State of the Science: What you need to know about climate change and land
Q&A from August 28, 2019 webinar

Q: Will the presentation be made available to participants?

Q: What is the name of the water report coming out in October?
A: Feeding Ourselves Thirsty. Previous versions can be found here: https://feedingourselvesthirsty.ceres.org/

Q: Do we have an idea on how this tropical forest loss graph will change with the recent Amazon fires?
A: Our partners at Global Forest Watch will likely provide an update in early 2019, and we expect to see an uptick in deforestation. In the meantime, you can see recent deforestation alerts on the Global Forest Watch platform (www.globalforestwatch.org).

Q: How does afforestation increase risks of desertification? food security (is this just about what land could be used for?)
A: The quote from the IPCC report used in the presentation mentioned both bioenergy and afforestation, but in fact only bioenergy increases risks for desertification. Afforestation has the potential for negative impacts on food security (but not desertification) due to competition for land for food production. Cultivation of bioenergy crops has the potential for negative impacts on adaptation, land degradation, desertification, and food security because of increased pressure on and competition for land. – IPCC Land Report Chapter 6 pages 94,98

Q: I’d like to know what is the percentage of DIRECT livestock farming CO₂ emissions. I’ve heard different figures about that....
A: According to the IPCC< Direct emissions from livestock farming contribute approximately 7% of global anthropogenic GHG emissions. This includes methane emissions from enteric fermentation (ruminant digestion) and manure storage as well as nitrous oxide emissions from manure storage, application, and deposition on pastures. Other figures that you might have seen:
Direct livestock emissions are about 66% of direct agricultural emissions, and direct agricultural emissions are about 10-12% of global GHG emissions \(0.66 \times 0.11 = \sim 7\%\). You also might have seen the figure that livestock farming contributes 33% of total global GHG emissions. That figure includes all of the direct emissions sources mentioned above as well as emissions from land use change (both for ranching and for animal feed production), feed production, and energy use in livestock operations. If you’ve heard other figures, feel free to email Meryl at mrichards@ceres.org and I’m happy to try to clarify.

Q: Can the presenters discuss the role of Ag’s GHG disaggregated from the Forests and Land-Use? Total is 23% from all 3, but what share from just ag? And seems to conflict with claim that food system is 21-37% since that is larger than the combined category.

A: Direct emissions from agriculture contribute about 11% of global GHG emissions. The 21-37% for food systems includes emissions from production of fertilizers and pesticides, energy use on farms, transportation, and food processing, retail and consumption, in addition to direct emissions from agriculture and agriculturally-driven land use change.

Q: What are some of the leading innovative solutions coming out of scientific community to decrease deforestation in supply chain?

A: There are several types of innovative solutions to decrease deforestation, which are all complementary:

1. Innovations to make existing agricultural land more productive. This would include efforts such as pasture rehabilitation programs (for example the Novo Campo Program in Mato Grosso).
2. Improvements in monitoring, traceability and disclosure. Companies can now use satellite imagery to monitor deforestation in real time, and there are several ongoing efforts to trace deforestation back to specific mills or concessions. Examples include Global Forest Watch, TRASE, Agroideal, and many private service providers. There are also efforts to use blockchain to improve supply chain traceability. Finally, the scientific and NGO communities have recently made a step forward in establishing common norms for disclosing progress on no-deforestation commitments with the release of the Accountability Framework. Ceres’ recent report, Out on a Limb identifies two key metrics for reporting progress.
3. New financial mechanisms that provide more attractive terms to producers that meet sustainability criteria. Several examples of this have been launched
in the last year, such as the Responsible Commodities Facility and a collaboration between Bunge, Santander, and The Nature Conservancy to offer long-term loans to soy farmers to expand on already-cleared land.

4. Coordinated multi-stakeholder approaches, such as the Cerrado Manifesto, which are more effective than any single stakeholder acting alone.

Q: How does change in diet from meat to non-meat protein rank in the solutions?
A: Dietary changes are ranked among the solutions with the highest technical mitigation potential (> 3 Gt CO₂e per year globally) in the IPCC Land Report. Halving meat consumption and avoiding meat from producers with above-median emissions around the world could reduce emissions by 5-10.4 billion tons of carbon dioxide (equivalent to 11.6-24.2 billion barrels of oil), assuming reforestation of previously agricultural land.

Q: Is there a consensus that we need 50% more food to feed the world? Given the amount of food waste, if that would be tackled, would it affect the increase needed in food production?
A: Please see page 17 of Creating a Sustainable Food Future for more on the need for more food and the contribution of tackling food waste.

Q: Would it be possible to also have information on how much GHG emission and land used for plant-based products such as impossible and beyond?
A: See a recently-conducted a life cycle analysis for the Beyond Burger here.

Q: Is there data available showing the GHG emissions for deforestation-free beef? If ranchers managed to be deforestation-free could they potentially be called sustainable?

Q: Can you elaborate on some of the solutions on Tek’s take-home messages slide?
A: Many of these solutions are further described on Engage the Chain.

Q: Isn’t a lot of the land used for beef production used on an extensive basis and done intentionally as a means of hoarding land for future sale? Couldn’t Intensifying extensive beef production be a big part of the solution plus reduce land speculation?
A: Although the approach outlined seems promising, most of the land speculation for future sale is intended for soy plantations, and 70-75% of soy planted nowadays is intended for livestock feed. Thus, intensifying the beef production will not, by itself,
reduce deforestation. Our partners at the Chain Reaction Research published a comprehensive report on cattle-driven deforestation in Brazil in 2018.

Q: My perception is that in Amazonia many institutions that are related with main traders, always talk about livestock as the main problem but we must remember that is SOY that pushes cows into the rainforests and marginal lands - so soy is an indirect and very important driver of deforestation. Anything to convince me of the contrary?
A: Indeed, soy is a very important direct and indirect driver of deforestation. Soy is not only connected to livestock production because it pushes cows into the rainforest and marginal lands, but also because 70-75% of global yields are currently destined to livestock feed.

Q: On methane reductions, it sounds like you rely on technological innovations. Do you see them bringing greater reductions than changes in farming processes?
A: For methane emissions from manure, changes in farming processes (e.g. aerobic composting, biodigesters) can go a long way. For enteric methane emissions from livestock, farming practices can improve productivity and reduce methane emissions per unit of meat or milk produced. But to reduce enteric methane on an absolute basis, technologies such as methane inhibitors or breeding animals for reduced methane production are needed.

Q: Do I understand that non-land use emissions are much higher than land use emissions. yet most of your solutions/actions outlined deal with land use. please explain...
A: They are actually about equal! However, avoiding land use change is one of the most cost-effective and immediately available options for reducing emissions from land, which is why we focus on it.

Q: How does this sort of reprioritization drive returns? Our current worldwide model for aggressive return drivers can be risky to the planet depending on where investors and companies choose to go. What sort of restructuring that incorporates the elements discussed today can be linked to a comparable return profile?
A: Climate change has introduced to investors and companies alike the need to think and act beyond the next quarter or the next year. While physical risks / impacts from climate change are now happening one way or another with regularity, it may take years for transition risks to be fully apparent. Companies have an obligation to prepare for realistic eventualities and deliver sustainable profitability to their shareholders — and investors have a fiduciary duty to their members and clients to
account for all risks that can affect investment return. Being ignorant of or oblivious to climate change risk will ultimately drive corporate financial return (profitability) and investment return downward.

Q: How effective are corporate deforestation commitments? Research indicates that zero-deforestation supply chain commitments may have a limited impact on deforestation due to their small coverage of the global market for the targeted commodities, lack on biome-wide implementation, use of net deforestation targets rather than gross, and lack of specific and immediate implementation dates.
A: All great points. Deforestation commitments are more effective when they are time-bound, applied to gross deforestation rates, verified with a high level of traceability, and accompanied by a supplier assurance policy to ensure that suppliers are complying with the policy for their entire operation. The gaps are reasons why multi-stakeholder efforts such as the Cerrado Manifesto are so critical.

Q: Can you provide a reference for WRI guidance on food and beverage scope 3 emissions?
A: GHG Protocol has a scope 3 standard and agriculture guidance. Guidance on land use change and carbon sequestration is in the works.