Global Donor Platform for Rural Development

WEBINAR REPORT
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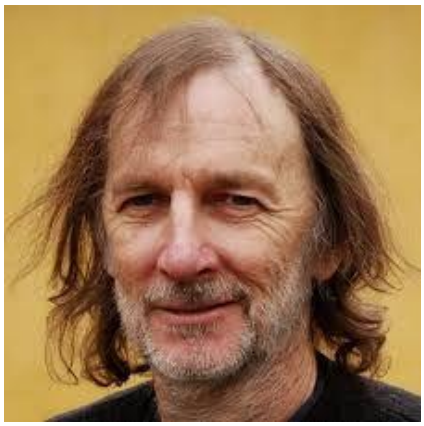
INDICATORS FOR CLIMATE ADAPTATION IN AGRICULTURE

Speaker

Dr. Bruce Campbell is Director of the CGIAR Research Programme on Climate Change, Agriculture and Food Security (CCAFS), a staff member of International Centre for Tropical Agriculture (CIAT) and Senior Advisor to the Global Centre on Adaptation (GCA). He works on adaptation to increased climatic variability and progressive climate change, and on low emissions development. Prior to his current engagement, Bruce carried out some work in Zimbabwe, Indonesia and Australia. He has published over 150 journal articles and more than a dozen books.



Presentation highlights

In his presentation on indicators for climate adaptation in agriculture, Bruce began by introducing the global adaptation goal. He then went on to describe the complexities and difficulties associated with the selection and use of indicators for climate adaptation in the agricultural sector. Finally, drawing on different sources of indicator selection, he provided a set of recommendations to assist practitioners in devising appropriate tools to assess the adaptive capacity and resilience of agricultural systems.

The global adaptation goal put in place as part of the Paris Agreement (2015), released at COP 21, is to enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change. As part of this goal, Parties are requested, but not required, to monitor and evaluate adaptation indicators and to periodically take stock of collective progress made. However, in 2017, the United Nations Environment Programme (UNEP) wrote that there are no existing frameworks that fulfil all the criteria for assessing progress towards the global goal.

Also at the national level, there is not great progress in terms of setting targets and putting in place methods to measure progress towards targets. For example, there are only 40 developing countries with quantifiable targets in their Nationally Determined Contributions (NDCs). Yet, there is some positive news in the fact that adaptation and development are very interconnected. For instance, there are nearly 900 activities in NDCs that are related to Sustainable Development Goal (SDG) 2. In light of this, it might make sense to look at SDG indicators as a means of measuring adaptation.

In outlining the problems and complexities for adaptation metrics, Bruce identified seven key challenges:

1. **Lack of a single metric**
2. **Lack of ability to aggregate information across sectors, and from fields to the globe.**

To illustrate these first two challenges, Bruce first described the various advantages of the mitigation metric:

- It has a clear unit of measurement
- There is an easy way to take measurements
- There are emission factors for converting hectares, practices, etc. into CO_2 equivalents
- It is scale-free
- It can aggregate across sectors.

In comparison, the limitations of the adaptation metric are that:

- There is no clear unit
- There is no agreed adaptation value for particular practices
- It is not scale-free
- It cannot aggregate across sectors.

3. **Many confusing interlinked concepts**

Concepts such as vulnerability, adaptive capacity and resilience are similar and interlinked and it can be difficult to differentiate between them, even for those who have been working on climate adaptation for many years. This means that these terms are not very useful for people who are working on climate adaptation in the field.

4. **Lack of agreed off-the-shelf method**

In a recent publication, the FAO identified 43 different frameworks used by different agencies to measure climate-smart agriculture, which has an adaptation pillar. There is also relevant literature outside of the agriculture sector in which a further 11 frameworks are identified. Moreover, within the academic literature, there are at least 1000 papers on indicators related to resilience and adaptation. The sheer numbers of indicator frameworks illustrate the lack of an agreed off-the-shelf method.

5. **Difficulty to identify, combine and interpret the types of relevant indicators**

How do you choose indicators from the many hundreds available? And once they have been chosen, how do you combine them? Are they equally weighted in some final measure of adaptation or are they weighted differently? This is a very complex area.

6. **Nature of climate adaptation (e.g. long timescales for impacts and outcomes in a changing climate)**

Adaptations that may seem very positive in the short term may be maladaptive in the longer term. This means that tackling long- and short-term goals within a single indicator set is very challenging.

7. **Multi-dimensional challenges**

The challenges are multi-dimensional, with indicators covering many different fields. Moreover, successfully building adaptive capacity requires addressing different domains. Because there are multiple entry points, many indicators come into play which then raises the question of how you weight these.

Having outlined the key challenges, Bruce then went on to outline five steps to the solutions:

1. **Have a good theory of change**

When working on adaptation in practice, it is important to ask: what can you do in this very specific context to build adaptive capacity? This requires contextualising the adaptation action, identifying its dimensions and contributions and formulating a results framework. The selected indicators should then be linked very closely to the theory of change.

2. **Use standard M&E framework linked to pragmatic and simplified indicators**

Using the standard M&E framework – i.e. include process, output and outcome type indicators – and then select specific indicators that are very closely related to the theory of change.

3. **Use context-specific indicators in projects**

When using context-specific indicators in projects, it is good to at least draw on indicators that have been used elsewhere. In this way, experience can be built up and hopefully there can be a reduction in the overall number of indicators that are used in practice by different agencies. Three sources of inspiration for choosing indicators are:

- The recent FAO publication: Jacobs, H. and Al-Azar, R. 2019. *Dare to Understand and Measure (DaTUM) – A literature review of Monitoring and Evaluation (M&E) frameworks for Climate-Smart Agriculture*. Rome, FAO.
- *The CSA Programming and Indicator Tool*
- The FAO (2017) report on *Tracking adaptation in agricultural sectors (TAAS)*

When using any of these sources, it is still very important to have a good theory of change.

4. **For an outcome indicator, align as far as possible with the SDG indicators**

For the ultimate impact or outcome indicator, you can align as closely as possible with the SDG indicators. You then need to ask: what do you want as a resilience outcome indicator? For example, in relation to social welfare, it is important to look at whether recovery after a shock is slow or rapid. To really understand resilience and adaptation, you need to have a time series of data for the impact. Whereas for mitigation there is a single metric, there is unlikely to ever be a single metric for adaptation. That said, it is likely that one of the metrics

will have a dollar value attached to it. Bruce then provided some specific examples of SDG indicators that may be linked to adaptation.

5. **For process/output indicators, select a diversity of indicators**

The first step for the process or output indicators is that these should at least reflect a diversity of indicators. Moreover, it is once again important, when choosing indicators, to refer to the theory of change.

In conclusion, Bruce stated that there are plenty of frustrating complexities in this area and the fact that there are thousands of publications on this topic is concerning. There is very little progress towards creating some consistency and a lack of coordination amongst agencies. Nevertheless, there are some ways forward as outlined in the five steps.

In finishing his presentation, Bruce posed the following question to the webinar participants: Is it not feasible to align indicators or approaches across agencies?

Q&A highlights

Question from the audience: Irrespective of Indicators how do you establish the counterfactual of the non-project path? Is this a problem for all indicators?

Bruce Campbell: This is a great question because to assess resilience or adaptive capacity, you essentially need time series data and you have to have a counterfactual of the project verses the business-as-usual or the non-project path. There's a whole bunch of methods for doing that but it is particularly challenging and it's a problem for all indicators in all sectors. While the counterfactual is a challenging area, it is something that's definitely needed.

Question from the audience: Are there specific tools or approaches (i.e. from one of those reports that you highlighted) that you would recommend that people converge on or do you think that we need to collectively come up with a new set of indicators together?

Bruce Campbell: It would be very dangerous for me to suggest one because the agency that I suggest would be very happy and the others would be very angry. There are positives and negatives in many of the different schemes and I think it really needs these agencies to come together and make an agreement. It would be useful to get an expert group together to move this forward in order to be able to converge on something.

Question from the audience: Provided that agriculture is generally context specific, in the Climate Smart Agriculture (CSA) Programme and Indicators Tools, how much flexibility do you allow for M&E practitioners to tailor indicators and their metrics to suit their particular needs?

Bruce Campbell: This is also a very good question because adaptation, and agriculture in general, is so context specific. For example, conservation agriculture in a particular location has a specific set of household assets that may enable a particular pathway for building adaptive capacity. In a location where those assets are missing and the biophysical conditions are different it may be a totally maladaptive pathway. There are so many examples like that,

which means that one does have to be very context specific. Yet, if you had a long list of indicators, you could still converge on some things. It's also dependent on if you're thinking about process indicators or outputs and outcome indicators. At the process level, there's going to be so much divergence and context specificity that you could imagine very different indicators for different projects. As you go up the pathway towards outputs/impacts, there is hopefully more convergence.

Question from the audience: Indicators usually cover both climatic and non-climatic variables (such as population growth, poverty and food insecurity), do you frequently encounter the issue of data overload? If so, how do you handle the situation?

Bruce Campbell: This is totally true. The complaint about the SDG indicators, for example, is that there are hundreds of them – if countries are going to implement these, it's going to be extremely costly. Go as simple as possible is the only solution. But this is extremely difficult.

Question from the audience: Do you have any advice for dealing with a situation where there is a lack of baseline information to formulate indicators?

Bruce Campbell: I don't really see that as a problem. If one starts with a theory of change, that for me is the way to select the indicators. Then of course to be practical about which indicators are easy to collect and not easy to collect and for which there is no information available. If there's absolutely no information on particular indicators, one would have to start with the baseline work in particular areas. So I don't see it as a challenge.

Question from the audience: In general, the *theory of change* states what expected or changed result will follow from a particular set of actions. Most of the critiques of the theory are commonly directed towards its linear thinking which assumes that inputs lead to outputs and outputs leads to outcomes. Do you see any pitfalls in applying such a theory in formulating indicators relating to the complex and non-linear system that is climate change and agriculture?

Bruce Campbell: Yes, I definitely see pitfalls and I totally believe that everything is not linear, that there's learning and change and one has to adjust. But I think that in good project design, one also has the possibility of changing one's theory of change. That of course creates challenges for indicator selection. If, for example, there's a massive change in direction as a result of what's happening, essentially a new set of indicators may become more valid than the past ones. So that would be a big challenge if it means that you are changing indicators all the time. So I agree with you that everything shouldn't be linear but hopefully one can be wise enough to choose robust indicators that will be meaningful in particular contexts.

Question raised by Bruce Campbell: What would it take to come together to really converge on a single framework for adaptation monitoring, or is it an impossible dream?

A participant from FAO responded that the FAO is seeking a shared narrative around resilience and adaptation for agriculture and food systems that would also be valid for other systems beyond the agriculture sector. She suggested that an opportunity to hold a joint discussion on this topic could be around COP 25; for example, in a dedicated session as part

of the development and climate days. From the FAO's perspective, this would not only be about indicators but also to agree on the types of interventions.

Question from the audience: How to deal with differences between short- and long-term adaptation goals? What would be a meaningful timeframe for adaptation projects considering that long-term predictions of climate change effects are prone to uncertainty and there is a need to demonstrate positive impact in a relatively short time period? Do we need to work with climate change scenarios?

Bruce Campbell: We are mostly focused on the short term. There's enough challenges given climate change variability and there's plenty of evidence that this variability is linked to global warming. So I think a lot of the effort should be focused on climate change variability and changing seasons and extreme events and those sorts of things and therefore project-type interventions. However, I think that one at least needs to give a little attention to the long-term, in other words to work with climate change scenarios; and there's quite a lot of work in the climate science community on decade-level scenarios. In this way, one is at least implementing no regret options or thinking about mal-adaption and the possibility that short-term actions that deal with variability may be maladaptive in the longer term. So, the answer is that perhaps 85% of the effort is short term and dealing with climate change impacts that we're already feeling and some small amount of effort is making sure that we at least understand the no regret options for the kinds of projections that are relevant in particular places.

Question from the audience: Thus far we have been viewing adaptation as a technical practice. As a tracking and intervention community, we haven't really addressed questions of how adaptation is inevitably creating winners and losers – sometimes through trade-offs that are deliberately made, sometimes through vested interests and power plays that are made through any processes of change. How can we integrate these distributional effects of adaptation as a part of tracking?

Bruce Campbell: I'm totally in agreement with you that there's going to be winners and losers but I think that that would be part of your theory of change in order to have an understanding of where things are likely to go for marginalised groups and to have differentiated interventions to try and address some of those. Let's take an extreme example of an area where a solution is to move agricultural productivity for some farmers, but for a good portion of the farmers their land holdings are too small and they haven't got the assets that can link them to markets. In this case, the best option for those farmers might be to exit agriculture. Then I would say that the theory of change for adaptation is in the project interventions that are also talking about exiting agriculture and social protection schemes and those sorts of things and then indicators are linked into that. So, there's some indicators that are dealing with certain portions of the population and some indicators that are dealing with other portions.

Comments from participants

Perhaps one of the ways of moving together on indicators and monitoring of adaptation and resilience is to have a joint conversation to agree on the key types of interventions that are needed, especially for agricultural systems but also for other sectors. The FAO is

proposing an intervention to demystify what it is that we are trying to do in addressing both short-term risks, disasters, extreme events, and more intermediate-term changes.

Bruce welcomed the suggestion to have a joint conversation amongst the various agencies. It would be quite a long list of adaptation or resilience-building entry points given the fact that context is so different in different places but if you at least had the long list you could structure the conversation about what kinds of indicators we need for these different sorts of interventions.

I would like to broaden the conversation a little bit because much of this presentation was focused around project-level indicators, but at the same time national governments are increasingly mandated to do reporting against the NDCs. I would suggest that internationally, we merge these conversations so that the conversation around project-style indicators flows into the conversations of national-level government reporting.

The mitigation people have an easy job because from fields to globe it's all with the same indicators more or less. As regards adaptation, one can think of some indicators at least which can potentially scale, such as the dollar one: income at farm level, income at district level, income at global levels. There are also some relevant frameworks such as the TAAS from FAO, which is really focused at the national level but also contains indicators that you can use at the project level. There is not necessarily a disconnect between project-level and national-level approaches.

Please feel free to send questions or feedback to oliver.hanschke@donorplatform.org

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