Session Report

2225 - Climate-smart agriculture - Propaganda or paradigm shift?

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1. What are the session key findings? What are the new Lesson(s) learned / Scientific progress (since AR5 release, if relevant)?

- Agriculture, which is an essential sector when considering climate change and related negotiations, has often been seen as a problem in relation to climate change. However, agriculture should be advocated as part of the solution; CSA is a useful approach in this regard, not only for looking at agriculture, but at the nexus between food security, agriculture and climate change.

- Climate-smart agriculture was designed to be programmatic concept, acting between knowledge and policy in order to establish the correct technical, policy and investment conditions required for agriculture to respond to climate change and future food demands. However, CSA might become a fuzzy and loose ‘buzzword’. This should be avoided; for CSA to be a useful concept, and for the necessary transition in agriculture to occur, further robust evidence is required.

- The links between research communities and policymaking should be strengthened. Research communities could be well suited to aiding institutional innovation and policymaking.

- It should be understood that most practices and examples of CSA are somewhere on a CSA continuum, but that few, if any can address a triple win CSA ambition (food security, mitigation of and adaptation to climate change). In turn, it is critical that trade-offs and decision-making around CSA are further developed.

- Local ownership of CSA initiatives is critical to prioritization; as such, metrics should also be adapted to the local context, and it should be recognized that the process is as important as the content.

- Scaling is an important issue within CSA, in terms of identifying and assessing solutions at the local, landscape and global levels. How to link these different levels of action in a coherent and effective way should form a priority.
2. **What are the major knowledge Gaps and Research Needs identified in the session?**

   1. The concept of food security needs to be better integrated into the CSA concept. Whilst availability is well integrated into CSA, ‘access, stability and nutrition’ have been somewhat neglected to date.
   2. Conceptual and numerical frameworks for CSA require further development.
   3. Farmers are key actors in relation to CSA and need to be more systematically included in research and development efforts.
   4. Further modelling of CSA could be beneficial to understanding and decision-making.
   5. Risk assessment and cost-benefit analysis within the context of CSA requires further attention, including in improving our understanding of synergies and trade-offs.
   6. The extent to which socio-technical systems of consumption and production need to be altered for CSA to become a reality should be further explored. Specifically, the role of consumers and consumption practices in CSA should be given greater focus, as there is currently little understanding within this area.
   7. Questions exist over how to take advantage of available innovations and solutions, especially where they are not fully competitive within existing markets and business models.
   8. The most appropriate methods for designing and promoting institutional and policymaking approaches should be considered further. In addition, how best to include public and private stakeholders in these processes is currently unknown.
      - Further understanding is required in terms of how to assess and learn from a diverse range of local innovative approaches, in order to have impacts at scale.
   9. There should be an increased research effort on inter-scaling (local decisions – global processes; global decisions – local processes) rather than upscaling on the one hand and development and institutional engineering on the other hand.
   10. Agriculture lies at the nexus of climate adaptation and mitigation, and this should be taken into account when designing and implementing solutions at all levels. Whilst models and metrics to assess the performance of agricultural practices are available for such a perspective, they require further development, in particular to measure impacts. The integration of qualitative and quantitative assessment is critical to CSA planning.

3. **Did the session discuss/identify promising approaches in the fields of Adaptation and Mitigation, or both?**

Climate-smart agriculture itself is a promising approach covering both fields of adaptation and mitigation, and we would contend that this is the main outcome of the session. Specific examples of promising approaches included:

   1. The detailing of a decision-support framework for targeting investments towards CSA practices and programs (Corner-Dolloff, et al., 2015).
   2. Broadening the genetic base and knowledge of cultivation crops for climate adaptation: A citizen science approach (Gupta et al., 2015).
   3. Climate-smart cocoa production: engaging with farmers and their supply chains in Ghana (Muilerman et al., 2015).
   5. Revamping Agriculture Sector through Sustainable Method: Using Solar Water Pumps in Punjab state (Study of selected Districts) (Kaur, 2015).
6. Managing the biological function of N2O reduction for mitigating soil N2O emission (Hénault, et al., 2015).
10. CSA Booster Flagship project – exploring ways to boost the development of CSA in Europe (Long et al., 2015).

4. Are there take-home messages from the session?
   1. CSA offers a potentially compelling and useful approach for preparing agriculture for the challenges of climate change and for contributing to negotiations regarding the inclusion of agriculture into the climate change agenda. This is because it is able to combine key challenges beyond agriculture, to include those of mitigation, adaptation and food security. However, the risk that it becomes a somewhat hollow ‘buzzword’ needs to be acted against through the production of robust evidence. For this to occur, interdisciplinary boundaries need to be overcome, and a focus has to be placed on problem-solving, participatory approaches and the effective linking and research and policymaking communities.
   2. Many empirical examples exist that demonstrate the ability of agriculture to contribute to climate-smart food systems and landscapes, however one of the main challenges faced by research and policymaking communities is in assessing and learning from these diverse examples, and developing methods for applying solutions across different contexts and scales.
   3. Farmers and other key agro-food chain actors will implement practices consistent with CSA. In order to enhance adoption of CSA practices, we need to understand which options are most attractive to these actors, which is likely to involve research and policy working in a participatory and systematic way.

5. Are there Important Quotes from the session?

6. Please include any other remark that you might have.