only relate to distribution.	As we could not assess much on other aspects of justice than distributional justice for ECA empirically, we decided to keep this structure.
Brendan Coolsaet	Ch.2	151	4492	151	4909	What is the rationale of making 'health equity' a separate section? This clearly deals with the distribution of non-material NCPs	The health section has now been integrated in the distributive justice section.
Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2	151	4492	151	4909	Literature on Justice/equity in the context of biodiversity generally talks about 3 dimensions: distribution, procedure/participation, and recognition. The last one is missing from this section. (on recognition and conservation see eg. Franks, Martin & Schreckenberg (2016) From livelihoods to equity for better protected area conservation; Franks & Schreckenberg (2016) Advancing equity in protected area conservation; Martin et al. (2016) Justice and conservation: The need to incorporate recognition; Zafra-Calvo et al. (2017) Towards an indicator system to assess equitable management in protected areas; etc.)	This has been added and some of the literature has also been added.
Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2	151	4492	151	4909	The structure of section 2.3.4 is problematic. The distinction intra/inter-generational should probably be made upfront (section 2.3.4.1), as this does not only relate to distribution.	As we could not assess much on other aspects of justice than distributional justice for ECA empirically, we decided to keep this structure.
Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2	151	4492	151	4909	What is the rationale of making 'health equity' a separate section? This clearly deals with the distribution of non-material NCPs	The health section has now been integrated in the distributive justice section.
Health Review: Bryan W. Brooks	Ch.2	151	4492			I appreciated reading the environmental justice section. However, human exposures to environmental contaminants associated with poor city planning, waste management and services provided by ecological buffers was not considered. This consideration is particularly relevant for marginalized populations in urban regions in East Asia. I recommend including consideration regarding the exposome (see <a href="http://www.sciencedirect.com/science/article/pii/S0160412016309187">http://www.sciencedirect.com/science/article/pii/S0160412016309187</a> ). Biomonitoring programs such as UBA's environmental specimens bank and the US CDC's NHANES program would support such efforts, which can then be directly linked to health and the rise of noncommunicable diseases.	the section is not about general environm. equity, but on contributions of ecosystems to support equity/prevent inequity, e.g. through removal of pollutants.
Mark Rounsevell	Ch.2	151	4493	151	4493	We might want to reflect on whether this sub-section is moved to Ch1, as part of the introduction to the assessment. To discuss.	We decided it should stay here.
Brendan Coolsaet	Ch.2	151	4493	151	4493	Section covers both justice and equity, but justice is not reflected in the title	This has been added.
Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2	151	4493	151	4493	Section covers both justice and equity, but justice is not reflected in the title	
Amor Torre-Marín	Ch.2	151	4513	151	4513	Section 2.4.2 does not exist	This has been added.
Brendan Coolsaet	Ch.2	151	4514	151	4516	Lack of participation is a form of injustice in its own right. As noted on line 4515 and 4516, it's about the power and procedural aspects, not just about distributional outcomes (an outcome which is distributively just/equitable, may still be procedurally unjust/inequitable)	this has been corrected. The aim in this section is to clarify the conceptual differences and the importance of distributive and procedural equity issues in their own right.

Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2	151	4514	151	4516	Lack of participation is a form of injustice in its own right. As noted on line 4515 and 4516, it's about the power and procedural aspects, not just about distributional outcomes (an outcome which is distributively just/equitable, may still be procedurally unjust/inequitable)	This was reformulated. The aim in this section is to clarify the conceptual differences and the importance of distributive and procedural equity issues in their own right.	
Amor Torre-Marín	Ch.2		151	4523	151	4523	Section 2.4.2 does not exist	this has been corrected.
Health Review: James JT Connolly	Ch.2		152	4546	4549	152	This is an important observation that has been seen in urban and non-urban contexts. Stressing that this is not simply a non-urban ecosystem service challenge may be desirable here.	This part has been deleted when shortening.
Brendan Coolsaet	Ch.2		152	4554	152	4556	Genetic resources have both material and non-material (information) components, both of which can be public and private.	This part has been deleted when shortening.
Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2		152	4554	152	4556	Genetic resources have both material and non-material (information) components, both of which can be public and private.	This part has been deleted when shortening.
Germany	Ch.2		153	4600	153	4604	see also summary: While this is definitely an important statement, it remains at a very general level here. Where are examples how this can work in practice?	This part has been deleted when shortening.
Johannes Langemeyer	Ch.2		154	4633	154	4638	Consider also potential negative effects for low income groups from green gentrification / expulsion (this is an open research frontier but e.g. hedonic pricing models have shown increases in housing prices close to urban parks).	We had to rely on published data that came out of the systematic review approach.
Health Review: James JT Connolly	Ch.2		154	4633	4638	154	As well, access to greenspace is a multi-faceted issue. The type, quality, and size if the space can greatly affect the health benefits it imparts. Use is also determined in part by the social and cultural context of the space.	Some studies that point to the social context were added from a text that already appeared below.
Allan Watt	Ch.2		154	4650	155	4656	This section is new but relates to a previous mention of conflict in the FOD, which I suggested should be expanded to consider conservation conflict more widely. The section deals with what is termed (here) as human-wildlife conflict but (as pointed out in relation to the FOD), the conflicts referred to here may be defined as conservation conflicts. Indeed, one of the papers cited here refers to a similar conflict in this way. See e.g. Redpath et al. (2013) Understanding and managing conservation conflicts. Trends in Ecology and Evolution 28, 100-109, particularly the section on defining conservation conflicts. Given that this section deals with intragenerational equity and justice, the conflict is not really between people and wildlife but between different groups of people.	A new section on Human-Wildlife conflicts was written, based on an elaborate review of the literature. An appendix now provides an overview of this literature.
Hanna Skryhan	Ch.2		154	4650	155	4656	links on the publications about human-wildlife conflicts: Эффективность социальных институтов и проблема соответствия в экологическом управлении — конфликт «человек — бурый медведь» в природном парке «Ергаки» in <i>Применение метода кейсов в комплексных социально-экологических исследованиях</i> . Под общей редакцией О.В. Лихачевой, А.Ю. Скриган и А.Д. Шарубо, Псков, 2017	We could only take into account English literature.
Finnish Government	Ch.2		155	4655	155	4656	Also the moose (Alces alces) (Horne & Petäjästö 2003. Reference: Horne, P. & Petäjästö, L. 2003. Preferences for alternative moose management regimes among Finnish landowners: a choice experiment approach. <i>Land Economics</i> 79(4): 472-482	Reference was added.
ECA values liaison group	Ch.2		155	4657			Consider referring to 'options for maintaining NCP' in this text. It is not covered in Section 2.2 on NCP, but it is here.	This was added
Dan Faith	Ch.2		155	4657		4660	So problem in saying - "Intergenerational equity/justice requires the maintenance of nature, i.e. a resilient and productive state of ecosystems that allows the future provision of NCPs... Passing on nature to future generations" because this wrongly links only to ecosystem services ...NCP18 needs to be considered	The focus of the section was to link equity/justice to ES. Sentence was added: Within IPBES, this capacity of ecosystems is considered an overarching NCP category (Maintenance of options).
Brendan Coolsaet	Ch.2		155	4683	157	4760	Health equity section seems to be using equity and equality interchangeably. This should be clarified.	We have taken this into account
Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2		155	4683	157	4760	Health equity section seems to be using equity and equality interchangeably. This should be clarified.	We have taken this into account
Amor Torre-Marín	Ch.2		155	4684	155	4684	"well established": confidence term? if so to be used between brackets. If not alternative wording should be used.	This was no longer applicable in the new text
Hanna Skryhan	Ch.2		156	4699	156	4718	need to short	it has been shortened now
Health Review: Suzanne Skevington	Ch.2		157	4750			Providing health equity depends in part, on being able to assess quality of life outcomes from health interventions sensitively, appropriately and accurately. The developers of some measures have gone to considerable effort to improve the comparisons between people living in different cultures and situations by adapting each language version of a measure to the culture concerned so that it is appropriate and acceptable to those who complete it. The WHOQOL Group developed advanced techniques to improve the accuracy of cross-cultural comparisons in the WHOQOL measures (Bowden and Fox-Rushby, 2004; Mac Dowell, 2006), so improving the chances that funding would be more equitably distributed between countries (and between cultures within countries where different language versions have been developed). An international protocol exists to carry out the same work for all 7,300 languages. We are aware of around 90 language versions of the WHOQOL-BREF.	Thanks for the valuable comment; due to a need for drastic downsizing the section, we were not able to incorporate this into the new text
Brendan Coolsaet	Ch.2		159	4771	161	4867	Language of introductory paragraph should be improved. The whole section on procedural justice reads quite poorly	We worked on the language and clarity
Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2		159	4771	161	4867	Language of introductory paragraph should be improved. The whole section on procedural justice reads quite poorly	We worked on the language and clarity
Johannes Langemeyer	Ch.2		160	4807	160	4826	Make it a box!	Thanks for the valuable comment; due to a need for drastic downsizing the section, we were not able to incorporate this into the new text
Health Review: Margarida Simões	Ch.2		160	4807	160	4826	The ecotourism example is not so similar to the same practice in the ECA region. Closer examples should be brought in, adding the risks and benefits in the region where charter flights, constant traveling and "experiences" collections induce new sustainable challenges. This issue is very delicate...regulations framework should not be too permissive but on the other hand it should not be inaccessible to all of us (a Human right to every Human being)	Thanks for the valuable comment; due to a need for drastic downsizing the section, we were not able to incorporate this into the new text
Brendan Coolsaet	Ch.2		160	4808	159	4826	The example of ecotourism barely describes issues of procedural equity. I am not sure what its added value is for this section. The procedural aspects should be developed, or it should be moved to the section on distribution.	Thanks for the valuable comment; due to a need for drastic downsizing the section, we were not able to incorporate this into the new text
Brendan Coolsaet	Ch.2		160	4808	159	4826	It should probably be noted that in the case of ecotourism, injustice may arise before the actual distribution of potential benefits. Non-material NCP may be affected through the activity of tourism (eg. Exclusion from certain areas reserved for tourists, commodification of sacred land, ...)	Thanks for the valuable comment; due to a need for drastic downsizing the section, we were not able to incorporate this into the new text
Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2		160	4808	159	4826	The example of ecotourism barely describes issues of procedural equity. I am not sure what its added value is for this section. The procedural aspects should be developed, or it should be moved to the section on distribution.	Thanks for the valuable comment; due to a need for drastic downsizing the section, we were not able to incorporate this into the new text

Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2	160	4808	159	4826	It should probably be noted that in the case of ecotourism, injustice may arise before the actual distribution of potential benefits. Non-material NCP may be affected through the activity of tourism (eg. Exclusion from certain areas reserved for tourists, commodification of sacred land, ... )	Thanks for the valuable comment; due to a need for drastic downsizing the section, we were not able to incorporate this into the new text
Johannes Langemeyer	Ch.2	160	4829	161	4850	Strengthen the link to ES / NCP.	This is indeed applicable in a general sense; we took this into account in redraft and downsizing the text
Brendan Coolsaet	Ch.2	161	4868	161	4868	Add section on recognition (see references in previous comment)	This section was re-written on the basis of new analysis and send for external revision.
Germany	Ch.2	161	4868	161	4884	Please refer to the IPBES values guide (Preliminary guide regarding diverse conceptualization of multiple values of nature and its benefits, including biodiversity and ecosystem functions and services (deliverable 3 (d))). In general, the section on values is very short and the part on social dominated values does not go very much into details.	This section was re-written on the basis of new analysis and send for external revision. We now try to include different valuation languages of IPBES guidelines
Belgian government - Hilde Eggermont (IPBES National Focal Point)	Ch.2	161	4868	161	4868	Add section on recognition (see references in previous comment)	This section was re-written on the basis of new analysis and send for external revision.
Finnish Government	Ch.2	161	4868	163		The valuation part 2.3.5. needs to be readable independently without rummaging appendices.	This section was re-written on the basis of new analysis and send for external revision.
Finnish Government	Ch.2	161	4876	161	4878	Analysing preferences is the basis for monetary valuation. In monetary valuation the interest is often in the marginal changes in wellbeing. TEV is seldom referred.	We now include monetary valuation
Graciela Rusch	Ch.2	161	4878	161	4878	Monetary valuation can be useful in several other contexts, where 'communicating' with economic sectors is of high relevance. Also to facilitate the design and implementation of policy instruments or solutions (e.g. examples of water management solutions) that are addressing economic decisions (other than mere regulations).	We now include monetary valuation
Germany	Ch.2	161	4880	161	4883	How can this contribute to decision-making? How can decision makers trade-off very different values when making decisions?	This section was re-written on the basis of new analysis and send for external revision. It includes its importance for policy making
Finnish Government	Ch.2	161	4881	161	4881	Value pluralism framework need to be opened and clarified	This section was re-written on the basis of new analysis and send for external revision. We now try to include different valuation languages of IPBES guidelines
Health Review: James JT Connolly	Ch.2	161	4884	4898	162	Excluded from this discussion is the growing knowledge of contrasting values attached to CNP in urban settings. See, for example: Langemeyer, Johannes, et al. "Contrasting values of cultural ecosystem services in urban areas: The case of park Montjuïc in Barcelona." <i>Ecosystem Services</i> 12 (2015): 178-186.	We do not understand this comment, sorry!
Health Review: Malcolm Ward	Ch.2	161	4884	161	4891	May be worth referencing Social Return on Investment that is finding increasing use both in the environment and the health sectors: <a href="http://www.socialvalueuk.org/resources/sroi-guide/">http://www.socialvalueuk.org/resources/sroi-guide/</a>	We do not understand this comment, sorry!
David González	Ch.2	161	4889	161	4891	Non-material NCPs are most valued in socio-cultural terms according to graph 2.74, this should go through the SPM. It is probable that Material NCPs will have the highest economic value, but this is not the case for socio-cultural values, and these are the tradeoffs that should be shown for decision-makers.	We now include this reflection. Thanks for pointing it out.
Finnish Government	Ch.2	162	4892	162	4892	"A high percentage of research in social valuation" is unclear expression	Now it is rephrased. Thanks for pointing it out.
Graciela Rusch	Ch.2	162	4896	162	4896	The lack of appreciation of regulating services in other ecosystems maybe because these have been poorly studied and their importance sufficiently recognized (soil regulating functions, pollination, pest control by natural enemies in agriculture; genetic diversity as a asset to cope with environmental change/fluctuations (e.g. forestry and agriculture). The characteristics of the agricultural landscape can determine the capacity to generate pollination and pest control functions.	We agree with this statement, but we could not find any statement like this in the publications revised.
Finnish Government	Ch.2	163	4906	163	4906	Would have been nice to be able to comment on 2.3.5.2	This section has been provided for comments in September 2018
Graciela Rusch	Ch.2	163	4910	163	4910	This section repeats what has been said earlier?	As we agree with the reviewer and because we needed to edit down the whole text, this section has been deleted
Health Review: Suzanne Skevington	Ch.2	163	4910			With reference to 'Wellbeing is measured incorrectly...' (MEA 1) see comments No 4 above. On capturing the critical dimensions...' the WHOQOL assesses physical, psychological, social and environmental and spiritual QoL in its measures. The five domains map onto many of the MEAs 'critical dimensions of human wellbeing' as they were initially identified through consensus between researchers and users living in 15 culturally diverse cultures world-wide. Ref: The WHOQOL Group (1995) The World Health Organisation Quality of Life assessment (WHOQOL): position paper from the World Health Organisation. <i>Social Science &amp; Medicine</i> , 41 (10) 1403-1409. Skevington SM, Sartorius N, Amir M. and the WHOQOL Group (2004) Developing methods for assessing quality of life in different cultural settings: the history of the WHOQOL instruments. <i>Social Psychiatry &amp; Psychiatric Epidemiology</i> , 39 (1) 1-8.	This comment is not applicable as we deleted this section because its repetition
Health Review: Malcolm Ward	Ch.2	163	4910	164	4934	The Welsh 'Well-being of Future Generations (Wales) Act 2015 provides one of the first international examples of a legislative approach to promoting health and well-being through a sustainable development lens : <a href="http://www.legislation.gov.uk/anaw/2015/2/pdfs/anaw_20150002_en.pdf">http://www.legislation.gov.uk/anaw/2015/2/pdfs/anaw_20150002_en.pdf</a> and <a href="https://assemblyinbrief.wordpress.com/tag/future-generations/">https://assemblyinbrief.wordpress.com/tag/future-generations/</a>	This comment is not applicable as we deleted this section because its repetition
Finnish Government	Ch.2	163	4920	163	4920	Reference needed	This comment is not applicable as we deleted this section because its repetition
Finnish Government	Ch.2	163	4920	163	4920	Reference is needed.	This comment is not applicable as we deleted this section because its repetition
Thomas Brooks	Ch.2	164	4935	164	4937	Clarify in Fig 2.76 legend whether these are studies that show positive interlinkages, or whether they are studies that show any interlinkages (positive or negative). Also clarify whether these are studies from ECA specifically.	This comment is not applicable as we deleted this section because its repetition
ECA values liaison group	Ch.2	164	4938	164	4954	The text introducing the relevance to SDGs and Aichi targets could do with explicit reference to good quality of life, as many of the targets actually refer to GQOL in addition to or instead of NCPs. Human wellbeing is now mentioned here and there, but quality of life is not. Although the following text hereafter mainly deals with NCPs, it would be nice to underline that GQOL is also implicitly and explicitly covered by the targets.	References to specific aspects of QoL are now indicating, mostly related with SDGs
Health Review: Margarida Simões	Ch.2	164	4938	167	5002	SDGs could be easily displayed as in Fig 2.79 and appendix 2.79, and than related to Aichi Targets for a better understanding of Fig. 2.77.	Figure 2.77 has been improved by adding colors in the lines. NCP names are indicated in Table 2.1. and the List of Aichi targets and SDGs are indicated in chapter 1
Mark Rounsevell	Ch.2	164	4939	164	4946	Most of this is introduced in Ch1, so no need to repeat here.	We deleted the introductory paragraph.
Health Review: Malcolm Ward	Ch.2	164	4945	164	4946	To support the enforcement and monitor the progress of the Well-being of Future Generations (Wales) Act 2015 a set of key indicators are being developed: <a href="http://gov.wales/docs/desh/publications/160316-national-indicators-to-be-laid-before-nafw-en.pdf">http://gov.wales/docs/desh/publications/160316-national-indicators-to-be-laid-before-nafw-en.pdf</a>	This is not applicable anymore as this text goes in chapter 1
Graciela Rusch	Ch.2	165	4977	165	4980	Could this be expanded to reflect more generally on public participation and also, on what is mentioned earlier, about power relationships and the dominance of certain societal groups (e.g. larger agri-businesses, corporations and sectors (energy)) regarding decisions about the environment and biodiversity.	This section is about how NCP are mentioned in SDG and Aichi targets, so there is no room for reflections about public participation, which is a topic of chapter 6.
Health Review: Suzanne Skevington	Ch.2	167	5011			'Psychological and physical experiences are well studied, '...but data on other important aspects of quality of life is very sparse, particularly from studies that are cross-cultural.	this statement has been removed but the assessment presents a range of data on other aspects of QoL including health, heritage, identity equity and economic value

Health Review: Malcolm Ward	Ch.2	167	5021	167	5021	To inform progress of the Well-being of Future Generations (Wales) Act 2015 there is a require to generate 'Future Trends' reports: <a href="http://gov.wales/docs/statistics/2017/170505-future-trends-report-2017-en.pdf">http://gov.wales/docs/statistics/2017/170505-future-trends-report-2017-en.pdf</a> in addition there are moves to explore the use of Foresight reporting to provide a richer understanding based on differing future scenarios: <a href="http://www.foresight-platform.eu/wp-content/uploads/2011/01/EFP-Brief-No.-180_Emergence-and-Design-in-Foresight-Methods.pdf">http://www.foresight-platform.eu/wp-content/uploads/2011/01/EFP-Brief-No.-180_Emergence-and-Design-in-Foresight-Methods.pdf</a>	thank you for the reference but due to space constraints the knowledge gap discussion on future trends is at a more general level
The Netherlands: Astrid Hilgers	Ch.2	168	5026	168	5036	An additional problem is that the indicators often do not tell what is the contribution of nature exactly. The choice of a specific indicator strongly influences the results. The amount of indicators brought together in the report is impressive, but for some of the services there just is little proof. Be aware that using an other indicator might reverse the results. See Schulp, CJE, Burkhard, B, Maes, J, Van Vliet, J & Verburg, PH (2014). Uncertainties in Ecosystem Service Maps: A Comparison on the European Scale. PLoS ONE, 9, e109643.	this issue is recognised in the redrafted knowledge gaps section which discusses how indicators for use, deamnd and governance are less developed than capacity indicators
The Netherlands: Astrid Hilgers	Ch.2	168	5026	168	5036		the considerable limitations of indicators is now acknowledged in the redrafted knowledge gaps section
Health Review: Suzanne Skevington	Ch.2	168	5041		5049	'Little empirical evidence of how NCPs can contribute to the different dimensions of QoL'. Few researchers in this field are yet aware of the most appropriate multidimensional and multilingual measures available for this purpose.	the knowledge gaps section now has a full paragraph on the gaps regarding the influence of NCP on quality of life thta ddrresses this comment
Mark Rounsevell	Ch.2	169	5092	169	5096	Getting a bit too prescriptive?	this phrase has been removed
Johannes Langemeyer	Ch.2	169	5096			Why are 'membership levels in env and nature organisations' worth nationwide accountings (How do you derive this conclusion from the chapter?)	this phrase has been removed
Health Review: Valentina Savo	Ch.2	232	7955	246		Plant names should be in italics, provide full name of plants. The number of the studies is underestimated, it is not clear if these studies were selected for their relevance (it does not look like). MOST OF THE TEXT IS COPIED AND PASTED FROM THE ARTICLES' ABSTRACT.. I changed most of the text, but then I stopped as I was not sure if it had to be done or if it should be a table of articles' extracts. I think you should explicitly say that though, in the heading of the table.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	232	7955	232	Armenia	Table 2.20 in the line of Armenia: change "efficiency of different parts of five wild plants species which are commonly used" into 'efficiency of different parts of five wild plant species which are commonly used'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	232	7955	232	Balkan region	Salvia officinalis is common sage, is very rarely called Dalmatian sage	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	232	7955	232	Balkan region	Change "Dalmatian sage (Salvia officinalis L., Lamiaceae) is a well-known aromatic and medicinal Mediterranean plant that is native in coastal regions of the western Balkan and southern Apennine Peninsulas and is commonly" into "Common sage (Salvia officinalis L., Lamiaceae) is a well-known aromatic and medicinal plant that is native to the Balkans and is commonly"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	232	7955	232	Balkan region	Change "Salvia officinalis (Lamiaceae), common or Dalmatian sage, is a Mediterranean aromatic and medicinal plant used in medicine since ancient times" into 'Salvia officinalis (Lamiaceae) is an aromatic and medicinal plant used in medicine since ancient times'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	232	7955	232	Balkan region	Change "Experimental research: Knowledge of its genetic diversity and spatiotemporal patterns is important for plant breeding programmes and conservation" into "The study of genetic diversity and distribution patterns is important for plant breeding programmes and conservation".	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	232	7955	232	Bulgaria	Rhodophyta is not a family	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	232	7955	232	Bulgaria	Change "Review research: is to summarize comprehensively the investigations on the antiviral activity of Bulgarian medicinal plants from the past three decades" into 'Review research: the study comprehensively summarizes the investigations on the antiviral activity of Bulgarian medicinal plants during the past three decades'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Patricia Poeta	Ch.2	232	7955	238		SOURCE- Silva, N.; Alves, S.; Gonçalves, A.; Amaral, J.; Poeta, P. 2013. Antimicrobial Activity of Essential Oils from Mediterranean Aromatic Plants Against Several Foodborne and Spoilage Bacteria. Food Sci Technol Int. 19(6):503-10. doi: 10.1177/1082013212442198. METHOD- The antimicrobial activity of essential oils extracted from a variety of aromatic plants, often used in the Portuguese gastronomy was studied in vitro by the agar diffusion method. AILMENT CATEGORIES REPORTED The antimicrobial activities of Essential oils extracts of the plant tissues against 10 bacterial isolates. MEDICINAL PLANTS Essential oils of thyme, oregano, rosemary, verbena, basil, peppermint, pennyroyal and mint. REGION Portugal	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	233	7955	233	Bulgaria	Change "This is a medicinal plant with a history of traditional use in Bulgaria and in other Balkan countries for herbal tea and basic medical healing treatments" into 'This is a medicinal plant with a history of traditional use in Bulgaria and in other Balkan countries. It is used to prepare herbal teas and other simple preparations'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	233	7955	233	Bulgaria	Change "Experimental research: in vitro study, chloroform and methanol extracts received by soxhlet extraction as well as methanol extract obtained by thermostat extraction were tested for antiviral activity" into 'Experimental research: the study tested in vitro the antiviral activity of chloroform and methanol extracts of the plant'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	233	7955	233	Bulgaria	The title of the article is all in capital letters, please change for consistency	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	233	7955	233	Greece	The study is not testing the medicinal property of the plant, remove from the table	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix

Health Review: Valentina Savo	Ch.2	233	7955	233	Israel	Change "Plants growing in the Judea region are widely used in traditional medicine. Six Judean Plants selected for analysis" into "Many wild plants growing in the region are widely used in traditional medicine. Among a larger pool of plants, six species (Achillea santolina, Calotropis procera, Cistus creticus, Phlomis viscosa, Varthemia iphonioides, and Withania somnifera) were selected for additional analyses"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	233	7955	233	Israel	Change "Analysis revealed that many of the plants growing in the Judea region may hold a geroprotective potential" into 'Analysis revealed that many of the tested plants may have a geroprotective activity'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	233	7955	233	Israel	Change "Experimental research. Wide screen of dozens of candidate herbal extracts for their cell protective, wound-healing, anti-inflammatory, and anti-cancer activities" into 'Experimental research: a wide screen of herbal extracts for their cell protective, wound-healing, anti-inflammatory, and anti-cancer activities'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	233	7955	234	Italy	The study does not really pertain Italy. REMOVE	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	233	7955	234	Italy	You can add this one : Fratianni, F., Cardinale, F., Cozzolino, A., Granese, T., Albanese, D., Di Matteo, M., Zaccardelli, M., Coppola, R. and Nazzero, F., 2014. Polyphenol composition and antioxidant activity of different grass pea (Lathyrus sativus), lentils (Lens culinaris), and chickpea (Cicer arietinum) ecotypes of the Campania region (Southern Italy). Journal of functional foods, 7, pp.551-557.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	234	7955	234	Kazakhstan	If you are using this article, you should include at least some of the species, otherwise it is not useful. I would remove this	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	234	7955	234	Kazakhstan	Change "Supporting evidence for pharmacological properties of some species harvested by locals of the region. Further no specific details mentioned in the abstract except for radioactive substances (due to a nuclear test site) contaminating medicinal plants" into "The study provided evidence for pharmacological properties of some ethnobotanical species and analysed their potential radioactive contamination"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	234	7955	234	Kazakhstan	Change "Experimental research. During the expedition and field works ecological and geobotanic habitat features of dominant species of medicinal plants were studied, and was carried out a description of the experimental areas where plants were sampled for analysis. In laboratory conditions researches were performed to determine the content of Cs-137, Sr-90." into "Experimental research: Medicinal plants were gathered in the wild and main features of the gathering sites were noted. Specimens were successively analysed to determine their content of Cs-137, Sr-90"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	234	7955	234	Kazakhstan	The title of the article is all in capital letters, please change for consistency	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	234	7955	234	Lithuania	Change "Several medicinal properties: inhibit growth of human prostatic epithelial cells, influence the expression of oestrogen receptor, possess antimicrobial activity, have analgesic properties, modulate phagocyte functions, reduce lipid oxidation, exhibit antifungal activity, possess the immune enhancing properties and distinguish by antioxidant activity" into 'Several medicinal properties: the plant inhibits the growth of human prostatic epithelial cells, influences the expression of an oestrogen receptor, shows antimicrobial and antifungal activity, has analgesic and immune enhancing properties, modulates phagocyte functions and reduces lipid oxidation'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	234	7955	235	Mediterranean	Change "Thymus longicaulis C. Presl. is a small aromatic plant abundant in Mediterranean macchia with traditional medicinal use" into "Thymus longicaulis C. Presl. is a small aromatic plant abundant in the Mediterranean shrubland, with several traditional medicinal uses"	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	234	7955	235	Mediterranean	Change "Experimental research on Influence of seasonal variation on Thymus longicaulis C. Presl chemical composition and its antioxidant and anti-inflammatory properties" into 'Experimental research on the influence of seasonal variation on the chemical composition of Thymus longicaulis C. Presl and its antioxidant and anti-inflammatory properties'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	235	7955	235	Mediterranean	Change "Emmenagogue, anti-fungal, anti-helminthic, anti-inflammatory, anti-radical in colon cancer, anti-bacterial and spasmolytic activities. Recently, the insect repellent activity of R. chalapensis has been emphasised" into 'The plant has emmenagogue, anti-fungal, anti-helminthic, anti-inflammatory, anti-bacterial and spasmolytic activities. The species has also shown anti-radical activity in colon cancer'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	235	7955	235	Mediterranean	Change "Experimental research: To exhaustively characterise the chemical composition of the aerial parts from R. chalapensis plants collected from the wild in Sicily" into 'Experimental research: the study was aimed at characterising the chemical composition of the aerial parts of R. chalapensis specimens collected in the wild in Sicily'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	235	7955	235	Poland	Change "Many literature reports have provided evidence for toxic effects of low levels of mercury in the human body" into 'Medicinal plants may contain mercury which has toxic effects in the human body even at low levels'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	235	7955	235	Poland	Change "Experimental research: Seasonal Variations of Mercury Levels in Selected Medicinal Plants Originating from Poland - Spring (4-35 ng/g); Autumn (4-81 ng/g)" into 'Experimental research: the study evaluated seasonal variations of mercury levels in selected medicinal plants gathered in Poland'	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Health Review: Valentina Savo	Ch.2	235	7955	235	Romania	I have stopped checking the text from this point onwards: authors should check English, style, and use a consistent language and organization of content in the table. I would also avoid the copy and paste, the styles is quite discordant and it makes the tables disorganized. CHECK for the same issues also in Table 2.21, Table 2.22, Table 2.23, Table 2.24, Table 2.25, Table 2.26	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Germany	Ch.2	249	7979	249	7980	Intensity of pesticide use: the indicator would be more usefull when considering active ingredient/ha or groups of a.i./ha rather than the tonnage as this better describes the risks originating from pesticide use.	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix



Health Review: Edna Cabecinha	Ch.2	258	7995	265	7999	The table presented on the section 2.7.8 with the list of Intangible Cultural Heritage of Humanity (UNESCO) is not up to date ( in attach is a file with the Portuguese ICH that was missing)	Thanks for the valuable comment; due to a need for drastic downsizing the whole health section, we were not able to incorporate this into the new text, and due to other priorities we could not follow up on this comment in the new appendix
Finnish Government	Ch.2	270	8083	270		How marginal changes in welfare estimates that are typically measured in primary studies were handled. You need add sentence about this.	A sentence has been included to reflect this
Anatoly Khapugin	Ch.2	0	0	0	0	There are many cases of mixed English. There are cases where American English is used, while in following sentences British English is used again and vice versa.	Updated to US english
						The notion of monetary values proposed in this text is too vague and it gives a false impression of being exhaustive of all monetization approaches. This is a problem as the values proposed are general and may not be relevant where monetization is most useful (e.g. reflecting non-market stakes in CBA).  For instance, it is suggested on line 19, that there exists such a concept of « the monetary value », which is wrong. Actually, for the same NCP, monetary values with different interpretations can be proposed. One reason is that the monetary value of one hectare of an ecosystem could be the marginal or the average value, which is not the same as soon as the relationship with size is non-linear. For instance, the recreational value of a place depends on the availability of similar places closeby. When it differs a lot, this confusion could lead to wrong conclusion in local cost-benefit analysis or wrong extrapolations of a total value. Another reason is that, given the general formulation of the NCP here, the same NCP could be related to different types of benefits given the different understandings of a same service. For instance, a monetary value for water quality regulation could represent the cost of the measure required to achieve the same level of services (replacement cost) or the costs of the damage avoided. They are different benefits and could lead to different values. This is the same for the values related to carbon sequestration that may be based on carbon values with different interpretations. These are only two among many reasons.  Given this, it is useful to specify more precisely what the values reviewed represent and why they have to be manipulated with caution.  We suggest the following: 1) Clarify, from the beginning the specificities of the monetary values proposed in this section in relation to a decision context, argue about why they are useful and precise that they do not exhaust the extent of monetary values ; 2) replace « elicit the monetary value » by « propose a monetary valuation » on line 19 ; 3) Make precise in table 2.B that the values proposed are average values (as opposed to marginal, and if this is the case) and the related limitation ; 4) Propose a more detailed discussion of the different types of non-market monetary values ; 5) Suggest that a more precise typology of NCP and ecosystems could also help in strengthening the relevance and robustness of the values proposed.	
France	Ch.2	0	0	0	0	It is unclear in how far the approach suggested by the IPBES values guide was considered. Please refer to the IPBES values guide (Preliminary guide regarding diverse conceptualization of multiple values of nature and its benefits, including biodiversity and ecosystem functions and services (deliverable 3 (d))).	This issue is addressed in Section 2.3.5.2 and 2.3.5.4
Germany	Ch.2	0	0			It would be great to make it more explicit what the difference is between Nature's contributions to people vs. Nature's benefits to people (e.g. through referencing to earlier chapters). (The values guide talks primarily about the latter.)	The report builds on the value guide A decision has been made to only focus this document on Nature's contribution to people, and therefore discussion of NBP would add confusion.
Germany	Ch.2	0	0			On p. 6, l. 107-109 the authors " recommend, that assessments of NCP (...) should account for this plurality of values" and call for "novel approaches in which to integrate value plurality in decision-making" in l. 114-115). However, there are no attempts at all mentioned in these sections how policy-makers can actually account for different values or even bridge and integrate those values. Is there indeed no approach or information in ECA available on how such very different values (e.g. monetary values and socio-cultural values) are already recognized or could be better considered in decision-making? To what extent are all these values (in Tables 2.A, 2.B, 2.C and Figure 2.B) then useful for policy makers? Any hints on how such "novel approaches" to integrate value plurality into decision making could be shaped? Offering some options would be helpful.	I have included ... highlighted the desire to include social, cultural and shared values IN DECISION MAKING THROUGH E.G. DELIBERATION ACROSS STAKEHOLDERS'. I have also included an example MSSDA that may be used to integrate plural values.
Germany	Ch.2	0	0			It would be useful to provide not only a summary of what the data show, but also at least an explanation explaining the trends outlined in the presented values, thereby also suggesting policy relevant options (data should actually be seen as a means to provide a basis for developing founded options for decision-makers).	This was not possible given the data collected
Germany	Ch.2	0	0			what about biophysical measures (see values guide p. 3, Pascal et al. Figure 3)? What about holistic approaches? What about the role of ILK for values in ECA?	It was agreed that these should not be included in this section
Germany	Ch.2	0	0			Throughout the text and the appendices, please avoid using the abbreviation "EU" to define Europe or Western, Central or Eastern Europe to avoid misunderstandings with the term "European Union".	Changed in Figure 2.66 in main text.
EU: Marco Fritz	Ch.2	0	0	general	general	It seems that the literature research protocol did not identify work done by the 28 Member States of the EU and the European Commission in the MAES and the natural capital accounting framework. This is however the main EU contribution to this topic. See <a href="http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/index_en.htm">http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/index_en.htm</a> and <a href="http://biodiversity.europa.eu/maes">http://biodiversity.europa.eu/maes</a> , and <a href="http://ec.europa.eu/environment/nature/capital_accounting/index_en.htm">http://ec.europa.eu/environment/nature/capital_accounting/index_en.htm</a> as far it is related to valuing work	Correct. The search criteria aimed to identify publications through a systemised search protocol, ie the EVRI. As a result, we did not pick up all the publications. Including ad hoc reports such as the important once listed in the comments, would have meant that we deviated from the search protocol and thus would affect the repeatability of the analysis.
						The huge work done by the EU on MAES is not represented. Of course the review is based on peer-reviewed papers, but even there at least some papers are available, see e.g. An indicator framework for assessing ecosystem services in support of the EU Biodiversity Strategy to 2020.  <a href="http://www.sciencedirect.com/science/journal/22120416?sd=1">http://www.sciencedirect.com/science/journal/22120416?sd=1</a>  Volume 17 February 2016, Pages 14-23: <a href="http://www.sciencedirect.com/science/journal/22120416/17/supp/C?sd=1">http://www.sciencedirect.com/science/journal/22120416/17/supp/C?sd=1</a>  <a href="http://www.sciencedirect.com/science/article/pii/S2212041615300504#%21">http://www.sciencedirect.com/science/article/pii/S2212041615300504#%21</a>  see there for more references.	The search criteria aimed to identify publications through a systemised search protocol, ie the EVRI. As a result, we did not pick up all the publications. Including ad hoc reports such as the important once listed in the comments, would have meant that we deviated from the search protocol and thus would affect the repeatability of the analysis.
EU: Ole P. Ostermann	Ch.2	0	0			<a href="https://www.researchgate.net/profile/Benjamin_Burkhard/publication/315074237_What_to_map/links/58dcd8bcaca2725c475dbdcd/What-to-map.pdf">https://www.researchgate.net/profile/Benjamin_Burkhard/publication/315074237_What_to_map/links/58dcd8bcaca2725c475dbdcd/What-to-map.pdf</a>	This has been clarified to include economic (monetary and non-monetary) and social dominated.
Germany	Ch.2	2	23	2	25	Are these the two principal streams of valuation approaches: monetary vs. social dominated? If so, please clarify.	
Germany	Ch.2	2	24	2	27	Rather than Total economic value (TEV), the concept of marginal values is quite important for economic valuation, but implications are not mentioned here.	The concept of TEV refers the combination of use and non-use values. Here we are not referring to the distinction of valuing the entire good or marginal changes to the good. Clarity has been added.
André Mader	Ch.2	2	26	2	26	Not clear what is meant by "...we contend for a value pluralism framework...". Can the language be simplified? Also, the word "contend" may be seen to be prescriptive.	contend changed to advocate

						Where is the value pluralism framework? Is this a new suggestion of the authors of the ECA assessment or does it comply with the values guide and the IPBES conceptual framework? [or taken from the reference?]. Please ensure alignment a) amongst the different IPBES products and b) the existing literature. Regarding the latter, please make sure to respect and build upon previous approaches such as TEEB, MA 2005, UK NEA etc., (see p. 6, l. 107-111) and highlight clearly the aspects where you have developed those existing approaches further.					the text makes it explicit that we are extending existing frameworks.
Germany	Ch.2	2	26	2	27	"contend for", "advocate" (l. 30) --> it is unclear why the authors should contend for s.th. This is already detailed in the IPBES values guide and summarized in the IPBES guide for assessments					changed
						The IPBES assessment remit is quite strongly against policy prescription, so I would suggest that you do not "advocate".					
André Mader	Ch.2	2	30	2	32	Also, it may be misleading to imply that the traditional approach towards valuation is market-based and monetary. I am not up-to-date with the literature but my impression was that such valuations are in the minority, partly due to the difficulty associated with producing figures for most NCP.					The extension of valuation to include socio-cultural values is a key message from this section, so we believe that it is important to advocate it.
Germany	Ch.2	2	30	2	30	It may be helpful to replace the term "traditional" with the term conventional. The text would then read: "... that extends beyond conventional market-based monetary approaches..."					change made
EU: Marco Fritz	Ch.2	2	30	2	32	Why only 'advocating' for a value assessment framework beyond market-based monetary approaches, if it became clear that all other approaches do fall short according to your analysis?					Our key argument is that a valuation framework should account for all types of values. We don't suggest that other approaches fall short, but that each approach can add new insights.
Konstantinos Tzoulas	Ch.2	2	34	2	37	The section on market based valuation and Table 2.A are very limited. They only cover some aspects of agricultural based monetary valuations. Further examples from avoided cost, replacement cost, mitigation cost, and from production and income factor approaches could also be included. A range of additional examples would demonstrate the direct economic importance of nature much stronger than a limited range of examples					updated to include this (Farm Accountancy Data Network, 2017), (EUROSTAT, 2016). These sources are listed as Notes to Table 2a
Anatoly Khapugin	Ch.2	2	37	2	37	In addition to "Table 2.A", reference(s) on appropriate publication(s) should be added where these data on net profits from agricultural production were published					
Germany	Ch.2	2	39	2	40	An interpretation is missing. Valuation is a lot about context, but this figure is provided without any interpretation. This holds true for all the figures of section 2.3.5. For example, Figure 2.B shows that way more studies found "physical and psychological experiences" valued among the 5 most important NCPs than "Food and Fibre". Actually, this results seems quite surprising at first glance and therefore needs more context in order to be understandable.					Although we agree that interpretation is important, limitations on word count mean that we are unable to provide this interpretation.
André Mader	Ch.2	3	50	3	58	It is not clear what is meant by "value points". A short explanation in the text could be helpful as readers may not be interested in consulting the appendix					Now changed to 'value data points'
Germany	Ch.2	3	50	3	53	What about the situation with regard to market based values in the previous section? Any sub-regional differences?					Data were not readily available across sub-regions.
Germany	Ch.2	3	50	3	53	Please include a reference here to Table 2 in Appendix 2.A so that it is clear which countries belong to Western, Central and Eastern Europe and to Central Asia. Please cross check with table 1.3 in chapter 1 on consistency.					Reference to Table 2 now included
Konstantinos Tzoulas	Ch.2	3	52	3	53	One or two specific examples for this sentence would help for clarity, and would save the readers having to go through a whole Appendix to find the evidence that the sentence refers to. At least a reference to a specific Table within the Appendix could be indicated also					Reference to Table 5 in appendix now included
Germany	Ch.2	3	52	3	52	It would be useful to already refer to footnote 1 on page 3 when using the term "standardised Int S" used here for the first time.					Reference to the footnote is now moved here.
Germany	Ch.2	3	52	3	53	Is there a reason, why it seems that people in Central Europe may have higher values for NCP than those from Western Europe? Offering explanations for such statements are useful.					Explanation is included in Appendix.
Konstantinos Tzoulas	Ch.2	3	57	3	58	What is a value point? This key term has not been explained anywhere in the additional text, the appendices, or the main chapter 2.					Definition now included in the title of Figures 2A
Germany	Ch.2	3	57			Figure 2A: How are "value points" defined?					Definition now included in the title of Figures 2A
Germany	Ch.2	3	57			Figure 2A: Please spell out EU: it should read Western Europe, Central Europe and Eastern Europe to avoid misunderstandings with the European Union (EU).					Done
						This is a general comment for the tables where mean and median values are given for each NCP. In the main text there is a cautious writing on how to interpret the tables, but I think it needs to be sharpened. The difference between minimum and maximum values differ much (several times the figure). For less than, say, three studies per NCP it might be statistically troublesome to present a medium or mean value that might be used by others as an established fact. These mean and median values might be biased due to few studies and a new additional study might change the value quite much. See for example Table 2B, NCP 10, only three studies, values range 1.18-281.85. Is it possible to say something in the text on how many studies that are needed for a statistically proper evaluation, a threshold level to avoid small number statistics? Is it possible to indicate those NCPs by making the numbers in italic?					Included the following statement ... ; particularly where the valuation is based on less than 5 observations.
Henrik Lerner	Ch.2	3	60	5	84	The reference on Table 2.B is insufficient. References on publications or reports, where these data were highlighted, are needed here					Reference to Table 8 in the appendix now included.
Anatoly Khapugin	Ch.2	3	61	3	61						
Germany	Ch.2	3	63	3	64	An explanation or explanations would be helpful, why material and non-material NCP tend to have lower non-market values.					The analysis did not delve more deeply into the reasons why values differed.
Inge Liekens	Ch.2	3	64		65	What is assistance in "Materials and assistance": resources??					These are the standard NCP titles and is explained elsewhere in the report
Anatoly Khapugin	Ch.2	3	67	3	67	The reference on Table 2.C is insufficient. References on publications or reports, where these data were highlighted, are needed here					Reference to Table 8 in the appendix now included.
Rob Hendriks	Ch.2	3	67	3	72	The language here is impersonal/ formal "Analysis also explored..." whereas for example in line 107 and 113 ("We recommend... / We demonstrate...") and in appendix 2A a more personal style is used. This difference in style may be functional, but perhaps it is not and could this be harmonised throughout the chapter.					Change 'Analysis also explored non-market' to 'We also explored...'
Anatoly Khapugin	Ch.2	3	71	3	71	"Freshwater" should be changed on "freshwater"					done
André Mader	Ch.2	4	73			Perhaps this can be left out as it is currently repeated in the appendix.					It was considered important to highlight the range of values. - see comment 41
						"Although the median values are highlighted above, there was a wide range in the non-market values found for each NCP."					
						Although the authors made clear what is meant by this statement, I felt that there is no need to comment or justify the use of the median. The median is generally used for skewed distributions. The mean is used for normal distributions. It might be advisable to report the range or max/min than instead in this paragraph.					reworded to focus on the range of values
Daniela Haluza	Ch.2	4	74								Thanks
Inge Liekens	Ch.2	4	74								Thanks
France	Ch.2	4	75	4	76	Very important to highlight this as I see a lot of benefit transfer that is completely ridiculous					Added a line on differences in methods used in the valuation.
						Rather say « differences in the nature and the scope of the NCP » where it could further be explained that values of different nature are assessed through different methods (replacement cost, market prices, etc.). Differences in size may not account for much variability as they are normalized per area and person.					
Germany	Ch.2	4	75	4	77	It is said that caution is advised to transfer the reported values to « other policy contexts » but the actual policy context remains poorly specified. A clearer specification of the policy context (which decision ? For what ?) would be very helpful to assess the relevance of the values proposed.					The values provide a useful overview of the range of values of NCPs. If you aim to transfer values, you should ideally utilise more precise value transfer that e.g. takes context into account. This is beyond the scope of this overview
						If so, are the average values provided in the table below then at all meaningful? It would be useful to have a t least some context (e.g. as in p. 5, ll. 93-95)					Given the number of NCP and the range of possible policy contexts, it was not possible to provide this granularity of detail.
France	Ch.2	4	76	4	77						
						tables and paragraphs: if median is so different from mean, I suspect the data isn't normally distributed. This -according to basic statistics- entails that the mean CANNOT be used, but median values should be used throughout table and texts. The mean values in table and texts should not be shown as this means the means are meaningless. (sorry about the word play)					The distribution of the value evidence varies for the different NCP. For example, mean and median values differ widely for habitat creation, but are similar for regulation of air quality. Reporting both mean and median allows the reader to gauge the distribution.
Sander Jacobs	Ch.2	4	79								Done
Inge Liekens	Ch.2	4	79			NCPs? NCP is already plural: Nature's contributions to people					Done

Germany	Ch.2		4	79		Table 2B: Why did you calculate the median here in this table and not in table 2.A as well? For some NCPs, mean (or median) are calculated based on very small N. Are these valid estimates?	Data was not available to estimate medians values for Table 2a	
Germany	Ch.2		4	82		Table 2C: It would be useful to insert a brief explanation, why data are missing for certain aspects, such as values for "pollination and dispersal of seeds and other propagules", particularly remembering that the IPBES has carried out an assessment on pollination, pollinators and food production.	Data are missing as there were no value estimates found for these NCP. The column N (=0) would hopefully explain this.	
Germany	Ch.2		5	88	5	88	Consider replacing the term "European people" with people in Europe.	Done
Germany	Ch.2		6	97			Figure 2B: Please include "Western and Central Europe" in the caption of Figure 2.B. Do "Western Europe" and "Central Europe" refer to the same set of countries outlined in Table 2 in Appendix 2?	Clarification added.
EU: Frank Wuyt Larsen	Ch.2		6	100	6	122	As this section is about 'integrating values into policy' it would benefit from highlighting that the EU biodiversity strategy to 2020 indeed include actions to 'assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020' (target 2, action 5). This work is supported by the abovementioned work in relation to the MAES and the natural capital accounting framework	Included reference to EU biodiversity strategy
André Mader	Ch.2		6	101	6	105	This is essentially a repeat of what has already been said in preceding sections	Considered important to full previous sections together into the policy context
Germany	Ch.2		6	102	6	102	You may wish to replace the term "Traditionally" with the term "Conventionally".	Done
André Mader	Ch.2		6	107	6	111	"Recommending" could be seen as trying to be policy-prescriptive.	Replace "We recommend that assessments of NCP ..." with "The evidence reported above suggests that assessments..."
Konstantinos Tzoulas	Ch.2		6	107	6	122	Very good points made here. Value plurality, novel approaches to valuation and integration, and standardising reporting values are points that need emphasising. Well done to the authors for identifying these points.	Thanks for this positive comment
Rob Hendriks	Ch.2		6	113	6	113	"We demonstrate ..." -> Where is this demonstrated?	In the previous sections demonstrate this: market, non market and social
André Mader	Ch.2		6	118			Is this a lack of evidence or a lack of data? It is conceivable that there could be little evidence even if many studies have been conducted. That that could have different implications to a situation where a lack of evidence results from a lack of data.	changed to data
France	Ch.2		6	120	6	122	The plea to produce value per hectare could be discussed as some NCP are poorly correlated with surface. For example, while per hectare values are well designed for carbon sequestration, they may be inappropriate for recreation as the marginal value of a hectare may depend on the stock or flood protection as the value of an hectare crucially depends on location. Forcing data collection to be reported on a per hectare basis may then induce inappropriate values and bias decision is an uncontrolled way. A possibility would be to call for more standardized per unit values where the units are clearly specified, suitable for each service and can be related to others. A more detailed proposal in this direction would help fostering the collection of more relevant data on these issues.	Good point. Addressed
EU: Marco Fritz	Ch.2		6	120	6	122	Why is 'value per ha' the best reporting unit (also for non-material values)?	changed to say more standardised values - see comment above
Anatolij Khapugin	Ch.2		8	184	8	184	Now "Web of Science (WoS)" is "Clarivate Analytics". Perhaps, WoS should be changed on Clarivate Analytics, or this re-naming should be noted in the text.	Done
Anatolij Khapugin	Ch.2		8	188	8	188	"data that was" should be changed on "data that were"	Done
Inge Liekens	Ch.2		9	209			to an NCPs' should be 'to NCP'	Done across the appendix
Inge Liekens	Ch.2		9	210			Do you not miss important papers that actually want to make clear that a per ha value is not the thing you want to transfer and pay more attention to the value function.	See comment 58. Now removed per Ha and suggested standardised values.
Christian Schleyer	Ch.2		9	213	9	213	"full list of articles"	done
Daniela Haluza	Ch.2		10	244			Table 2: Number of papers and value points sourced from EVRI (2007-2017). This table needs some editing.	Not sure what editing was requested but some changes have been made
Michael Heard Snow	Ch.2		10	244	15	281	Do the value/ha/yr values for food include marine ha contributions from fisheries aquaculture, etc.? (For example the North Sea and north Atlantic fisheries, Norwegian salmon aquaculture, or N. Europe Oyster reefs). If these are taken into account how this would/does potentially skew per ha calculations and how is this skew accounted for? Would a separate calculation for contributions from marine and living resources make sense as a separate sub section? Are non ECA waters fished by ECA fishing fleets taken into account for these values when the benefit from the ecosystem service originates in non ECA EEZ waters but benefits the peoples, economies, and industries of ECA?	There were only a copy of examples of marine fisheries and therefore these would have a limit impact on per Ha values. We are reluctant to start splitting NCP as this would open up a can of worms for every NCP. Plus the sample size is often already small
Daniela Haluza	Ch.2		10	251			A full stop is missing after "Western EU"	Done
Konstantinos Tzoulas	Ch.2		11	255	11	256	Are these values that each person gains from, or pays for, nature per year? Are the values per hectare based on profit? The monetary values per person per year, and per hectare per, year need clear explanation and definition.	In the literature there were a wide range of definitions of per person and per Ha and therefore we were not able to convert them to a single unified format. So, it would be difficult to provide a precise definition.
Inge Liekens	Ch.2		11	262			conversation needs to be conversion i suppose?	done
Sander Jacobs	Ch.2		11	265	268		tables and paragraphs: if median is so different from mean, I suspect the data isn't normally distributed. This -according to basic statistics- entails that the mean CANNOT be used, but median values should be used throughout table and texts. The mean values in table and texts should not be shown as this means the means are meaningless. (sorry about the word play)	The distribution of the value evidence varies for the different NCP. For example, mean and median values differ widely for habitat creation, but are similar for regulation of air quality. Reporting both mean and median allows the reader to gauge the distribution.
Sander Jacobs	Ch.2		14	278			tables and paragraphs: if median is so different from mean, I suspect the data isn't normally distributed. This -according to basic statistics- entails that the mean CANNOT be used, but median values should be used throughout table and texts. The mean values in table and texts should not be shown as this means the means are meaningless. (sorry about the word play)	The distribution of the value evidence varies for the different NCP. For example, mean and median values differ widely for habitat creation, but are similar for regulation of air quality. Reporting both mean and median allows the reader to gauge the distribution.
Anatolij Khapugin	Ch.2		14	281	15	281	Table 7: there is not any information on mean value per Ha / yr of NCPs for Eastern Europe and Central Asia. I would suggest to delete these empty parts from the table because they don't provide any data for reader	It is felt that it is important to show these data gaps
André Mader	Ch.2		14	281	15	281	Note mistake (presumably?) in table where Western/Central/Eastern EU should be Western/Central/Eastern Europe	corrected
Daniela Haluza	Ch.2		16	289			It might be interesting to speculate on the reasons and discuss the finding that most values were from Western EU, with very little value evidence from Eastern EU or Central Asia.	following sentence added "...and 1 paper (1 value point) in Central Asia. IT IS THOUGHT THAT THE DIFFERENCES IN NUMBERS OF STUDIES FOUND ACROSS THE ECA REGIONS IS LARGELY DUE TO DIFFERENT LEVELS OF RESEARCH FUNDING AND EXPERTISE ACROSS THE REGIONS. Table 2 ...
Germany	Ch.2		16	294	16	299	The structure of how this additional text will be included in the assessment report is not clear. Is it planned to include the text in the existing chapter 2 and place the appendices at the end of the assessment report? If this is the case then the important text provided in the "Conclusions" on page 16 (lines 286-299) should be placed more prominently in the assessment text itself and not in the appendix of the assessment.	The key message from this conclusion is stated in main report
Germany	Ch.2		16	296	16	296	You may wish to replace the term "recommendation" with e.g. the term proposal in order to avoid using policy-prescriptive language.	done
Inge Liekens	Ch.2		16	299			I only agree partly with this sentence. You need far more information than size of the area and number of persons affected. I would expand the above plea in asking value practitioners to publish a lot more info on the case study area (also characteristics of the study area and characteristics of the people involved are very important to do a robust benefit transfer)	text has been modified
Christian Schleyer	Ch.2		16	299	16	299	"information that we can"	Done

Christian Schleyer	Ch.2	17	302	25	303	Table 8: I assume that there are good reason not to mention the journal names of the studies listed and that this is explained elsewhere. If not, I wonder... Further, Umlaute for names like Wätzold or Wüstemann seem to be missing.	This is the data that was directly downloaded from EVRI. This will require a significant amount of work to address. We do not have that time
EU: Ole P. Ostermann	Ch.2	17	302	25	303	"Table 8: List of studies included in the review sourced from EVRI" refers all papers to "Journal" which must be an error when importing from a database	This is the data that was directly downloaded from EVRI. This will require a significant amount of work to address. We do not have that time
Anatoliy Khapugin	Ch.2	28	0	28	0	Within Table in Appendix 2.B., in section Central Europe for publication "Hartel et al., 2014", there is a mistake. "Rumania" should be changed on "Romania"	Thanks for pointing this out. Nevertheless, according with the last agreement in IPBES, we add all the extra-references consulted in the whole chapter in other appendix and therefore this appendix has been removed.