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LOCAL/GLOBAL ENCOUNTERS

Exterminator Genes: The Right to Say No to Ethics Dumping

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Abstract
The scientific-industrial complex is promoting a new wave of genetically modified organisms, in particular gene drive organisms, using the same hype with which they tried to persuade society that GMOs would be a magic bullet to solve world hunger. The Gates Foundation claims that GDOs could help wipe out diseases such as malaria. Powerful conservation lobby groups claim GDOs will protect engendered species. Not only are the benefits from GDOs based, like their predecessors, on flawed ecological thinking, but they are backed by the same agri-business interests that have devastated agroecological farming systems. The rights of communities to say 'no' to new genetic technologies is being eroded, despite United Nations agreements, such as the Convention on Biological Diversity, which call for the free, prior and informed consent of affected communities to be respected. By exporting their field trials to countries with weak regulatory regimes and lowering of the standards of consent the Gates Foundation's Target Malaria project has already been guilty of ethics dumping. These developments demonstrate the urgent need to democratize the development of new technologies.

Keywords Genetically modified organisms · Gene drive organisms · Ethics dumping · Convention on biological diversity

Introduction

Grassroots-led social movements based in the Global South are refusing to be force-fed a potentially dangerous new technology known as gene drive organisms (GDOs). People from our organizations helped shape 2 weeks of negotiations on the United Nations' Convention on Biological Diversity (CBD) in Egypt during November 2018. An intervention by indigenous peoples and other members of farming communities was vital in preventing GDOs—a new genetic engineering technique—being tested on their territories without their consent, at least for now. GDOs contain what have been called 'exterminator drives', designed to hijack normal inheritance laws in sexual reproduction, forcing a novel gene through whole populations of organisms—potentially wiping out entire species.[1]

The active participation of representatives of African social movements was pivotal at the CBD's fourteenth Conference of the Parties. They demanded their right, already enshrined in the UN Expert Mechanism on the Rights of Indigenous Peoples, to 'free, prior and informed consent' ahead of potential release of such technologies.[2] Their call, supported by the ETC Group, was reflected in the CBD decision calling on governments to conduct strict risk assessments and seek indigenous and local peoples' informed consent on genetic-forcing technologies.[3]

As one of us (Bassey-Orovwuje) stated during the negotiations on behalf of the many African communities under threat, 'In Africa we are all potentially affected. We do not want to be lab rats for this exterminator technology'. 'Farmers have already marched in the streets of Burkina Faso to protest genetically engineered mosquitoes and we will march again if they ignore this UN decision,' she continued. 'We are giving notice now that potentially affected West African

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[1] http://www.etcgroup.org/content/forcing-farm. In French here—http://www.etcgroup.org/fr/content/forcer-lagriculture. In Spanish here—http://www.etcgroup.org/es/content/exterminadores-en-el-campo.

[2] http://www.etcgroup.org/content/do-not-betray-africa-synbio-and-gene-drives.

[3] http://www.etcgroup.org/content/united-nations-hits-brakes-gene-drives.

Box 1 From GMOs to GDOs: a bad idea gone worse

A gene drive organism (GDO) made by gene editing is a type of genetic modification, also called 'genetic engineering.' They are not the old-school GMOs like corn, soy and cassava brought to you by biotechnology companies that have spent the past three decades genetically manipulating plants, animals, microorganisms and insects. Those are bad enough, in part because they run the risk of accidentally spreading their modifications to unintended crops, plants and populations. GDOs are genetic modifications deliberately designed to spread, changing not just one population but an entire species. Gene drives are population-scale genetic engineering (Dressel 2019)

The actual techniques used to make GDOs (the best known of which being called CRISPR), belong to a new category of genetic engineering techniques being pushed by the biotechnology industry under the broad term 'synthetic biology.' 'Classic' genetic engineering would cut out segments of DNA from one organism and paste it into the DNA of another organism to give it a gene for a particular trait. These 'New GM' (or GMO 2.0) approaches attempt to change the biology of living organisms by altering its DNA—making small cuts and inserting artificial DNA that has often been designed by computers. Synthetic biologists try to design and construct new biological parts, devices and systems that do not currently exist in the natural world—that is, making laboratory-synthesized artificial DNA.

communities have not given their consent or approval to this risky technology.'

Technical-fix Déjà Vu

It is now 20 years since ETC Group uncovered a US patent on what became known as 'terminator technology'—seeds genetically engineered to stop farmers breeding from them.[4] Civil society and farmer movements protested that such 'suicide seeds' would threaten seed-saving practices that are as old as agriculture.[5]

The story of Terminator tech became iconic in the global battle over genetically modified organisms (GMOs). Only interested in protecting their profits, its developers failed to assess the potential social, economic and environmental impact of engineering sterility. Following an uproar from across society, including United Nations (UN) bodies, Terminator was placed under a global moratorium under the UN's Convention on Biological Diversity (CBD) in 2000.

Terminator was part of the first wave of crops proposed to introduce genetic engineering technologies on the farm. These first-generation GM crops involved altering common crops to be resistant to pests (such as cotton bollworm) or weed-killers (such as Bayer–Monsanto's *Roundup*). GM crops ran into problems when many consumers didn't buy foods grown using GM and farmers found the promised benefits only materialized, if at all, in the short-term.

Realizing that their attempts at achieving public acceptance had got off to a bad start, biotech firms such as Syngenta (now part of ChemChina) and their academic allies, proposed a second generation of GM crops that would have clearly defined benefits. The poster-child of these products was to be golden rice, a variety of rice (*Oryza sativa*) produced through genetic engineering to biosynthesize beta carotene, a precursor of vitamin A, in the edible parts of rice. Both its inventors, Ingo Potrykus of the Swiss Federal Institute of Technology and Peter Beyer of the University of Freiburg, Germany, along with Syngenta, who backed the research, stated their goal as being to help children who suffer from vitamin A deficiency (VAD). In 2005, 190 million children in 122 countries, were estimated to be affected by VAD. VAD is responsible for 1–2 million deaths, 500,000 cases of irreversible blindness and millions of cases of xerophthalmia annually.

However, like many technological 'magic bullets', golden rice was not the simple solution to VAD that its promoters claimed. In an Indian citizens' jury in 2001, the majority of members of which were women, Dalit and Indigenous (Adivasi) farmers suggested that it was the limited availability of diverse and nutritionally adequate food causing VAD (Kuruganti et al. 2008). The shift to growing monocultures of rice that farmers were being coerced into making would make this problem worse, whether the rice was golden or not. In 2008, WHO malnutrition expert Francesco Branca cited the lack of real-world studies and uncertainty about how many people will use golden rice, concluding 'giving out supplements, fortifying existing foods with vitamin A, and teaching people to grow carrots or certain leafy vegetables are, for now, more promising ways to fight the problem.' (Enserink 2008).

Now biotechnologists have spawned a technology that could have even more far-reaching consequences than Terminator The technology of GDOs (see Box 1) are being developed in order to deliver a new generation of genetically engineered (now termed 'gene edited' technologies. Where Terminator allowed companies to render their own proprietary seeds sterile, gene drives go further—actively and invasively spreading sterility and other engineered genes into the wild. The resulting gene drive organisms, some of which now appear to be operational in laboratory settings, potentially pose a far more dangerous threat to people's

[4] http://www.etcgroup.org/content/terminator-five-years-later.

[5] http://www.etcgroup.org/issues/terminator-new-enclosures (in English) and http://redtecla.org/ (in Spanish) and http://www.etcgroup.org/fr/content/des-technologies-terminator-aux-technologies-exterminator (in French).

Box 2 Risks from recent release of GMOs and GDOs in Africa

The GM 'male-sterile' mosquitoes in Burkina Faso is not expected to deliver any benefits for malaria control. This is not an early stage trial for later releases of the GDO mosquitoes, but releases of an entirely different GM mosquito

The release of the GM mosquito poses risks, including the incidental release of some biting female GM mosquitoes during the experiments. While Target Malaria claims that the number will be small, nevertheless, since GM female mosquitoes can bite humans and spread disease, the release of biting females still poses some risk to local people

Furthermore, there is evidence that Target Malaria is paying compensation of 400 CFA francs (approximately 70 US cents) per hour to local villagers to allow for the collection of biting female mosquitoes from their own bodies

rights, food security and the environment than Terminator ever did.

Exterminator Drives

Since their first emergence in 2014, gene drives (also known as gene-forcing technologies) have become a public relations poster-child for the biotech industry. After the PR disaster that followed the introduction of GM crops, it has used the technology to re-launch itself as socially useful. It has become an increasingly important investment vehicle, keeping funds flowing as income from chemicals and GM crops risk a long-term decline, as GM-free markets boom and consumer lawsuits proliferate.[6]

While scientists promoting GM crops used golden rice to claim the moral high ground, those promoting gene drives claim they could help end an even bigger global killer—malaria. Through a project called Target Malaria, led by Imperial College in London, UK, $100 million USD is being directed to GDO research. The programme of GM mosquito release begun on 1 July 2019 is due to include GM 'male-sterile' mosquitoes (see Box 2).

The release of GM mosquitoes in Burkina Faso in 2019 could be followed by the later release Exterminator drive mosquitos in West African villages, with the promise that the technology will soon eliminate the world's most deadly infectious disease—malaria.

Calls for the use of GDOs to tackle malaria often ignore the kind of well-proven techniques that have eradicated the disease in scores of countries, most recently in Paraguay, Argentina, Sri Lanka and Algeria. Target Malaria's GDOs are being promoted as a vital 'tool in the toolbox' against the disease, whereas in fact they would be a high-stakes gamble with the ecology of food systems and biodiversity across the planet.

The potential for the creation of invasive GDOs capable of spreading engineered genes in the wild takes one of the worst scenarios envisaged for genetically modified organisms (GMOs) and turns it into a deliberate industrial strategy. While first- generation GMOs mostly spread engineered genes by accident, GDOs will be designed to do their own engineering among wild populations out in the real world. Their spread to those populations would be deliberate. Scientists behind gene drives have only just begun to ask what would happen if the genes aren't quite as well behaved as their Mendelian models intended. What if genes for female sterility, for instance, which have been shown to eliminate mosquito populations in the lab, transferred to species that pollinate our crops or are a food source for birds, reptiles, even humans? What if genes that were beneficial became disabled, or if genetic disruption increased the prevalence or altered patterns of diseases?

In Burkina Faso, thousands have marched in the streets against Target Malaria's mosquito trials. African and international movements are now mobilizing to expose and resist a false solution that is making Africa a neo-colonial testing ground for flawed technologies.

Just as agri-chemical corporations used Golden Rice to take the high moral ground, s while they tightened their grip on farms across the world, eradicating malaria is a cover-story for the same companies, which come in ever-more powerful mega-merged formations, to colonize new agricultural realms (ETC Group 2018).

Farm Gates

Multi-million-dollar grants for gene drive development from the Bill and Melinda Gates Foundation, the Foundation of National Institute of Health, the Open Philanthropy Institute, The Welcome Trust and the US Defense Advanced Research Projects Agency have included generous allowances for public message testing, public engagement exercises, lobbying and communications activities. For example, a key industrial agricultural lobbying firm, Emerging Ag Inc., received $1.6 million US dollars from the Bill and Melinda Gates foundation to lead lobbying and communication activities to promote gene drives and influence UN meetings including the

[6] https://uk.reuters.com/article/us-bayer-glyphosate-lawsuits/bayers-monsanto-faces-8000-lawsuits-on-glyphosate-idUKKCN1L81J0.

creation of a 'Gene Drive Outreach Network'.[7] Curiously, despite the name and role of its host (Emerging Ag also administers the 'World Farmers Organisation'- a well-known front for agribusiness giants), the Outreach Network's website and factsheets entirely fail to mention any proposed agricultural uses of gene drives focusing only on 'global health' and 'conservation' uses.[8] The public are promised that rare birds' eggs can be protected by reducing rodent populations. Elsewhere, similar techniques are touted as meaning that soon woolly mammoths, driven to extinction by early humans, could potentially be brought back to life.[9]

This omission of agricultural uses in the promotion of GDOs is not accidental. It fits exactly with the priorities expressed by gene drive pioneers such as Kevin Esvelt of MIT. Esvelt holds one of two key foundational patents on gene drives. More than a quarter of his 38-page patent is taken up describing agricultural applications for the technology. Yet, in conversation with one of the authors of this article (Thomas) in 2016 Esvelt commented that agricultural applications should wait on public health and conservation applications simply because the benefits aren't as clear to ordinary citizens. He described the controversies over GMOs as a mess and said such a scenario should be avoided. He also commented that it would be a bad idea to talk publicly about the agricultural uses listed in his patent such as reversing herbicide resistance in weeds (see below), because it would only benefit Monsanto (now Bayer–Monsanto).

Esvelt has stated that he is not personally opposed to private companies commercializing GDOs for agricultural purposes. Indeed, he expects there will eventually be for-profit companies using this for agriculture. Also, he claimed that he had spoken with Monsanto, who had agreed to steer clear of gene drive development until it was first established in applications related to health and conservation. A subsequent license on CRISPR technology granted to Bayer–Monsanto by the Broad Institute which is associated with Esvelt's current and previous employers, Harvard and MIT, explicitly excludes the commercial use of CRISPR for gene drive applications at this time.[10]

Esvelt isn't the only one. Freedom of Information documents obtained by a coalition of civil society organizations (of which ETC was a member) show gene drive developers warning each other that it would be counter-productive to talk about agricultural uses.[11] In a July 2017 email to the GBIRd (Global Biocontrol of Invasive Rodents) gene drive team Dan Tompkins of Landcare New Zealand said he favoured not mentioning gene drives in relation to agriculture, because 'many see conservation use as a backdoor for adoption for agricultural purposes, and this may expose the current GBIRd focus to undue flak.'

GDO developers may be warning agribusiness and each other to keep a low profile on gene drives, but that is not to say agribusiness isn't still actively engaging on the topic. If Bayer–Monsanto are indeed 'steering well clear' of gene drives it would be instructive to know what Tom Adams, Monsanto's VP of Global Biotechnology, told a closed meeting of military scientists in June 2017. Emails obtained via requests made under US Access to Information laws reveal that a secret group of military advisors known as the JASONs produced a classified study on gene drives in 2017 that was commissioned by the US Government. This study, which remains undisclosed to the public, was tasked to address 'what might be realizable in the next 3–10 years, especially with regard to agricultural applications.'[12] Emails show that the JASON study was informed by an initial two-day meeting of a select group of 12 invited gene drive researchers in June 2017 to which Tom Adams of Bayer–Monsanto gave an undisclosed presentation on crop science and gene drives.[13] Also among the handful of experts called to give evidence was Greg Gocal, chief scientific officer of Cibus, an agricultural biotechnology firm who sell gene-edited canola and other crops.

It is not clear what Cibus' or Bayer–Monsanto's precise interest or activities in gene drives are, but it appears they are not the only commercial actors closely tracking the field. Agribusiness majors including Syngenta and Dow Agroscience (now Corteva) have also been closely involved in US Gene Drive policy discussions.[14] Towards the end of 2017 a gene drive start-up, Agragene, was established in California under the same leadership as 'active genetics' company Synbal. According to Technology Review, Agragene, whose co-founders are Ethan Bier and Valentino Gantz of University of California at San Diego, 'intends to alter plants and insects' using gene drives (Table 1).

That agribusiness players are interested in creating GDOs is hardly surprising. Nor should it surprise us that the Gates

[7] https://genedrivenetwork.org/.

[8] https://genedrivenetwork.org/resources/7-factsheet-whats-a-gene-drive-july-2018/file.

[9] https://www.theguardian.com/science/2017/feb/16/woolly-mammoth-resurrection-scientists.

[10] 'Licensing CRISPR for Agriculture: Policy Considerations.' Broad Institute, September 29, 2016. https://www.broadinstitute.org/news/licensing-crispr-agriculture-policy-considerations.

[11] http://genedrivefiles.synbiowatch.org/.

[12] http://genedrivefiles.synbiowatch.org/2017/12/01/us-military-gene-drive-development/#7.

[13] http://genedrivefiles.synbiowatch.org/2017/12/01/us-military-gene-drive-development/#8.

[14] A February 2016 workshop to develop a roadmap on gene drive research included the international policy lead for Syngenta, Tichafa Munyikwa. On another occasion discussions included Steven Evans of Dow Agrosciences.

Table 1 Selected investments in gene drive organisms to 2017 (Full details in ETC's Forcing the Farm report (Table 1). DARPA is the Defense Advanced Research Projects Agency, an agency of the United States Department of Defense that is responsible for the development of emerging technologies for use by the military)

Funder	Recipient	Value (US $)
DARPA	Various projects including 'Safe Genes'	65–100 million
Gates Foundation	Target Malaria	75 million
Tata Trusts	Center for Active Genetics	70 million
Open Philanthropy Project	Target Malaria	17.5 million
Gates Foundation	Foundation for the National Institutes of Health	9.43 million
Gates Foundation	Massachusetts General Hospital Corporation	2.587 million
Open Philanthropy Project	NEPAD/African Union	2.35 million
Gates Foundation	Emerging Ag	1.6 million
Paul G Allen Frontiers Group	Center for Active Genetics	1.5 million
California Cherry Board	UC Riverside	500,000 so far (approx)
Maxmind	MIT and GW Univ (for Schistosomiasis)	100,000

Funding for gene drives research, in order of value

Foundation also holds shares in Bayer–Monsanto that have been valued at USD 23 million. With the technology being hyped as the next logical step in the intensification of agriculture, the leaders of such organizations may feel they cannot afford to ignore it, lest their competitors gain a head start in the race to dominate the market. As a group of French researchers led by Virginie Courtier-Orgogozo recently concluded:

> The time frame of gene drive perfectly fits the economic development strategies dominant today in agribusiness, with a focus on short-term return on investments and disdain for long-term issues. The current economic system based on productivity, yields, monoculture, and extractivism is a perfect match for the operating mode of gene drive. (Courtier-Orgogozo et al. 2017)

Courtier-Orgogozo and her colleagues suggest that 'in the future, gene drive could become a commonplace management technique for agribusiness, big or small, to edit the genome of the livings beings that hamper productivity.' Major agribusinesses are particularly well placed to move into the field since the technology originally emerged from insect geneticists—a research community with a long and deep affiliation with the pesticide industry. Already two GM insects, the pink bollworm and diamondback moth are being tested commercially (without gene drives for now), on US farmland for agricultural purposes.[15]

Global Genetic Force-Feeding

Releasing limited local or targeted gene drive organisms as a service may be the most obvious business model for agricultural use, but making money from 'global drives' may also be possible for gene drive companies. Some early proposals for GDO development hint at a more radical business model that borrows the imagery of apps and internet 2.0 from the world of broadcast media. Software companies commonly distribute their apps freely online or bundled with widely distributed operating systems but then require users to pay to unlock certain valuable features or uses. In the same way biotech companies may in the future choose to freely and widely release their biotech apps as GDOs that integrate themselves into the genomes of wild organisms but are designed so that taking advantage of the GDO requires paying for a proprietary co-product that unlocks their value.

Challenges for Policymakers

GDOs are invasive by design. They are a technology designed to ensure that engineered genes persist and spread in wild populations. While developers of these 'exterminator drives' claim that there may be ways to effectively contain GDOs in the future, these hypothetical claims and assumptions have yet to be examined, let alone tested. On 16 October 2018, ETC Group called for a moratorium on any environmental releases of Exterminator drives, in the interests of precaution and justice. Hundreds of organizations, many based in the Global South, joined this call. Several governments represented at the UN also expressed their concern.

Strict laboratory handling and containment rules for all gene drive research must be internationally agreed and put into practice before further research can proceed, even in the lab. At present, it appears possible for scientists to develop new GDOs without them being subject to any specific

[15] Oxitecs transgenic (https://www.oxitec.com/crop-protection/pink-boll-worm/) and Diamondback moth https://www.oxitec.com/crop.

biosafety regulations. In some jurisdictions, such as Brazil, it is not even clear whether they will be subject to the weak biosafety rules that controlled the development and use of GMOs.

Technologies that originate in the laboratory, such as GMOs and now GDOs, ignore deep-seated injustices and power imbalances which require political answers and democratic scrutiny, rather than technical quick-fixes. At both national and international levels, questions of technology assessment and societal consent have only begun to be formally addressed since pressure was put on by grassroots-based and other civil society organizations.

On 29 November 2018, after 2 weeks of highly contentious negotiations at the United Nations' Convention on Biological Diversity (CBD) in Sharm El Sheikh, Egypt, 196 countries agreed to stringent rules on 'gene drives.' As GDOs are genetically engineered to make them take over and then potentially eliminate entire populations, we should call them what they are: 'exterminator drives'. The UN's final agreement recognizes the serious risks and 'uncertainties' around the gene drive technology.[16] It calls upon governments only to consider introducing GDOs into the environment for experimental research, when 'scientifically sound case-by-case risk assessments have been carried out,' when 'risk management measures are in place to avoid or minimize potential adverse effects' and when 'the 'free, prior and informed consent' of 'potentially affected indigenous peoples and local communities is sought or obtained.'

This decision goes some way towards a moratorium on the release of gene drive organisms preferred by some countries at the talks, which is supported by indigenous people, food sovereignty activists and African civil society.[17] Efforts to block such a moratorium were led in large part by Target Malaria, the world's largest group undertaking gene drive experiments. Government representatives singing from the hymn-sheet of Target Malaria, including one employee, were inserted onto the official CBD negotiating teams of at least two African countries.

The outcome of the negotiations in Egypt places consent at the heart of any path toward the potential release of gene drive organisms. This has put the spotlight back on the adequacy of Target Malaria processes for gaining consent. In the two villages of Bana and Sourkoudingan in Burkina Faso, they are scheduled to soon release 'male sterile' genetically modified mosquitoes as a preliminary step towards releasing others with gene drives. Here they have brought reporters along and introduced them to people who are supportive of the project. Target Malaria has also issued videos that appear to show individuals in the communities supporting the project.[18]

To find out just how fully Target Malaria has obtained the 'free, prior and informed consent' of potentially affected communities, freelance journalist Zahra Moloo recently travelled first with two activists and then on a second trip, with a translator, to visit the targeted villages in Burkina Faso. Unlike many other journalists, she chose to visit the communities independently of Target Malaria. What emerged is different from that which Target Malaria has reported. Moloo concludes:

> The longer I filmed the more I became concerned to find that local people had not been involved in a process of genuine participation, let alone consent. Most worrying about Target Malaria's process of 'engagement' is the apparent absence of informed consent, a concept familiar to medical researchers. Target Malaria routinely speaks of 'engagement' and promoting 'community acceptance', but not the unequivocal word 'consent'. The project's preferred use of these words suggests its leaders have already decided to proceed with the release. Local people appear to only have access to information about gene drives from one source, which itself has a vested interest in promoting them—Target Malaria

Following the outcome at Sharm el Sheikh, Target Malaria appeared to brief one journalist that 'The requirement of "free, prior and informed consent" is slightly different in a public health context than in individual medical contexts.'[19] They argue that they obtain consent from everyone in a household when they collect mosquitoes, but that 'it's not logistically possible to obtain consent from each and every person affected' when it comes to GM mosquitoes.' However, it is the consent of potentially affected peoples that the UN has recommended for GDOs. When it comes to such a controversial technology, with potentially serious ecological effects, and as yet unknown consequences for health, giving consent cannot be limited to a handful of residents or their community leaders.

An academic-style article published in April 2019, the lead author of which is Target Malaria's public relations officer, the authors report on research undertaken 'over the course of a year by a multidisciplinary team of experts and practitioners'. It states that 'a clear understanding of who is likely to be significantly affected by the activities or implications of a [GDO] project is vital to designing an effective engagement strategy'. Yet the paper re-affirms Target

[16] https://www.cbd.int/COP2018-EGYPT.PDF.

[17] https://www.homef.org/posts/do-not-betray-africa-on-synbio-and-gene-drives.

[18] https://vimeo.com/301653373.

[19] https://www.vox.com/future-perfect/2018/12/7/18126123/gene-drive-malaria-convention-biological-diversity.

Malaria's view that a consent model does not apply. As we write this article (July/August 2019) Target Malaria had still failed to publish any details of the engagement or consent process that led to the release on 1 July 2019 and whether anyone went through a process of consent.

Civil society groups operating in and around the test-site villages are baffled as to why they too have not been consulted about a technology with far-reaching consequences. In the interviews for this film, Moloo heard from several people that the experimental release of GM and exterminator drive technology should be stopped until the risks and impacts have been investigated and until people across Burkina Faso have been fully informed and become active participants in decision-making.

The UN still recommends the consent of potentially affected peoples for new technologies such as gene drives. When it comes to such a controversial technology, with potentially serious ecological effects, and as-yet unknown consequences for health, giving consent cannot be limited to a handful of residents or opaque.

Target Malaria is doing research that would be deemed unethical in the UK, where its scientists are based. They are doing experiments in a foreign setting with more lax regulations. This practice is what the European Commission has, in the context of medical trials, called ethics dumping. The concept is part of a wider story of un-ethical domestic research practices that were documented in the mid-twentieth century, such as Nazi physicians' experimentation on minority groups, or the infamous Tuskegee trials, which saw 600 African American sharecroppers enrolled in a trial by the US Government to observe the impact of syphilis if left untreated (Schroeder et al. 2018; Perryer 2019).

Burkina Faso has already been subject to ethics dumping via Target Malaria's GM mosquito releases. GDO releases are the next step. Proposals to release GDOs on indigenous territories in New Zealand,[20] Australia,[21] and Hawaii[22] are on the agenda for the coming months. Decisions taken in this African state in relation to this exterminator technology could set an international precedent. We must continue to demand that proponents of experimental releases are obliged to obtain 'free, prior and informed' consent in all these countries. Given Target Malaria's failure to follow United Nations recommendations, the people of Burkina Faso and concerned civil society groups across Africa, have now called for them to explain what rights they will have to say yes or no before proceeding any further.[23]

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