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WEATHERING THE 'PERFECT STORM'

Addressing the Agriculture, Energy, Water, Climate Change Nexus

The Crawford Fund
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Editor Ann Milligan

Q&A

Chair: Mario Herrero

Panel: Bruce Campbell, Alice Joan de la Gente Ferrer, Di Mayberry

Q: Lisa Cornish, Devex

Bruce, I have a question for you. I just want you to expand upon where you said you won't work where there's no serious government commitment to change. Are there governments that you've already said you're not working with? And how are you assessing their commitment to change?

A: Bruce Campbell

I don't think it would be politically wise for me to mention where we won't work, in this audience, and where we decide to stop working as well. It's not simple, but there are various indices out there which one can use, but of course they're not foolproof either. There's governance indices; there's ease of doing business indices;... . Discussions are held in confidence.

Q: Josie Ginty, The University of Melbourne

I was wondering, in the context of the CSVs, as part of the integrated improvement in their agricultural outputs, as a general question to the panel in relation to the role of red meat in diets, what do you think of the potential of fish farming as an alternative source of 'meat'? What do you think the impact of that is on sustainable agriculture?

A: Alice Joan de la Gente Ferrer

What I understand is that in one or two of the CSVs, fish farming is practised but really for home consumption only. However, they're trying to increase production also for market.

Q: Glenn Denning, Columbia University

Climate-smart agriculture claims to have objectives of food security. It's relatively easy to comprehend farmers adopting technologies related to food security, productivity and adaptation; there are clear incentives to individuals to act. I'm wondering if you can give me some examples of how you tackle the third objective, the mitigation objective when there are no incentives?

A: Bruce Campbell

In the conversation with farmers we don't start with climate-smart agriculture. We actually start the discussion with talking about what they want to do in terms of livelihoods. So although it's a kind of guiding principle at the top level, when we're at the field it's what can be done in smallholder dairy, for example, in Kenya. Mario could actually answer the question much better than I could. We talk about practices where there are definite benefits for income, for women farmers, for greenhouse gas efficiencies and adaptation, so they don't see that it's absolutely essential to do all three things in every single place in the world. We use it as a guiding principle in trying to put agriculture on a low emissions pathway.

This Q&A report has been prepared from a transcript.

A: Alice Joan de la Gente Ferrer

The CSA interventions in the CSVs are not fixed. There is a process of CSA prioritisation, based on inputs from multiple stakeholders. You will notice that the CSA interventions adopted in different CSVs differ a lot because of many factors.

Q: John Dixon

For Alice Joan de la Gente Ferrer, thank you for the presentation. One of the key concerns for many of us is about moving to scale. Specifically, from the climate-smart villages, I would like to know what are your key indicators, given the context-specific nature of most of your work?

A: Alice Joan de la Gente Ferrer

There are two mechanisms here. We have the scaling up, where you go to policies and institutions. And then we have to differentiate two kinds of CSVs. One is CCAFS-facilitated CSVs; there are seven of these in South East Asia. And we also have CCAFS-partner-initiated CSVs, and there are many of those. Also, we have the Philippines Department of Agriculture 'Adaptation and mitigation initiatives in agriculture' programs, in my country. Also in Vietnam right now there are only three CSVs, in the north, middle and south of Vietnam, but they are introducing also the concept into the new program in Vietnam, the Nong Thon Moi (NTM) Program.

A: Bruce Campbell

John, Esoko started in a CSV, but essentially they're taking it to scale. So it's thinking about the things we do at R&D platform, and then there are different pathways to scale for different kinds of things: insurance, or technologies, etc.

Q: Peter Wynn, Charles Sturt University

A question for Dr Mayberry. How effective are your dietary additives and your legume in ruminants? And do you think they're going to be applicable for smallholders?

A: Dianne Mayberry

Thanks Peter. The effectiveness of these supplements and additives vary. Some of the algae and seaweed additives have been shown to almost completely suppress methane. Other trials have produced more conservative estimates of a 30–40% reduction in methane, but that's still huge. The same with 3-NOP, which is the additive that DSM are hoping to bring on the market next year. They're saying a 30% reduction in enteric methane. See <https://www.dsm.com/corporate/solutions/climate-energy/minimizing-methane-from-cattle.html>.

In terms of applicability to smallholder farmers, obviously it's going to come to down to cost and practicability. At the moment some algae is being grown in Vietnam, because it's cheaper than growing it in the US, so if there were places in Asia where you could grow or produce these supplements at low cost, who knows? Maybe it is possible to get them at low enough cost for smallholders, or maybe the governments will support this. If it's supported in the right way, it is possible. And certainly in those intensive systems, if it is economic, it's very easy for farmers to give that to their cattle or their sheep every day.

Q: Luke, The University of Queensland

Continuing off that question there, do you think we should be looking at changing the actual animal systems to possibly other animals that don't produce as much methane?

A: Dianne Mayberry

That's a great question. It would depend hugely on the context. Red meat is produced by ruminants, and the great thing about ruminants is that you can keep them in areas where you can't grow other livestock (like pigs and poultry, which don't produce enteric methane). Where grains are expensive, such as in Australia at the moment with the drought, purchasing feed gets very expensive very quickly and we're seeing pig farmers going out of business because they can't afford feed for the animals. That's not to say the ruminant industries are having an easy time, but sheep and goats and cattle can consume a wider variety of feed including grasses, hay and crop stubbles, which is where ruminants have a big advantage. However, in areas where grains are cheap and readily available, (e.g. South East Asia) pigs and poultry can be a lot more efficient to produce.

Q: Tony

Two questions for Dr Mayberry, who gave an excellent presentation. Can we copy the cobalt bullet technology for supplying these supplements? That's what we used in southern Australia to supply cobalt on a permanent basis to grazing ruminants. And second question is, as we increase woody vegetation, will that mean lower stocking rates and lower profitability?

A: Dianne Mayberry

On the first question, slow release devices or controlled release of compounds to reduce enteric methane in ruminants: yes, I believe that slow-release devices are one of the options scientists are looking at to provide these compounds to grazing animals.

On the second question, have a look at the Wambiana grazing trial over the last two decades, done by Peter O'Reagain and colleagues from the Queensland Department of Agriculture and Fisheries. They've been grazing cattle and they've found that the lower stocking rates have been a lot more profitable than heavy stocking rates, and have maintained pasture condition. So there are ways that farmers can make more money out of these systems.

Q: Female

My question's also for Di. Has there been any research done through CSIRO on the positive effects of hooved animals on pastures and grasslands in the context of carbon sequestration and therefore reducing greenhouse gases? I'm thinking of systems like cell grazing, time-controlled grazing and using hooved animals to actually sequester carbon. We're not hearing this story and about the enormous benefits that the beef industry can bring to that process.

A: Dianne Mayberry

That's a great question. The scientific evidence on this is mixed, and I would point people towards the '*Grazed and confused*' report, published by the Food Climate Research Network in 2017, for a summary of these issues. I think it will

depend a lot on the places where these systems are in use and how livestock are managed. Factors that limit carbon sequestration include extremes in temperatures, fire, floods, drought: those relate to a huge amount of northern Australia. But in southern Australia where we have different climates and different pasture species, there may be opportunities for sequestration. I can't answer your question better, though I'm sure there are people here that can.

Q: Mario Herrero

Bruce, you showed some very modest numbers for farmers 'stepping-up', intensifying – farmers really making significant improvements. What does that say in relation to programs like CCAFS that are funded externally and that have huge expectations of creating change in these smallholder communities? Are there things that you would have done differently if you had known those results in advance?

A: Bruce Campbell

Those numbers were from the start of our work, so the hope is that there's massive change. In the last 18 months we've been on, development assistance in its current shape is not going to deliver the goods, and that last circular diagram that I put up, essentially shows that we really need to do something differently. And that means us not being researchers trying to get partners to do our things, but being researchers that are responsible as part of a partnership in development. And I could just say that I've seen the new figures for Ghana, northern Ghana, where there's some massive take up of the work that we've been doing, so there are some positive stories as well.

Chair: Mario Herrero

That's a great way to finish a session like this one. So it seems that there is a perfect storm brewing for creating positive change, and that's great. Please, let's thank the speakers for some great presentations.