

# LAND, CLIMATE, AND THE CONSTRUCTION OF SCIENTIFIC KNOWLEDGE: AN INSIDER'S VIEW OF THE IPCC REPORT ON CLIMATE CHANGE AND LAND

*An Interview with Marta Guadalupe Rivera Ferre  
by Katie Sandwell*

This article is based on an interview carried out on February 24, 2020.

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**TNI** is an international research and advocacy institute committed to building a just, democratic and sustainable planet. For more than 40 years, TNI has served as a unique nexus between social movements, engaged scholars and policy makers.



*“Every narrative responds to a mental model, and every narrative builds a political future. So, every narrative is political.”*

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Land plays a critical role in the processes that sustain human and non-human life on our planet. How land is used, by whom and for what purpose will have critical impacts on our collective future. In August 2019, the Intergovernmental Panel on Climate Change (IPCC) – the UN body for assessing the science related to climate change – published its Special Report on Climate Change and Land.<sup>1</sup>

This report tackled the complex relationships between climate and land, bringing together world-renowned scientists to explore the connections between our food and agriculture system and the changing climate.

In this interview, we talk with one of the lead authors of the chapter on food security to better understand the linkages between climate, land, and the right to food and nutrition. We explore the process behind the report, its strengths and limitations, and some big questions about how we can manage and use land for a more just and sustainable future.

**This report is incredibly impressive and comprehensive. You were also part of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD). What is it like being part of an undertaking like this? What was distinctive about the IPCC process?**

When I was part of the IAASTD I was working on a chapter with some colleagues who were completely convinced that transgenics/GMOs were the technology that would solve all our agriculture and food related problems. Before I met them,

<sup>1</sup> IPCC. *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. IPCC, 2019. Available at: <https://www.ipcc.ch/srccl/>.

I had a kind of non-rational belief that researchers defending these arguments were somehow paid by big multinationals. When I met these colleagues, I had to change my view: they were saying this because they really believed it. They are very good people who really want to solve these problems, but they have a specific legitimate narrative and discourse, based on their own lives, knowledges and experiences.

You find this everywhere in science and decision-making. Participating in these diverse spaces with different kinds of researchers showed me that I have to respect those views – I have to stand for my own view and perspectives, but I also have to respect others. I try to show them alternative visions, of course, but this experience has changed my attitude towards colleagues who have opposite views about agriculture and food. This was common to both the IPCC and the IAASTD.

But, in the IPCC especially, probably because of the current context of climate emergency, and advances in systems thinking, scientists were really open to new perspectives, trying to acknowledge that what we have been doing is not working: ‘business as usual’ is not possible anymore.

Still the IPCC (like the IAASTD) is part of an inter-governmental process. The reports have to be approved by governments. So, while they are always evidence-based and purely scientific, sometimes you cannot say exactly what you want, and how you would like to. Wording is very important, and there may be specific words that some governments will not approve. But, you can often develop the concepts or processes behind these words to say what you need to, without using a sensitive term. You have to have these type of things in mind when participating in these processes, like in many other kinds of inter-governmental processes. When a sensitive word is introduced; that is already an important advance. For example, food sovereignty appears in the last IPCC report. That’s amazing!

**You were working on the chapter on food security, what kind of engagement did that working group have with the other chapter working groups?**

This report took three years of work for the authors. In that time you have four face-to-face meetings. You work remotely with your chapter team throughout these years, but in the face-to-face meetings you have to try to integrate and coordinate with the other chapters, to make sure there is coherence, that the report has some kind of narrative, and that all the legitimate views and findings are included. For instance, if there is no scientific agreement about something that has to appear in the document. All this coordination effort is done in these four, weeklong meetings, which are very intense!

**You have done a lot of research on agroecology and traditional knowledge. I was glad to see agroecology mentioned, and profiled as a possible solution, but I noticed the focus was quite technical, without some of the social and political dimensions that are often brought into the discussion elsewhere. Can you tell me about the dynamics behind that? Is that a necessary feature of this kind of report, or could reports like this be strengthened by including more political and social-scientific angles?**

Well, it has a lot to do with the dynamics of assessment reports, and how they are structured. The IPCC has three working groups: one focuses on the biophysical dynamics of climate change; one on adaptation; and one on mitigation, including how this will all be tackled in terms of policies. So, in a way, the IPCC is quite fragmented.

Within agriculture and food, the scientific community has been calling for integrated assessments. The special report on land was, in fact, an attempt to produce a more integrated assessment of agriculture and food, through the entry-point of land. But producing an integrated report, and working together with experts on adaptation and on mitigation, is still new and challenging.

In this report, you have chapters on desertification (chapter 3) and land degradation (chapter 4), and the chapter on food security (chapter 5), in which I participated. Then synergies and trade offs are covered in chapter 6, and policies in chapter 7. So, while you do cross-chapter meetings and try to integrate, to make sure there is coherence, still different authors write different chapters. So my chapter addresses agroecology, but only in the context of food security.

We looked at food security, in all its dimensions, and how they are impacted by climate change, as well as how food systems impact climate change in terms of greenhouse gas emissions. Then, we had discussions on synergies and trade-offs, where we talked about agroecology. We wanted to show how some agricultural and agroecological practices, like capturing organic matter in the soil, intercropping, crop rotation, etc. can contribute to both mitigation and adaptation. So, our focus was on showing: if we put the focus on agroecology, we can have a more integrated response [to climate change]. We also made the link with local/neglected varieties, and with Indigenous knowledge. So our more technical focus was the result of the structure of the report, the authors that participated, and the focus of our own chapter.

In the supplementary materials – but not the main text – we do have some information about and examples of how civil society movements are part of food security governance at the global level. But this is part of the process, you have to lose some things along the way. Agroecology is also mentioned in chapter 6 on synergies and tradeoffs, and chapter 7, on policies.

**Did you feel during the process that there were any ‘blind spots’ or important areas that were outside your ‘mandate’ to consider? For example, many land activists today are very concerned about increasing land concentration at the global scale, but this doesn’t appear in the chapter on food security. Did this feature in your discussions? Do you think this shows us something about the process?**

This is covered in chapters 6 and 7. Chapter 6 explores 41 potential options for mitigation and adaptation, for land degradation, desertification, and food security. They analyze different synergies, trade offs and associated costs. So, for example, they show that bioenergy can be an option for mitigation but that large-scale projects can compete for land and harm food security for local people. So, bioenergy is better pursued in local, small-scale ways, if we want to do it in a coherent and integrated way.

In chapter 7 there is a specific section on land tenure where land grabbing is discussed. It shows the different visions regarding the topic but also how the land grabbed may be associated with monocultures and unsustainable land use practices, with negative consequences for adaptation, mitigation and food security. Secure land tenure is key to support adaptation. We also wrote a cross-chapter box there, which addresses gender, and problems around land tenure for women. We show that differential vulnerability to climate change is related to inequality in rights-based resource access, established through formal and informal tenure systems. Due to ingrained patriarchal social structures, women face multiple barriers to participation and decision-making, including around land-based adaptation and mitigation. So, I am not sure about the extent of the discussion of land concentration itself, but the issue of land grabbing definitely appears in the report.

But, this is not an NGO or a civil society report, it is a governmental report and it has limits. Still, it is important that these issues are described. That they appear in this kind of document means that they cannot be so easily dismissed as just a concern of movements or civil society. It makes it impossible to deny that these things are happening. This information collected in a scientific space joins other findings from civil society and can be a valuable tool for affected communities when advocating for their rights.

**Yes, it can be a very important source of legitimacy! In the chapter on food security you show a lot of ways that countries and other actors might lead adaptation or mitigation efforts to protect food security in the face of a changing climate. As activists, we know that making these changes is rarely as straightforward as we might wish. What do you see as the biggest obstacles to adopting the solutions and alternatives you identified?**

There are many kinds of obstacles, including material ones, but I think the most critical obstacles are really mental. We have had decades of development policies, visions, and perspectives. This is a linear way of thinking, focused on growth. It sees technology as the solution to our problems, and sees Indigenous local knowledge as ‘backwards’.

We need to change this narrative. There are other narratives out there, but we need to make them more visible, so that they can really emerge as alternatives. It is really problematic that the mainstream, accepted narrative is not seen as political. When you provide a different narrative, even one based on research, people say, “oh, that is politics”. But the other one is also politics! Every narrative responds to a mental model, and every narrative builds a political future. So, every narrative is political. If I support a future based on economic growth, if I support a future built on the current model of development, this is politics, even if I have a scientific basis. When I speak about food sovereignty, people see it as politics despite the fact that it is based on scientific findings. Why is only this seen as political? Defending the status quo is also politics!

This is a big political and mental barrier. Policies respond to a mental model, a view of the way we should go. So, policies can be a problem, but we need to see from where these policies emerge, and change that.

**Is it fair to say, then, that part of the role of food sovereignty movements is to frame a different kind of narrative, and a new discourse?**

Yes, yes, totally. And I also see it as a kind of horizon: when you think about where you want to go, it is important not to lose sight of your final political objective. But, at the same time, you need to understand that you might never get all the way there, or not in your lifetime. Dialogue, negotiation, changing people’s minds, is a very slow process.

But an important change I have witnessed in the last few years is the recognition that ‘evidence-based’ means that we also need to put on the table when there is no scientific consensus. That is very important. In the IAASTD, that was one of the reasons why corporate actors pulled out: they didn’t see their arguments in favor of GMOs in the report. This is such a strength of scientific processes and spaces. If there isn’t scientific consensus about an issue, that in itself is important. So, in these international reports, we were able to include all the different, divergent discourses around controversial topics. This can help to open up broader social and political discussions about what kinds of solutions we want to support.

**Thinking about linear and progressivist narratives, many activists have concerns about the way that land-based climate adaptation and mitigation strategies can intensify pressures on land. They do that especially by framing traditional users as backward and inefficient users of land and resources in comparison with other ‘sustainable technologies’. I know this is addressed in chapters 6 and 7 but did it also come up in your conversations?**

This was an important issue, though not exactly in these terms. One key issue was Indigenous and local knowledge. There is a lot of very place-specific, context-specific knowledge, and strategies like inter-cropping, crop rotations, crop association, and working with neglected and under-utilized varieties, which can be important for land-based adaptation and mitigation. But what are the barriers to putting these solutions into practice? Land tenure turned out to be really important. Lack of respect for traditional and informal agreements about land tenure in some contexts is critical. Indigenous local knowledge is often linked to small-scale farmers, who face challenges around access to land and competition for land.

You see this also in chapter 6, where they look at land competition that arises when some mitigation strategies, like large-scale bioenergy, compete for land and can promote land grabbing, undermining communities' food security. So, in the report, the narrative begins with: which practices do we need? We need all these practices that sequester CO<sub>2</sub> but also promote adaptation, and draw on Indigenous local knowledge. The land tenure problem comes onto the scene as a barrier to implementing those solutions, rather than starting with land tenure as a problem in itself.

**How do you see the role of reports like this and bodies like the IPCC in contributing to these processes and discussions? Where do you see the opportunities to take up these issues further, in future international spaces or processes?**

There is demand from scientists to introduce more social sciences, and social issues. Evidence shows that by focusing only on technology or natural sciences-based evidence, we cannot solve our urgent crises. This increased openness towards social science makes it possible to put these things on the table – Indigenous knowledge, land tenure – because they are part of the social science debate, as well as civil society. This is growing more and more, but at the same time the IPCC is a big structure, a kind of machine, and making small changes takes a lot of time.

There are other international spaces like the IPBES, the platform for biodiversity and ecosystem services, which are more flexible. I work with the Indigenous local knowledge group of scientists in the IPCC, and we are pushing to include Indigenous elders as part of the IPCC process, to really put scientific and Indigenous knowledge on an equal footing, or at least to open a space for it. Spaces like the IPBES have opened some more room and have taken the first steps in that direction. These are also UN spaces, but in the IPCC it is very, very difficult. This is really an issue of epistemic justice. This structure is based on knowledge, so it should be objective, putting all the different knowledges at the same level.



### IN BRIEF

Scientific processes like the UN Panel on Climate Change help to shape the global consensus about what is necessary, and what is possible. They inform the work of policy makers around the world.

However, the process of creating scientific knowledge is never simple, or politically neutral. We spoke with Marta Guadalupe Rivera Ferre, one of the lead authors of the chapter on food security in the Intergovernmental Panel on Climate Change (IPCC) Report on Land and Climate (2019), to understand the process behind this report and some of the weaknesses and possibilities in the international scientific discussions of land, climate, and food.

The IPCC Report on Land and Climate laid out the current state of scientific understanding on the many complex relationships between the way land is used globally, and the impacts on the global climate.



### KEY CONCEPTS

- International spaces like the IPCC try to meet the highest standard of scientific knowledge, integrate the views of scientists from different fields, and respond to political realities.
- Scientists in these processes work together to integrate a vast body of complex knowledge.
- Scientists involved in the process inevitably bring their own background and assumptions, including about what is political, and what is not.
- Food sovereignty, local Indigenous knowledge, and agroecology challenge some of the underlying assumptions that have shaped scientific knowledge in modern history.
- Including other kinds of knowledge, such as local Indigenous knowledge and contributions from the social sciences and civil society, can help to push for a vision of just and sustainable land use.



### KEY WORDS

- Land
- Intergovernmental Panel on Climate Change (IPCC)
- Food sovereignty
- Agroecology
- Climate change
- Indigenous knowledge
- Scientific knowledge
- Land grabbing
- Gender/Gendered access to land