Second Session of Working Group I, II and III

SRCCL Final Draft

	SPM Page:Line	Chapter	Chapter Page:Line	Tricklebacks
1	4:12	1	1:16	simplify: "terrestrial" to "land" potential NPP; also need to adopt NPP definition in glossary
2	4:27	1	2:28	food waste and lost: need to check if we need to adjust confidence languag
3	A2.1 [8:7]	1	1:25	update land temperature increase and underlying time period, (abbreviation GMST)
4	A2.1 [8:7]	1	8:25	update land temperature increase and underlying time period, (abbreviation GMST)
5	A1.1 Footnote2	1	1:6	drop range (75-85) to a single value of 75 trillion USD, revise sentence to reflect new SPM statement: "The world's terrestrial ecosystem services have been valued on an annual basis to be approximately equivalent to the total economic to the annual global Gross Domestic Product..." Adjust confidence statement.
6	A1.1 Footnote2	1	3:32	drop range (75-85) to a single value of 75 trillion USD, revise statement to reflect new SPM statement: "The world's terrestrial ecosystem services have been valued on an annual basis to be approximately equivalent to the total economic to the annual global Gross Domestic Product..."
7	Fig SPM.1	1	5	Replace with new SPM Figure, adjust Figure caption, and literature/data sources
8		1	10:8	Replace (26.3-43-4 mio km2) by (32.0-42.5 mio km2)
9	Fig SPM.1	1	13	Table 1:1 -- change area of Managed for timber… from 21 to 22% (was a rounding issue that doesn't add up).
10	Fig SPM.1	1	13:17	In 1.2.2.3 add fibre and timber numbers (if still in Figure)
11	Fig SPM.1	1	12:16	change to inland wetland area
12	Fig SPM.1	1	panel B	change emissions to 23% (from 22%) in response to the changed emission estimates in Table SPM.1
13	A1.5	1	15:16	Change to word similar to the revised SPM: In 2015, about 500 (360-620) million people lived within areas which experienced desertification between 1980s and 2000s
14	SPM.4	1	21:42	Change to …not easily commensurate…
15	B5 HeadlineS. Footnote 33	1	31:4	cross-check defnition of "sustainable land management" with glossary, (following changes in B5 footnote 33)
16	table SPM1 and text SPM A3 headline]	2	4:16	change 22 % to 23%

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17	table SPM1	2	4: 23-24	Change "provided a global net removal from 2008 to 2017 according to models, (-6.2 ± 3.7 GtCO2 yr-1, medium 23 confidence)." change date range and number to "provided a global net removal from **2007** to **2016** according to models, (**-6.0 ± 3.7 GtCO2** yr-1, *likely* **range**)".
18	table SPM1 and text SPM A3.1	2	4:25	change number from 5.5 to **5.2 ± 2.6 GtCO2 yr-1**
19	table SPM1 and text SPM A3.1	2	4:27	delele "medium confidence"and change "likely" to "likely **range**"
20	table SPM1 and text SPM A3.2	2	4:28	replace -11.7 ± 2.6. with. **-11.2 ± 2.6** and change "*likely* " to" *likely* **range**"
21	SPM A3,3	2	4:32 to 41	Replace first sentence of headline with SPM text : "Global models and national GHG inventories use different methods to estimate anthropogenic CO2 emissions and removals for the land sector." Replace forst part of second headline sentence wtih bold text from SPM. : "Consideration of differences in methods can enhance understanding of land sector net emission such as under the Paris Agreement's global stocktake (medium confidence)." these two new sentences reflecting the SPM shoudl be the new bold headlien statement. Then replace the rest of this ES bullet entirely with SPM text "Both models and inventories produce estimates that are in close agreement for land-use change involving forest (e.g., deforestation, afforestation), and differ for managed forest. Global models consider as managed forest those lands that were subject to harvest whereas, consistent with IPCC guidelines, national GHG inventories define managed forest more broadly. On this larger area, inventories can also consider the natural response of land to human-induced environmental changes as anthropogenic, while the global model approach {Table SPM.1} treats this response as part of the non-anthropogenic sink. For illustration, from 2005 to 2014, the sum of the national GHG inventories net emission estimates is 0.1±1.0 GtCO2yr-1, while the mean of two global bookkeeping models is 5.1±2.6 GtCO2yr-1 (likely range).
22	table SPM1	2	4:51	**replace % and year range with 44% and 2006-17**
23	table SPM1	2	28:36	replace number with 23%
24	table SPM1	2	28:37	replace time period with 2007-2016
25	table SPM1	2	28:43	this entire table will be prepalced with new SPM table 1, panel A and associated footnotes
26	table SPM1	2	29:27 to 28	change number and add confidence **6.0 ± 2.0** GtCO2 yr-1, (*likely* **range**)., change time period to 2007-2016

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27	table SPM1, bullets A3.1 and A3.2	2	30:22 to 31:1	table 2.3 needs a new column added with the time period 2007-2016 to be consistent with table SPM1m and bullets, and as an updated version to the GCP database was sued to calcualte table SPM1, the consistent verion of the database will need to be sued to recalculate numbers in table 2.3, although most will probably stay the same, a table legend will need to icnlude information that the updated database is used rather than the original numbers in the paper le quere et al 2018
28	table SPM1 and text SPM A3.1	2	31:3	update number and time period and add cnfidence stamenet: 5.2 ± 2.6 GtCO2 yr-1 (likely range) 2007-2016
29	table SPM1 footnote 2	2	31:6 to 7	Delete "including agriculture, grasslands and shrub" and replace with "as well as peatland drainage and burning"
30	A3.3	2	32:24	Delete low confidence and use (*likely* range), as consitent with bullet
31	A3.3	2	32:22	add confidence statement after number (*likely* range)
32	table SPM1, bullet A3.2	2	36:5	change number, time priod and uncertainty: 11.2 +/– 2.6 Gt CO2 yr–1 (likely range) during 2007-2016
33	table SPM1, bullet A3.1	2	36:41	change number, time priod and uncertainty 5.2 ± 2.6 GtCO2 yr-1 (likely range) over the period 2007-2016
34	table SPM1, bullet A3.2	2	37:2	change number, time priod and uncertainty: 11.2 +/– 2.6 Gt CO2 yr–1 (likely range) during 2007-2016
35		2	TS.2	Replace second sentence in the technical summary TS.2 with the values for 2006-2015 period for land and GMST temperature increase: "According to the single longest and most extensive dataset, from 1850-1900 to 2006-2015 mean land surface air temperature has increased by 1.53°C (very likely range from 1.38°C to 1.68°C) while GMST increased by 0.87°C (likely range from 0.75°C to 0.99°C). For the 1881–2018 period..."
36	SPM A2.1	2	p.16,l.1	replace "the 1999–2018 period was 1.52°C, 1 (1.39°C–1.66°C; 95% confidence). " with "the 2006-2015 period was 1.53°C, (1.38°C–1.68°C; 95% confidence), while GMST increase for the same period was by 0.87°C (0.75°C -0.99°C; 90% confidence) (IPCC, 2018: Summary for Policymakers).
37		2		add refrence for the SR1.5 SPM in chapter 2: IPCC, 2018: Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]
38		2	p16. l.6-7	Change table 2.1 name to "Table 2.1 Increases in land surface air temperature (LSAT) from preindustrial period and the late 19th century to present "
39		2	p. 16	Change table 2.1 , including the labels on the first column and adding a new row for temp increases from preindustrail to 2006-2015

Tricklebacks

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40	A2.2	3	3:11; 11:4	"Middle East" to be replaced by "**West Asia**" for drought [take note as it is somehow contradict with A1.5 approved bullet]
41	B4.1	3	5:16; 50:17	combating desertification are **"site and regionally specific"**
42	B4.1	3	4:38-39; 9:17; 61:29	drought-resilient native plants (drought-**tolerant** crops - initial version in the underlying report) ----> drought-resilient **ecological appropriate** plants
43	B4.1	3	32:24	drought-resilient native plants (drought-**adapted** crops - initial version in the underlying report) ----> drought-resilient **ecological appropriate** plants
44	B4.2	3	69:3; 71:33; 71:43; 77:6-7	"native tree species" ---> "native **and other climate resilient** tree species"
45	B4.4	3	5:23-24; 12:39; 33:25; 44:1; 58:3	poverty reduction ----> povery **eradication** (or **eradicating** poverty)
46	B4.4	3	5:25; 53:15	LDN ---> LDN (**including** avoiding, reducing and reversing land degration)
47	A1.5	3	3:10-11	The highest numbers of people affected are in South and East Asia, North Africa and Middle East (low confidence) ---> The highest numbers of people affected are in South and East Asia, **the circum Sahara region including** North Africa, and the Middle East **including the Arabian peninsula** (low confidence). **Other dryland regions have also experienced desertification**. [take note as it is somehow contradict with A2.2 approved bullet]
48	B4.5	3	3.1; 3.7.4 & 3.9 (sections)	To add confidence level and missing words: "Even when solutions are available, **social, economic and institutional constraints** could pose barriers to their implementation (*medium confidence*).
49	B4.6	3	X	Developing, enabling and promoting access to **cleaner energy sources and technologies** can contribute to adaptation and mitigating climate change and combating desertification and forest degradation through decreasing the use of traditional biomass for energy while increasing the diversity of energy supply (medium confidence). [Throughout the entire Ch3 report, we use **renewable** energy]
50	B4.6	3	X	This can have socioeconomic and health benefits, especially for women and **children**. (*high confidence*).
51	B4	3	6:6; 6:8; 10:13; 12:39	….climate change adaptation and mitigation… ----> …climate change adaptation **and with** mitigation **co-benefits**….
52	8:29-31	4	4:25	Add the following sentence between "confidence)" and "Global" In some areas sea level rise has exacerbated coastal erosion (medium confidence).

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53	4:28	4	5:27	change 1-6 Mkm2 to 10-60 MKm2 We spotted a decimal error. It is correct in the chapter text, but was incorrectly inserted into the ES.
54	8:34 (A2.7)	5	5:16	Add "over recent decades" after "regions".
55	8:34 (A2.7)	5	5:33	Add "in Africa" after "pastoral systems"
56	4:23 (new A1.4)	5	7:9	Change "amount to a third of global food production" to "amount to 25-30% of total food produced". Change to "medium confidence"
57	4:23 (new A1.4)	5	80:21	Change "amount to a third of global food production" to "amount to 25-30% of total food produced". Change to "medium confidence"
58	TableSPM.1, Footnote 10	5	7:11	Update "total GHG emissions from food systems" to "total anthropogenic GHG emissions"
59	TableSPM.1, Footnote 10	5	61:23	Update "total GHG emissions from agriculture and land use" to "total anthropogenic GHG emissions"
60	TableSPM.1, Footnote 10	5	80:34	Update "emissions of the entire food system" to "emissions"
61	TableSPM.1	5	60:29	Update "6.2 ± 1.9" to "6.2 ± 1.4"
62	TableSPM.1	5	64:37	Update "15%" to "10%"
63	TableSPM.1	5	60:30	Update "4.1 ± 1.2" to "4.0 ± 1.2"
64	TableSPM.1	5	60:31	Update "8.3 ± 2.3 " to "8.0 ± 2.0"
65	TableSPM.1	5	60:31	Update "2.1 ± 0.6" to "2.2 ± 0.7"
66	TableSPM.1	5	60:34	Update "4.8 ± 2.4" to "4.9 ± 2.5"
67	TableSPM.1	5	60:38	Update "11.0 ± 3.1" to "11.1 ± 2.9"
68	TableSPM.1	5	61:25 (Table 5.4)	Update first row "6.2 ± 1.9" to "6.2 ± 1.4"
69	TableSPM.1	5	61:25 (Table 5.4)	Update second row "4.8 ± 2.4" to "4.9 ± 2.5"
70	TableSPM.1	5	61:25 (Table 5.4)	Update third row "3.8 ± 1.3" to "2.4 - 4.8"
71	TableSPM.1	5	61:25 (Table 5.4)	Update fourth row "14.8 ± 3.4" to "10.7 - 19.1"
72	TableSPM.1	5	61:20	Update "2.5" to "2.4"
73	TableSPM.1	5	61:25 (Table 5.4)	Update first row "10-12%" to "10-14%"

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74	TableSPM.1	5	61:25 (Table 5.4)	Update second row "8-10%" to "5-14%"
75	TableSPM.1	5	61:25 (Table 5.4)	Update fourth row "25-30%" to "21-37%"
76	TableSPM.1	5	61:29	Update "51 Gt CO2-eq yr-1" to "52 Gt CO2-eq yr-1"
77	TableSPM.1	5	61:30	Delete "GWP values used are those , and by". Sentence would read: "...(See Chapter 2), using GWP…"
78	TableSPM.1	5	61:28	Update "a) FAOSTAT (2018) and US EPA (See also Chapter 2) and" to "a) FAOSTAT (2018) and US EPA (2012) (using square root of sum of squares of standard deviations for uncertainty ranges; see also Chapter 2) and"
79	TableSPM.1	5	61:28	Update "b) Garnett (2011) and Poore and Nemecek (2018)" to "b) estimates from Fischedick et al. (2014) and Poore and Nemecek (2018)"
80	TableSPM.1	5	6:16	Update "25-30%" to "21-37%"
81	TableSPM.1	5	6:18	Update "10-12%" to "10-14%"
82	TableSPM.1	5	6:19	Update "8-10%" to "5-14%"
83	TableSPM.1	5	6:24	Update "8.3 ± 2.3 " to "8.0 ± 2.0"
84	TableSPM.1	5	6:25	Update "4.8 ± 2.4" to "4.9 ± 2.5"
85	TableSPM.1	5	6:27	Update "11.0 ± 3.1" to "11.1 ± 2.9"
86	TableSPM.1	5	6:27	Update "6.2 ± 1.9" to "6.2 ± 1.4"
87	21:42 (B6)	5	6:34	Update "Total mitigation potential of crop and livestock activities is estimated as 1.5–4.0 GtCO2-eq yr-1 by 2030 at prices ranging from 20-100 USD/tCO2eq (high confidence)" to "Total technical mitigation potential from crop and livestock activities and agroforestry is estimated as 2.3 - 9.6 GtCO2-eq yr-1 by 2050 (medium confidence)"
88	21:44 (B6)	5	6:47	Update "Total mitigation potential of dietary changes is estimated as 1.8-3.4 GtCO2eq yr-1 by 2050 at prices ranging from 20-100 USD/tCO2 (medium confidence)" to "Total technical mitigation potential of dietary changes is estimated as 0.7 - 8.0 GtCO2eq yr-1 by 2050 (medium confidence)"
89	B1	6	All	"Poverty reduction" should be changed to "poverty eradication" throughout the chapter
90	B2	6	All	"Improved forest management" should be changed to "forest management" throughout the chapter
91	Figure SPM.3	6	97:4	The red cells in the Desertification and Land degradation column of the bioenergy and BECCS row should be removed.

	SPM Page:Line	Chapter	Chapter Page:Line	Tricklebacks
92	Figure SPM.3	6	97:4	The text in the last column of the bioenergy and BECCS row should be changed from "Desertification: Moderate adverse impacts of large-scale bioenergy and BECCS through increased pressure on land (Table 6.33). Land degradation: Large adverse impacts of large-scale bioenergy and BECCS through increased pressure on land (Table 6.41)." to "Desertification: Up to 15 million km2 of additional land is required in 2100 in 2°C scenarios, which will increase pressure for desertification and land degradation {6.4.3.1.5; 6.4.4.1.5}. This defines the maximum area potentially impacted, though the actual area aected by this additional pressure is not easily quantified. Land degradation: Up to 15 million km2 of additional land is required in 2100 in 2°C scenarios, which will increase pressure for desertification and land degradation {6.4.3.1.5; 6.4.4.1.5}. This defines the maximum area potentially impacted, though the actual area affected by this additional pressure is not easily quantified."
93		6	5:25, 10:25, 115:4, 140:9, 141:13	"Indigenous peoples and local communities' was phrasing adopted in SPM
94		6	5:25	add producers before consumers
95	Box SPM1	6	142:34	"Illustrative Futures" should say "Shared Socioeconomic Pathways"
96	Box SPM1	6	142:34	First sentence of section "Illustrative Futures" should say "The five SSPs" and not "The three illustrative futures"
97	Box SPM1	6	142:34	Text in section "Illustrative Futures", starting with "SSP1" should be replaced with final SSP description bullets from Box SPM.1 (but retaining the references in the current paragraph)
98	Figure SPM.4	6	142:34	Figure should be replaced with the figures in panel A of the final Figure SPM.4
99	Figure SPM.4	6	142:34	"Policies in Illustrative Futures" should say "Policies in these Pathways"
100	Figure SPM.4	6	142:34	The section on "Land use and land cover change" should use the titles and text from the panel labels in the final Figure SPM.4a
101	Figure SPM.4	6	142:34	Table should be replaced with the table in panel B of the final Figure SPM.4
102	Figure SPM.4	6	142:34	Caption for figure should be edited to match the final caption of panel A in Figure SPM.4a (but last sentence with the citation should be retained)
103	B1.1	7	100 (Table)	Policy/Programmes/Instriesponse options are in Table 7.5. Please add 7.6.6. in the list of reference.
104	B1.2	7	100 (Table)	Policy/Programmes/Instriesponse options are in Table 7.5. Please add 7.6.6. in the list of reference.
105	BOX A6	7	101:1 (Box)	Cross-Chapter Box 9 exists in both Chpater 6 and 7. Suggest to specify the location of Cross-Chapter Box 9 at the end of Box A6. Namely, Cross-Chapter Box 9 in Chapter 6 and 7.
106	B1.3	7	30 (Box)	Cross-Chapter Box 10 in Chapter 7 and Table 7.5 in Chapter 7 supporting policies and economic dimensions. So, please add Cross-Box 10 and 7.6.6. in the reference list.

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107		7	100 (Table)	Add sentence regarding other latitudes as in agreed SPM precipitation bullet and reference to new TS precipitation figure, which consists of a six panel figure (3 datasets by 2 periods)
108	B1.1.	7	73(Box)	Forest conservation instruments are addressed in 7.5.6.4 and Table 7.5 in 7.6.6.
109	B5	7	30 (Box)	Policy/Programmes/Instruments for Sustainable land management are in Table 7.5. So, please add 7.6.6. in the list of reference.
110	C1.1.	7		Land-use zoning, spatial planning, standards, payment for ecosystem services etc are covered slightly over the multiple subsection of the chapter. Please replace it 7.4, 7.5.6, 7.6.
111	C1.3.	7	69:37	7.5.5. covers LDN mostly, please replace 7.4.5 with 7.5.5
112	C2.2	7		7.5.4, Cross-Chapter Box 10 in Chapter 7
113	C3.4.	7	101	Maladaptation is address in Cross-Chapter Box 9 in 7.6.6.
114	C3.4.	7	111	Maladaptation is address in 7.6.6.5.
115	C3.4.	7	141(box)	Frequently ased questions box addressed maladaptation breifly.
116	D1	7		7.4, 11 7.5.9, 7.7; Cross-Chapter Box 10 in Chapter 7
117	D2.1.	7		7.3, 7.4, 7.5, 7.6; Cross-Chapter Box 12 in Chapter 7
118	4:Footnote (1)	Glossary	44	Update definitions of net primary production (NPP) in the glossary, as agreed in SPM, to: 'the amount of carbon accumulated through photosynthesis minus the amount lost by plant respiration over a speciied time period that would prevail in the absence of land use.
119	Footnote	Glossary	55	Define vegetation greening: An increase in photosynthetically active plant biomass which is inferred from satellite observations.
120	Footnote	Glossary	14	Define CO2 fertilisation: The enhancement of plant growth as a result of increased atmospheric carbon dioxide (CO2) concentration. The magnitude of CO2 fertilisation depends on nutrients and water availability.
121	Footnote	Glossary	55	Define vegetation browning: A decrease in photosynthetically active plant biomass which is inferred from satellite observations.
122		Glossary	4	Define FOLU as a sub-term under AFOLU: FOLU (Forestry and Other Land Use)—also referred to as LULUCF (Land Use, Land-Use Change, and Forestry)—is the subset of AFOLU emissions and removals of greenhouse gases (GHGs) resulting from direct human-induced land use, land-use change, and forestry activities excluding agricultural emissions. {WGIII}
123	SPM A2.1	TS	p. 10, l. 9:11	Replace second sentence and the begining of the next sentence in the technical summary TS.2 with the values for 2006-2015 period for land and GMST temperature increase: "According to the single longest and most extensive dataset, from 1850-1900 to 2006-2015 mean land surface air temperature has increased by 1.53°C (very likely range from 1.38°C to 1.68°C) while GMST increased by 0.87°C (likely range from 0.75°C to 0.99°C). For the 1881–2018 period..."
124	SPM A2.1	TS	p.10	replace figure TS.4 with figure 2.2 from chapter 2, page 2-14. The paragraph refers to temperature changes but the figure shows schematic diagram.
125		TS	p.13	replace figure TS.5 with figure from chapter 2.4, page-2-30. The TS uses an earlier version of the figure with incorrect labels and outdated graphics