



During our recent visit to Tanzania in November 2018, we were alerted to a Twitter thread published by the British pro-GMO activist Mark Lynas lobbying for the approval and release of genetically modified organisms (GMOs) in Tanzania. The thread formed part of a larger media campaign. Now evidence has emerged that Mr Lynas mis-used images of African farmers and farm crops to mislead the public – and the farmers are demanding that the images be removed from the internet.

Mr Lynas is an environmental writer with a degree in history and politics (not science), who made his name writing about climate change¹ and later in his life about GMOs when he was appointed a Visiting Fellow at Cornell University's Office of International Programs at the College of Agriculture and Life Sciences. Mr Lynas describes his role at Cornell as "advising on Cornell's vital work on public sector biotechnology in developing countries to support environmental and food security improvements via the Cornell Alliance for Science".²

On 15 October 2018, Mr Lynas published a Twitter thread where he put forward his views on how "anti-GMO activism and politics" block the advancement of agricultural biotechnology, which, according to him, would be important in preventing local staple crops from being devastated by drought, disease and pests.³

Mr Lynas is entitled to hold his own views, whether they are supported by reality or not. However, what is unacceptable is that in this thread, he uses communication tactics that are manipulative, misleading, and unethical. For reasons explained below, we feel compelled to reveal these tactics.

Misleading use of images

In his Twitter thread from October 2018, Mr Lynas published a series of photographs of smallholder farmers in Tanzania that he presumably took during his recent visit. According to Mr Lynas, these farmers are suffering because they lack access to effective crop technologies, i.e. GMOs and hybrid seeds, that would allow them to overcome their supposedly deprived situation.

In the posted series of images is one depicting a pair of hands holding three stunted maize cobs, with the following caption: "We really need the President [of Tanzania] to allow farmers to grow improved crops with drought tolerance and pest resistance. This is what it looks like when they grow the old varieties with no resilience." 3

This image and caption are grossly misleading, since they imply that this is the general appearance and outcome of the farmer's traditional open-pollinated maize varieties. They also imply that these crops would lack the resilience of other "improved" ones – presumably Mr Lynas' favoured GM hybrid varieties.

^{1.} https://www.theguardian.com/books/booksblog/2008/jun/18/sixdegreesbutnophd

^{2.} Source: http://www.marklynas.org/about/ (visited 13/11/2018)

^{3.} Twitter thread available at https://twitter.com/mark lynas/status/1051758791535017985 (visited 13/11/2018)

But more seriously, this image is followed immediately by another, this time depicting a group of four children with sad faces and torn, dirty clothes, with a caption that reads as follows: "Is that [the three maize cobs from the image above] enough to feed this hungry family [the 4 children]? All the European-funded NGOs say "yes, these farmers should stick with farmer-saved seeds and traditional varieties." So these children must stay hungry thanks to their ideology." 5

Leaving aside the fact that the content of this statement is ridiculous and disingenuous at every level, the connection between the first and the second picture implied by Mr Lynas is unethical. He mis-uses the image of the distressed and vulnerable children to fabricate a connection between the three stunted maize cobs and the children in an attack on anybody holding views dissenting from his, by trying to discredit them as "ideology", while he himself uses all the tools in the ideologue's toolbox for his own ends. Because of these questionable ethics, we refrain from replicating these images here and simply provide the link to Mr Lynas' Twitter thread.

A few tweets below the aforementioned two images, a third image is posted of a woman with this caption: "I am sick of having to explain to farmers here [in Tanzania] why they must continue to suffer this global injustice. It is past time for progressives everywhere to speak up. Science is for everyone, not just the world's rich." 6

This image actually prompted us to pay attention to this thread and do more fact-checking, as we happen to known the depicted woman, Mrs R., quite well for many years. Mrs R. has distinguished herself among her peers as an innovative and progressive farmer who is constantly aiming to improve her production practices. We have visited her farm several times and know that the good quality and quantity of food production that she maintains using adapted local varieties, thanks to her progressive and careful practices, is the opposite of what Mr Lynas' Twitter thread misleads the reader to believe. During our recent visit to Tanzania, we showed these images and Mr Lynas' Twitter thread and translated the context in which her image was used to Mrs R. (see Figure 1 below).



Figure 1: Discussing with Mrs R. (centre) Mr Lynas' Twitter thread containing her image.

^{5.} Source: https://twitter.com/mark lynas/status/1051759588918349824 (visited 13/11/2018)

^{6.} Source: https://twitter.com/mark_lynas/status/1051774525212422144 (visited 13/11/2018)

Farmers demand that their images are deleted

Mrs R. was shocked and greatly dismayed to see her image used on social media and the internet without her knowledge nor consent. This is what she told us to convey:

- The image of Mrs R. that Mr Lynas posted on Twitter in October 2018 stems in reality from an interview (note the lapel microphone on her shirt) conducted in early 2017, in which she was asked about cassava not maize (which is implied by the way in which the images, including hers, follow one another in the Twitter thread). Hence, the cassava plants in the background of the image.
- Mrs R. was very distressed to find her image published on social media. She was never informed nor asked for consent and she disapproves of the context in which Mr Lynas portrayed her and her way of farming. Mrs R. is a champion farmer of agroecological farming practices and is quite successful in doing so.
- Mrs R. describes her life as good and her farm as profitable. The profits from her farm allowed
 her to put her children through school. Now, as adults, they lead an independent life (she
 has no child to care for in her household anymore). She is shocked that she was implicated
 in a context that, by association, could imply that she is needy, starving, and leading a life of
 deprivation.
- Mrs R. demands that her image is deleted from all social media and internet platforms immediately.

Furthermore, we traced the source of the image of the three stunted maize cobs online through a reverse image search. We found that this image keeps being recycled by Mr Lynas' institution and has been used by it on multiple occasions. It appears in a blog post⁷ dated several months earlier than Mr Lynas' Twitter thread. In that blog post, the image is accompanied by an incorrect (and therefore puzzling) caption, reading: "Afzal Hossain, a farmer in the Rangpur district in Bangladesh, proudly displays his harvest of Bt brinjal, genetically engineered to reduce pesticide use."

The image is credited to Mr Lynas' organization, the Alliance for Science, and the blog post was authored by one of his colleagues. This colleague used the same image also in a series of Power Point slides presented at a conference dated 28 September 2017.8 In this presentation, we found that the stunted maize cobs were held by a woman, named as "Selma Njukwage, Chambezi". Furthermore, footage of the same woman holding the stunted cobs is featured in a video posted on Youtube9 and on the Alliance of Science website.10 In that video, which was posted in early March 2017, she is named "Selma Selimani" (starting at 1:40 minutes). The entire context of the video is strictly about the WEMA (Water Efficient Maize for Africa) project and promotes a GM maize claimed to be drought tolerant (MON 87460).11 The image and footage showing Mrs Salima (as she is called in Chambezi) was taken in early 2017, presumably during the same trip when Mrs R. was interviewed – over a year and a half prior to the recent visit of Mr Lynas to Tanzania and his resulting Twitter thread in October 2018.

^{7.} Blog post available at: https://medium.com/marchforscience-blog/scientific-innovation-can-green-agriculture-f455a4939892 (visited 13/11/2018)

^{8.} Presentation available at: http://mosti.go.ug/sites/default/files/publication/2018/08/Intro%20to%20Alliance%20 presentation%20OFAB%20meeting.pdf (visited 13/11/2018)

^{9.} Source: https://www.youtube.com/watch?v=LIPCIp-Hbho/

^{10.} Source: https://allianceforscience.cornell.edu/blog/2017/03/gmo-maize-for-tanzanias-drought-stricken-farmers/

^{11.} Source: https://www.twn.my/twnf/2015/4244.htm; https://www.acbio.org.za/sites/default/files/2017/08/WEMA-Discussion-Doc-web.pdf

Tanzanian colleagues contacted Mrs Salima to make her aware of the varied uses of her image and footage along with her name ("Selma Njukwage" and "Selma Selimani") and location. They informed her about the context in which her image and footage is portrayed in social media and conferences. While we did not speak with her personally, we were informed that she also was surprised and was not informed about, nor had given her consent to, the use and context in which she was featured. Mrs Salima also demands that her image, footage (including name and location) immediately be removed from all social media, internet platforms, presentations, and any other platforms.

Furthermore, the image of the stunted maize cobs was taken during a period of drought on Mrs Salima's farm (alias "Selma Njukwage" and "Selma Selimani"). Under such drought conditions (e.g. 2012 and 2013 in the USA¹² and 2018 in Germany¹³), hybrid maize has just as little or even less resilience than local varieties and looks similarly dreadful (see images below in Figure 2). Yet, no one in their right mind would suggest that industrial commodity farmers would routinely harvest stunted maize because they are using hybrid varieties (most of them actually do require substantial chemical inputs and water to perform acceptably and, thus, are not resilient).

Figure 2. Illustrative examples of images of hybrid maize fields destroyed by drought in the USA (2012/13) and Germany (2018).



Clearly, such maize is also not what smallholder farmers typically grow and feed their families. Consequently, Mr Lynas' Twitter feed triggered responses calling him out on his misleading fabrication (see Figure 3 below).

^{12.} Source: https://www.flickr.com/photos/usdagov/12308593123/in/photostream/

^{13.} Source: https://www.agrarheute.com/pflanze/mais/folgen-duerre-maisernte-beginnt-ab-ende-juli-546834

Figure 3. Images of healthy, locally adapted African open-pollinated maize varieties in response to Mr Lynas' misleading portrayal of stunted maize on his October 2018 Twitter thread.¹⁴



you can choose to shoot a picture like that to self Monsanto's unwanted GM maize or you can show farmers' skill & legacy of breeding & maintaining diversity. Smallholders domesticated & bred these crops in the first place. Where do you think WEMA even get their germplasm from?



Stop spreading falsehood. Every system has good and poor seed and your improved seed without all its accompanying ingredients will look like your picture.

This is not to say that yield levels and farming practices of smallholder farmers in Africa must not improve – they must. But the WEMA GM hybrids supposedly endowed with more resilience to drought stemming from the GM maize event MON 87460 that Mr Lynas so passionately lobbies for have just been rejected by the South African government's Executive Council¹⁵ as unconvincing, in particular regarding its claimed tolerance to drought:

"The drought data specifically the kernel count per row and the kernel count per ear data showed that there were no statistically significant differences between MON 87460 x MON 89034 x NK603 and the conventional maize. Moreover, the yield benefits.... were inconsistent and in some trials the GM maize event had lower yields than the conventional maize..... Conclusion: The data provided in the application is insufficient to demonstrate the efficacy of the drought-tolerant and insect resistant MON 87460 x MON 89034 x NK603 maize event. Decision: The Executive Council does not approve the general release of maize MON 87460 x MON 89034 x NK603." (our emphasis)

Non-GM drought-tolerant maize already available

In contrast, there are many African maize varieties with documented, significant tolerance to drought already in farmer's hands. The DTMA (Drought-Tolerant Maize for Africa) project, which preceded the WEMA project, has produced dozens of non-GM drought-tolerant maize varieties (OPVs and hybrids) through conventional breeding, which farmers now grow in many African countries.¹⁶

^{14.} Source: https://twitter.com/mark_lynas/status/1051759144548687872

Source: https://www.acbio.org.za/sites/default/files/documents/EXECUTIVE_COUNCIL-DECISION_DOCUMENT-MONSANTO GENERAL RELEASE MON87460XMO...pdf

^{16.} Source: http://dtma.cimmyt.org/index.php/seed/companies-stocking-dt-seeds; http://dtma.cimmyt.org/

By using African smallholder farmers in fabricated contexts for his activism, without informing them nor obtaining their consent, Mr Lynas is harming and distorting the discussion about farming systems and GMOs in Tanzania. His orchestrated media push in October 2018, wherein the outcomes of the ongoing WEMA field trial with GM maize varieties containing the MON 87460 trait (the one found to be ineffective in South African field trials) have been prematurely showcased¹⁷ without due internal nor external review, may have backfired.¹⁸ On 22 November 2018, the Tanzanian government ordered "the Tanzania Agriculture Research Institute to stop all Genetic Modified Organism (GMO) confined trials and destroy all test remnants".¹⁹ So, for now, Mr. Lynas' media push appears to have at least contributed to triggering the termination of GMO field testing in Tanzania.²⁰

Mr Lynas' manipulative communication tactics and attempts to discredit anybody who holds different views than his on GMOs and hybrid seeds have crossed an ethical red line and must cease. We could not trace the image of the sad-looking children with the torn clothes – none of our Tanzanian colleagues and farmers knew them. But given what we discovered about the persons featured in the other images, it would not surprise us if the children's parents did not know about the use of their image. What we do know is that this incident has left Mrs R., her community of smallholder farmers, and Mrs Salima noticeably shaken.

Up until today, these farmer communities have received visitors from outside – in particular those from outside Africa – with open arms, as they did with Mr. Lynas. They do not consider themselves victims of deprivation, although they do know that they need training, education, and support to improve their farming practices and livelihoods. They have shared their stories about farming and their livelihoods in good faith and in the belief that they will be fairly portrayed. This good faith has now come to an end with this group of farmers. Mr Lynas' disregard for ethics and good journalistic practice, therefore, has consequences not only for his own reputation and credibility, but also for everybody else from outside Tanzania, specifically outside of Africa, who may come in the future to talk with them about their lives and farms, and may subsequently be met with a regrettable – yet understandable – reluctance.

In conclusion, we hope and expect that at the very least, the demands of Mrs R. and Mrs Salima to remove their images and footage will be honoured without delay. The farmers have asked us to continue to monitor this situation and we promised to do so. If Mr Lynas is truly in favour of a significant discussion about GM crops in Tanzania, he first needs to engage in an honest and respectful conversation with the farmers who will be directly affected by decisions to adopt or reject them.

^{17.} Source: https://www.ippmedia.com/en/news/new-push-pipeline-acceptance-gmo-seeds; http://www.mviwata.org/wp-content/uploads/2018/11/PDF-press-release.pdf

^{18.} Source: https://acbio.org.za/en/tanzania-orders-destruction-monsantogates-gm-trials-due-illegal-use-pro-gm-propaganda

^{19.} Source: https://www.thecitizen.co.tz/News/-Shock-as-government-bans-GMO-trials/1840340-4865040-jp3ji8z/index. html; https://www.foodbusinessafrica.com/2018/11/27/tanzania-bans-genetically-modified-trials-and-destroys-researchevidence/

^{20.} https://allafrica.com/stories/201811270506.html