

# “Climate Smart Agriculture” causes confusion

In an era of climate change, agroecology must lead the way



**Jane Harawa** is a smallholder farmer and member of the Coalition of Women Farmers in Malawi. She grows maize, cassava and beans on her portion of communal land, and is improving the fertility of the soil by making manure.

PHOTO: GRAEME WILLIAMS/PANOS/  
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**‘Climate Smart Agriculture’ is gaining increasing attention among governments, NGOs, academics, corporations, researchers and international policy spaces.** With the impacts of climate change being felt on food systems around the world, and the contribution of agriculture to global emissions also gaining attention, agriculture is one of the issues at the heart of climate change concerns. But there is growing confusion and debate over what the term ‘Climate Smart Agriculture’ really means, and whether it really can benefit food systems in the face of climate change.

The concept of ‘Climate Smart Agriculture’ was originally developed by the FAO and the World Bank, claiming that ‘triple wins’ in agriculture could be achieved in mitigation (reducing greenhouse gas emissions), adaptation (supporting crops to grow in changing climate conditions), and increasing crop yields.<sup>1</sup> A number of industrialised countries (the US in particular), along with a number of agribusiness corporations, are now the most enthusiastic promoters of the concept.

But increasingly, civil society and farmer organisations express concerns that the term can be used to green-wash industrial agricultural practices that will harm future food production.<sup>2</sup> Some governments and NGOs also worry that pressure to adopt Climate Smart Agriculture will translate into obligations for developing countries’ food systems to take on an unfair mitigation burden. They point out that their agricultural systems have contributed the least to the problem, but that mitigation obligations could limit their ability to effectively adapt to the climate challenges ahead.

Ultimately, there are no means to ensure that ‘Climate Smart Agriculture’ is actually smart for the climate, for agriculture, or for farmers.

1. World Bank brochure ‘Climate Smart Agriculture: A call to action’ [http://www.worldbank.org/content/dam/Worldbank/document/CSA\\_Brochure\\_web\\_WB.pdf](http://www.worldbank.org/content/dam/Worldbank/document/CSA_Brochure_web_WB.pdf)  
2. Open letter from civil society on the Global Alliance for Climate Smart Agriculture (2014) <http://www.climatesmartagconcerns.info>

## No environmental or social criteria

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There are no meaningful criteria for what can – or cannot – be called ‘Climate Smart.’ Practices or corporations that are destructive to the climate, the environment, and to farmers, are free to use the term. Furthermore, there are no social safeguards to prevent so-called ‘Climate Smart’ activities from carrying out land grabbing, undermining farmers’ livelihoods, pulling farmers into debt, or leading to farmers being sued for activities such as seed saving.

Corporations such as Syngenta, Yara (the world’s largest fertiliser manufacturer), McDonalds and Monsanto, which promote synthetic agrochemicals, intensive factory farming of livestock, and promote industrial scale mono-cropping are all jumping on the ‘Climate Smart’ bandwagon, claiming that they offer solutions to address climate change.

Critics point out that ***the same so-called ‘green revolution’ industries that have been widely criticised for their significant contribution to climate change and their negative environmental and social impacts on farmers and food systems, have simply re-branded themselves as ‘Climate Smart’ and continued as before.*** Synthetic fertilisers, for example, contribute significantly to climate-changing greenhouse gases (see Box 1), while large-scale industrial livestock production has been shown to be a major contributor to climate change.<sup>3</sup> Meanwhile, industrialised agricultural techniques, including the use of Genetically Modified Organisms (GMOs), can increase the vulnerability of farmers to climate change (see Box 2). Not only do large-scale industrial approaches harm the climate, but they put significant pressure on the world’s smallholder farmers, often exacerbating debt while eroding their livelihoods, lands and ecosystems.<sup>4</sup>

### Box 1: How synthetic fertilisers contribute to climate change

- The creation of synthetic nitrogen fertilisers is energy-intensive, burning large amounts of fossil fuels and leading to high CO<sub>2</sub> emissions.
  - When applied to soil, they can release Nitrous Oxide (N<sub>2</sub>O), a highly potent greenhouse gas that has 298 times the atmospheric warming effect of CO<sub>2</sub>.
  - Synthetic nitrogen fertilisers can cause stable organic matter in the soil to convert to CO<sub>2</sub> emissions<sup>5</sup> in the atmosphere.
- As agribusiness giants such as Yara and Syngenta (whose core business model is built on the sales of these products) assert that they offer solutions to climate change, these claims should be treated with a high degree of skepticism.

At the same time, however, some groups that promote small-scale, agroecological farming practices that really do benefit the climate and farmers are also keen to call their own work ‘Climate Smart.’ These groups may prioritise small-scale farmers, women, youth, traditional knowledge or participatory approaches. ***Confusion arises when some politicians, policy makers, corporations, NGOs and farmers welcome, promote or collaborate on ‘Climate Smart Agriculture’ activities – even though these groups may be talking about very different approaches.***

There are therefore significant concerns that destructive agribusinesses are able to use climate rhetoric and the general confusion over the term ‘Climate Smart Agriculture’, to provide ‘green-wash’ cover to their activities, enabling them to expand into new markets such as Africa but undermining local economies, ecosystems, seed diversity and farmers in the process.



**Women members** of the Indatwailurumir co-operative harvest potatoes, Rwanda.  
PHOTO: GREG FUNNELL/ACTIONAID

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3. FAO (2013) Tackling Climate Change through Livestock <http://www.fao.org/docrep/018/i3437e/i3437e.pdf>  
4. Special Rapporteur on the Right to Food, Olivier de Schutter (2014) ‘The Transformative Potential of the Right to Food.’ [http://www.srfood.org/images/stories/pdf/officialreports/20140310\\_finalreport\\_en.pdf](http://www.srfood.org/images/stories/pdf/officialreports/20140310_finalreport_en.pdf)  
5. Mulvaney, R.L., Khan, S.A., and Ellsworth, T.R. (2009) ‘Synthetic nitrogen fertilisers deplete soil nitrogen: a global dilemma for sustainable cereal production’, *Journal of Environmental Quality*, 38, Nov-Dec 2009, p.2295-2314; Khan, S.A., Mulvaney, R.L., Ellsworth, T.R., and Boast, C.W (2007) ‘The myth of nitrogen fertilisation for soil carbon sequestration’, *Journal of Environmental Quality*, 36, Nov-Dec 2007, p.1821-1832

## Box 2: How GMOs claim to be 'Climate Smart'

Monsanto is the world's largest producer of genetically modified seeds. Their best-selling technology is seed (soya, maize and canola) that is engineered to resist the company's powerful Glyphosate herbicide, known as Roundup. 'Roundup-Ready' crops can be sprayed with the herbicide as they grow, so that the weeds die back, but the crop remains standing. Monsanto claim that this practice reduces the need to till the soil for weeds, and thus reduces emissions of CO<sub>2</sub> from the soil. This, they say, makes GM crops a viable solution to climate change.

Skeptics doubt, however, that growing GMOs can sequester more CO<sub>2</sub> than is produced when making the agrochemicals required by the GM crops.<sup>6</sup> It is also doubtful that the sequestered carbon stays in the soils after ploughing at the end of each season, as soil carbon can easily "reverse" back into atmospheric CO<sub>2</sub>, particularly under a warming climate.<sup>7</sup>

Monsanto is also developing seeds to be grown in Africa that are drought tolerant. They claim that these seeds are also 'Climate Smart.' However these crops, which have taken many millions of dollars in investment, have so far failed to impress, when compared to advances made through normal (non-GM) breeding processes, or indigenous drought-tolerant crops.<sup>8</sup>

GM crops are opposed by many farmers, countries and civil society organisations for a number of reasons. Biotechnology companies patent their GM seeds, and often sue farmers who save their seed for replanting. They also frequently sue farmers whose crop has been accidentally pollinated by GM genes.<sup>9</sup> Wherever GM crops and industrialised agriculture are been grown on a large scale, farmers' seed diversity has disappeared from fields.

Farmers need to be able to save their seed and develop crops to adapt to the multiple challenges of climate change, and they require seed diversity and access to a wide range of germplasm in order to do so.<sup>10</sup> GM crops and other industrial practices that erode seed diversity can therefore increase vulnerability of farmers and food systems in the short and long-term, and reduce their adaptive capacity.

## International climate negotiations & climate justice

The major threat of climate change to agriculture and global food security was one of the principle reasons for the creation of the UN Framework Convention on Climate Change (UNFCCC). Developing countries are particularly vulnerable to climate change as they are more exposed to extreme weather events, while the majority of their populations are dependent on agriculture for their livelihoods.<sup>11</sup> Implementation of adaptation strategies that strengthen the resilience of farmers and their food systems are therefore of utmost urgency.

Many developing countries point out, however, that their agricultural production systems, which are usually far less industrialised than those of developed countries, have done the least to contribute to the global problem of climate change. They argue that supporting their agriculture to adapt to changing weather conditions should be the most important priority, and that they should not be obliged to take on more than their 'fair share'<sup>12</sup> of mitigation commitments in agriculture.

Developed countries, which have intensive production and high consumption models of agriculture, should instead look at changing their own practices, allowing developing countries to focus on their urgent adaptation needs. ***So-called 'Climate Smart Agriculture' should not be used as a proxy to force developing countries to take on more than their fair share of mitigation, nor to let developed countries off the hook.***

6. <http://www.sciencedirect.com/science/article/pii/S0304423810002128>

7. *Quantifying global soil carbon losses in response to warming*, T. W. Crowther and al, Nature, Vol 540, 1 December 2016

8. Union of Concerned Scientists (2012) 'High and Dry: Why Genetic Engineering is not Solving Agriculture's Drought Problem in a Thirsty World' [http://www.ucsusa.org/assets/documents/food\\_and\\_agriculture/high-and-dry-report.pdf](http://www.ucsusa.org/assets/documents/food_and_agriculture/high-and-dry-report.pdf)

9. Center for Food Safety (2012) 'Monsanto vs Farmers' 2012 Update <http://www.centerforfoodsafety.org/issues/311/ge-foods/reports/1780/monsanto-vs-farmers-2012-update>

10. The Gaia Foundation (2013) 'Seeds for Life' <http://www.gaiafoundation.org/sites/default/files/seedsforlifereport.pdf>

11. IPCC (2012) Managing the risks of extreme events and disasters to advance climate change adaptation (SREX) [http://ipcc-wg2.gov/SREX/images/uploads/SREX-SPMbrochure\\_FINAL.pdf](http://ipcc-wg2.gov/SREX/images/uploads/SREX-SPMbrochure_FINAL.pdf)

12. Civil Society Equity Review of INDCs (2015) [http://civilsocietyreview.org/wp-content/uploads/2015/11/CSO\\_FullReport.pdf](http://civilsocietyreview.org/wp-content/uploads/2015/11/CSO_FullReport.pdf)

## The need to support agroecology

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Agroecological approaches are the most effective means of adaptation. By improving the health, structure and nutrition of soil through the use of compost, manure, mulching or green manures, they reduce erosion, improve plant health, and increase the ability of soil to absorb and retain water in times of both drought and flood. Ensuring that farmers have access a diversity of locally-adapted seed varieties is also critical to ensuring that they can deal with a range of unpredictable changes in conditions, such as floods, late rains, or rising sea levels. **Agroecological approaches are proven to improve the yields, livelihoods and environment of small-scale farmers in the face of climate change.**<sup>13</sup>

Furthermore, by reducing the use of greenhouse-gas emitting synthetic fertilisers, agroecological approaches also reduce farming's contribution to climate change.<sup>14</sup> And these techniques provide many more non-climate benefits too, such as reducing farmers' costs, empowering women, strengthening social cohesion, and protecting biodiversity and water systems. This approach must therefore be prioritised for both developed and developing countries.

The financing of adaptation and agroecological efforts is a key issue for developing countries. Ensuring food security and adaptation in the face of climate change requires substantial, stable, new and additional public finance.

But as wealthy governments try to evade their responsibility to provide new and additional public finance for developing countries' adaptation, they are likely to promote public-private partnerships instead, under the guise of 'Climate Smart Agriculture' initiatives. Developing country governments must therefore be wary of relying on the profit-driven agribusiness sector to deliver critical public services such as the adaptation of food security.

## Conclusion

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The idea of 'Climate Smart Agriculture' may sound appealing to many organisations and governments. But it should be approached with caution, as it may serve to green-wash agricultural practices that are known to be harmful to the climate and farmers.

There are no climate, environmental or social criteria for what can be called 'Climate Smart Agriculture.' The term can therefore provide a platform for powerful agribusinesses and governments to manipulate global concern about climate change, simply to promote their own interests. The result of this could well be an increase in climate change and vulnerability of farmers and food systems.

We know that genuine, climate-resilient sustainable agriculture approaches that are grounded in agroecological practices are urgently needed to help food systems adapt to and mitigate climate change. But we must ask what additional real benefits the concept of 'Climate Smart Agriculture' could bring; the answer is still far from clear.

Growing interest in Climate Smart Agriculture is therefore creating confusion in the food movement. Farmers, civil society organisations, research institutes and governments must approach it with caution, and continue to ask key questions. Farmers and food security would be better served through the implementation of specific, meaningful and tested strategies such as agroecology.

► *This document is a shortened and updated extract from ActionAid's 2014 briefing "Clever Name, Losing Game: how 'Climate Smart Agriculture' is causing confusion in the food movement", which can be found here:*

<http://www.actionaid.org/publications/clever-name-losing-game-how-climate-smart-agriculture-sowing-confusion-food-movement>

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13. ActionAid & IFSN (2012) Fed Up: Now's the time to invest in agroecology [http://www.actionaid.org/sites/files/actionaid/fed\\_up\\_-\\_nows\\_the\\_time\\_to\\_invest\\_in\\_agroecology.pdf](http://www.actionaid.org/sites/files/actionaid/fed_up_-_nows_the_time_to_invest_in_agroecology.pdf)

14. ActionAid (2012) Climate Resilient Sustainable Agriculture: a real alternative to false solutions [http://www.actionaid.org/sites/files/actionaid/crsa\\_back-grounder\\_june\\_2012\\_design.pdf](http://www.actionaid.org/sites/files/actionaid/crsa_back-grounder_june_2012_design.pdf)