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Concerning: Request for corrections and qualifications regarding misleading statements in a Nipasha article about my presentation at a 12th May workshop by MVIWATA for Tanzanian members of parliament about genetically modified organisms (GMOs)

To whom it may concern,

The Tanzanian newspaper Nipashe published an article about Genetically Modified Organisms (GMO) in its edition of May 25th, 2018, with the following title: “*Makulima, wanasiasa, wanataaluma wavutana bila ya kufikia muafaka*”. This article uses as a source, among others, the presentation I gave during a workshop organized by Mtandao wa Vikundi vya Wakulima Tanzania (MVIWATA) in Morogoro on 12th May, 2018. Unfortunately, many statements allegedly from me are inaccurate and result in misleading information about GMOs and the content of my presentation. I would, therefore, like to request the following corrections and qualifications be published and appropriately used within the debates around GMO.

- Article states: “Mwanataaluma na Mtafiti kutoka Chuo Cha Utafiti na biologia cha Zurich Uswisi, Dk. Angelica Hilbeck, anadhihirisha mvutano huo pia ni mkubwa katika nchi nyingi duniani, kuhusu kuruhusu matumizi ya GMO shambani” (Eng: “*The expert and researcher from the university of research and biology, Dr. Angelika Hilbeck, explains that this tension about authorizing the utilization of GMO in the field is also big in many countries in the world*”).
→ **Correction:** Approval of GMOs is controversial in Europe, with the clear majority of European citizens as well as EU member states being persistently against their authorization.
- Article states: “Anasema barani Ulaya ni nchi mibili pekee zilizobaki zinatumia GMO kwa sasa, ambazo ni Hispania na Ureno na zingine zikilima kidogo au kununua kwa ajili ya chakula cha mifugo” (Eng: “*She says that in Europe there are only two countries which use GMO now, which Spain and Portugal, and others which use grow a little bit or buy to feed livestock*”).
→ **Correction:** As a consequence of the rejection of European citizens and EU member states, only 1 GM crop (MON810 Bt maize) is approved for cultivation in the EU but only grown in 2 EU member states: Spain and Portugal. However, EU countries import GM crops for feed mainly, very little for food. Yet, in terms of yield, European farmers have comparable or often higher yields without GM crops than US farmers with GM crops.
- Article states: “Pamoja na hilo, Dk. Hilbeck anaangalia upande wa pili [...] matumizi ya GMO yana manufaa ya kuzuia wadudu kuharibu mazao na hivyo kumfanya mkulima azalishe kwa tija na kuza mazao kwa wanunuzi wakubwa duniani” (Eng: “*With this, Dr. Hilbeck is also looking at the*

utilization of GMO which have the advantage of preventing pest from damaging crops and thus to make the farmer grow with productivity and to sell crops to big buyers in the world”).

→ **Correction:** GM crops are designed for large scale industrial farms delivering to global export markets. Two types of GM crops make up 99% of all GM crops in the world: herbicide-resistant GM crops that can be sprayed with herbicides without dying from these plant-killing pesticides are by far the most widely grown GM crops, followed by GM crops that produce an insecticide (Bt toxin) to kill pests. Both types of GM crops have generated huge problems for farmers because the main pests and weeds have become resistant. There is a big backlash of weed problems in the countries that grow herbicide-resistant GM crops. And in many countries farmers also have problems with pests that became resistant against the insecticide engineered into the GM crop. This includes also South Africa where the African stemborers have become resistant to the Bt toxin Cry1Ab (which they have also engineered into WEMA maize). Consequently, these farmers now must use more and more costly toxic pesticides in addition to expensive GM crops. Hence, the initial advantages of the GM crops were short-lived and have largely gone by. These two trait types have been engineered into 4 major GM crops: soybean, maize, cotton, oilseed rape. All other traits and GM crops one reads or hears about make up the remaining 1% globally and are at best niche products - this includes even the claimed drought tolerant maize being 'donated' to Africa. Since 25 years and counting nothing has changed. The technology has by far not delivered what it has promised!

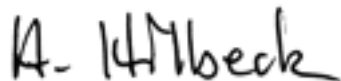
- Article states: “Anatoa mfano wa Afrika ya Kusini inauza matunda yakiwemo tufaha na papai yenye vinasaba na kupata faida kubwa” (Eng: “She takes the example of South Africa which sells apples and papaya with genes and gets good profit”).
→ **Correction:** I never stated that South Africa sells GM apples and GM papaya. South Africa grows the crops listed above. GM papaya and GM apples are grown in the US.
- Article states: “Dk. Hilbeck anisihhi serikali kutenga kiasi kikubwa cha fedha kwa ajili ya Utafiti wa baioteknolojia ya mbegu za GMO” (Eng: “Dr. Hilbeck appeals to the government to set aside a large amount of money to do research on biotechnology and GMO seeds”).
→ **Correction:** I agreed with MP’s statements that the government set aside money to invest in conventional breeding of Tanzanian crop varieties that work for the Tanzanian small-scale farmer! Because conventional breeding does deliver – in contrast, GMOs have yielded very little useful, if anything, for the small-scale farmer! If money should be set aside for GM research, it is to investigate their risks and socio-ecological consequences to small scale farmers, not to develop new GM varieties which is already generously funded by others. Safety and rigorous efficacy research under local conditions and, most importantly, independent from the developers of the GMOs, is paramount before they should be released to farmers.
- Article states: “Anafanua dhamira ya kuanzisha GMO ni kudhibiti wadudu waharibifu wa mazao na magonjwa na mpaka sasa zimeshapatikana aina mbili za mbegu inayohimili wadudu na inayohimili magonjwa” (Eng: “She clarifies that the purpose of starting GMO is to prevent pest that damage crops and disease, and up until now there are already two types of seeds which support pest and disease”).
→ **Correction:** Not ‘already’ but ‘only’ and this is a pretty sad state of affairs because we have invested astronomical sums of tax money and were promised countless traits and GM crops that can do miracles and be designed to the needs of the farmers – hardly any of that came true nor will it ever come true! GM crops are a business model to deliver pesticides - after all these are pesticide-selling companies that develop GM crops.
- Article states: “Dk. Hilbeck anataja mazao yaliyowekewa vinasaba mpaka sasa ni mahindi, bilinganya, papai na tufa, akiyasifu mazao yaliyowekewa vinasaba hivyo hayaozi upesi na yanaweza kuuzwa muda mrefu, tofauti na mazao ya mbegu za kawaida”. (Eng: “Dr. Hilbeck says that the crops which received a gene up until now are maize, eggplants, papaya and apples, and she praises these crops with genes as these do not rot and can be sold for a long time, opposite to crops from normal seeds”).
→ **Correction:** For the proper list of main GM crops see my comments above. Two trait types in four commodity crops grown to 90% in only 6 countries in North and South America in more

than a quarter of a century. If anything, I deplored, for one, the failure to deliver useful GM crops despite the huge promises and massive public investments made since decades and, secondly, the lack of critically reviewing the scientific basis that genetic engineering builds on conceptually and the limitations of the techniques used.

- Article states: “Pia, anaishauri serikali kutumia tecknolojia hiyo kwa wazalishaji wakubwa katika mazao kama pamba, huku wakulima wadogo wakiendela na mifumo iliyosoeleka nchini” (*Eng: “Also, she advises the government to use this technology with the big producers in crops such as cotton, while small farmers continue with a system which people are used to in the country).*)
 - ➔ **Correction:** On the contrary, Tanzania must come to its own conclusion whether it wants to have a few large-scale farmers or wants to empower and improve its small-scale farming community. Both is hardly possible because each system needs very different types of infrastructure, institutional support, investments and training that is expensive and either supports large-scale farmers or small-scale farmers but not both at equal levels! If the people decide to go for industrial pesticide-intensive farming, Tanzania better also braces for the environmental destruction and human health costs that come with it. In European countries where the damage and costs of these forms of agriculture cannot be overlooked anymore, there are growing movements these days that increase the pressures on their governments to get out of this old, out-dated, destructive model of agriculture. Tanzania must reflect deeply if it wants to set out on a trajectory that others are already abandoning. There are highly productive and modern forms of agriculture that empower small-scale farmers to deliver lots of nutritious and diverse foods and feed without any of these dangers. This is a choice to be made by the people of Tanzania.

I trust these corrections will help to disseminate accurate information about the presentation I gave, and more generally about Genetically Modified Organisms (GMO), and, thus, contribute to a fruitful debate based on real evidence and facts.

Yours sincerely,



(Dr. Angelika Hilbeck)