

# GM Potato Push in East Africa:

**Andean and African  
farmers condemn digital  
sequence information of  
potatoes from centres  
of origin – opens doors  
for biopiracy**

Photographed by Mauricio Gil

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Asociación ANDES supports indigenous peoples and smallholder farmers' self-determined development, the enjoyment of their biocultural heritage, and their human and biocultural rights. The organization engages in participatory development of methods, tools, and processes for establishing and protecting holistic landscapes that conserve (agro)biodiversity and foster ecological food production. ANDES conducts independent research in response to local and global indigenous concerns and works to generate collective action for local biocultural solutions to the intersecting problems of the climate and food security crisis, biodiversity loss, and poverty. Additionally, ANDES focuses on fostering networks and partnerships at the local and international levels and nurturing new forms of inter-community cooperative learning and discovery. This year is particularly special for ANDES, as it is celebrating 25 years of support for indigenous peoples and local communities, and launching the Yachay Kuychi Pluriversity, an educational initiative in the Sacred Valley of the Incas focusing on indigenous food systems.

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We remain committed to dismantling inequalities in the food and agriculture system in Africa and our belief in peoples' right to healthy and culturally appropriate food, produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.

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## Genetically modified potatoes may prove lucrative for US and British billionaire investors but are bad news for indigenous peoples and small farmers in Africa and the Andes.

**P**otato overlords on both sides of the North Atlantic want to see genetically modified (GM) potatoes spread across the developing world, and with the help of the International Potato Center (CIP), they are threatening to release a GM potato in East Africa. But potato farmers in the Andes, the crop's centre of origin and where GM potatoes are banned, agree with African farmers and civil society that GM potatoes are a bad idea and share their opposition to the project.

The GM potato proposed for East Africa is a "cisgenic" variant of the Victoria variety<sup>1</sup>, originally from South America but selected for use in Africa. GM Victoria was developed by CIP. It is genetically engineered with three genes that were taken from Latin American relatives of the potato plant. Backers of the GM potato frame it as philanthropic aid for Africa, to stop the late potato blight fungus. While late blight is a problem in potatoes, it is nothing new. And late blight is hardly a uniquely African problem. Which raises the questions: Why Africa? Why now? Why this GM potato?

Late blight is a centuries old, persistent global problem. It is typically managed – wherever potatoes are grown – without genetic engineering. GM potatoes are banned in Peru and elsewhere and have been consistently rejected by the market in developed countries. So why are wealthy donors painting a picture of small farmers in Uganda and Rwanda clamouring for genetic engineering? Could the donors have motives beyond this charity?

The African Centre for Biodiversity (ACB) in Johannesburg and PELUM Rwanda have recently published a detailed study that outlines the situation of potato farmers in Rwanda who, alongside Ugandan farmers, are being targeted by the GM potato's promoters<sup>2</sup>. The ACB/PELUM study raises key issues and concerns about the GM potato. This report

does not repeat the important information and findings in the ACB/PELUM paper, but rather supplements it by looking into two additional aspects.

The first aspect is how the GM potato relates to the hot political question of access, prior informed consent (PIC) and benefit sharing for digital sequence information (DSI), a controversial issue currently under discussion in international forums on biodiversity, agriculture and health. The GM potato is also a DSI-derived potato, and its release could encourage a free-for-all on potato DSI. That would run contrary to the interests of indigenous peoples and small farmers everywhere, but most of all in the Andes, where the greatest potato diversity is found. The fact that CIP, based in Peru, is pushing this potato makes it even more problematic and important for the Andes.

Second, this paper provides information on the GM potato's European and American billionaire backers. One backer is no less than the Chancellor of Cambridge University, the heir to a food fortune who was named Baron by the Queen of England. The other is an American cowboy family, industrial and land barons who rule a network of giant corporate potato farms and ranches that are half the size of Rwanda itself.

The corporate farming and proprietary potato interests of the billionaires that are pushing the GM potato appear squarely aligned against not only African small farmers, but potato farmers in the Americas as well. Protecting the centre of diversity of Andean potatoes and the cultural diversity and traditional knowledge that goes with it means continuing to keep GM varieties out and protecting the rights and knowledge of Andean farmers in relation to potato diversity, including DSI.

1. Cisgenesis is a recent term some use to describe organisms that are genetically engineered with genes from related plants, in this case, plants from different species in the Solanum genus.

2. African Centre for Biodiversity and PELUM Rwanda. 2020. *The GM potato push in Rwanda: Key issues and concerns*. 3 February. <https://www.acbio.org.za/sites/default/files/documents/202002/gm-potato-push-rwanda-key-issues-and-concerns.pdf>

# The GM potato is a DSI product, and its adoption would be a bad precedent

One of the most worrying recent developments in biotech is that through the combination of sequencing technology and gene synthesis, companies have found a new way to commit biopiracy. By using DSI instead of accessing plants directly, which typically requires signing agreements, companies can evade benefit sharing responsibilities.

For indigenous peoples, such “digital biopiracy” enables theft, not only of physical materials but also of traditional knowledge. That is, companies and others can obtain traditional knowledge through publications, interviews, or other means and then undermine indigenous peoples’ control over the physical genetic resource by deriving genetic information and recreating key genes from DSI instead of signing an access agreement.

For example, a professor funded by a company might talk to elders about health-related uses of a plant, or its environmental adaptations

– perhaps describing the interview as anthropology, and without collecting any plants. Then the company could take the information obtained by the professor to guide analysis and use of DSI from the plant, which can be found from other sources, such as databases like GenBank. Misappropriation can thereby happen without the prior informed consent and mutually agreed terms required under the Convention on Biological Diversity (CBD) and its Nagoya Protocol on Access and Benefit Sharing.

While it is quietly noted in the back pages of a scientific publication<sup>3</sup>, CIP has not publicly discussed the fact that the GM potato it wants to release in East Africa is a product of DSI. Two of the three resistance genes engineered into the potato were not taken by CIP from physical sources. Instead, they were synthesised from sequences that CIP researchers downloaded from GenBank.

The two synthesised genes are named Rpi-vnt1.1 and Rpi-blb2. Rpi-vnt1.1 was found in a *Solanum venturii* plant originally collected in northern Argentina in 1973. The gene was sequenced by the Sainsbury Laboratory in the United Kingdom and uploaded to GenBank in 2010<sup>4</sup>; but not before the British laboratory exploited its commercial potential<sup>5</sup>. (More on that below.) The Rpi-blb2 gene is from a Mexican *Solanum bulbocastanum* plant that was collected prior to 1957. It was sequenced and uploaded into GenBank in 2005 by researchers from Wageningen University in The Netherlands<sup>6</sup>. The Wageningen researchers, like their British counterparts, were sure to claim commercial rights for themselves<sup>7</sup>. (More on that, too, below.)

3. Ghislain M et al. 2019. Stacking three late blight resistance genes from wild species directly into African highland potato varieties confers complete resistance to local blight races. *Plant Biotechnology Journal* 17: 2119–29.

4. Collected in Chicoana, Salta Province. Accession numbers include: INTA73095, PI458367 and CGN18108.

5. GenBank. *Solanum venturii* late blight resistance protein (Rpi-vnt1.1) gene, complete cds. URL: <https://www.ncbi.nlm.nih.gov/nuccore/FJ423044>

6. Two accessions, both from Mexico, are related to Rpi-blb2. These are PI243510 (misprinted in several scientific publications as PI245310), which appears to be a product of a Rockefeller Foundation breeding program in Mexico City. It left Mexico, described as a cross of two *S. bulbocastanum* accessions, in 1957. The second accession related to Rpi-blb2 is PI275187. It was collected in 1958 near Zacapu, Michoacán.

7. GenBank. *Solanum bulbocastanum* late blight resistance protein Rpi-blb2 (Rpi-blb2) gene, complete cds. URL: <https://www.ncbi.nlm.nih.gov/nuccore/DQ122125.1>

**Table 1: Transgenes in the GM potato<sup>8</sup>**

Gene	Species	Origin	GenBank ID source
Rpi-vnt1.1	<i>Solanum venturii</i>	Argentina	FJ423044.1 Sainsbury (United Kingdom)
Rpi-blb2	<i>Solanum bulbocastanum</i>	Mexico	DQ122125.1 Wageningen (Netherlands)
RB (Rpi-blb1)	<i>Solanum bulbocastanum</i>	Mexico	Univ. Wisconsin (United States)

CGIAR scientists had Rpi-unt1.1 synthesised from GenBank data by GenScript, an American company located in New Jersey. Rpi-blb2 was synthesised from GenBank data by Entelchon, a German company that is owned by Luxembourg-based Eurofins<sup>9</sup>.

The question of how to manage benefit sharing for use of DSI is the most important issue presently facing the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). DSI is also an existential issue facing the CBD, where it threatens to undermine the Convention's third objective of fair and equitable benefit sharing.

No deals have been struck between countries to resolve the DSI debate. In fact, in late 2019, disagreement over benefit sharing for DSI caused the collapse of a six-year ITPGRFA negotiation aimed at overhauling the Treaty's malfunctioning benefit sharing system, and DSI looms large on the CBD's agenda.

Potatoes themselves, of course, are an embodiment of traditional knowledge. Quite obviously, it was Andean farmers who domesticated them and who have developed and guarded thousands of potato varieties over millennia.

The extent to which traditional knowledge has a relationship to the resistance genes from Mexico and Argentina is not clear, but as long as rich countries refuse to commit to benefit sharing for DSI, it would be extremely unwise for developing country farmers to plant crops generated from it, particularly if the DSI's provenance is unclear and it has been claimed as the property of biotech companies. "Why, look," wealthy countries would say about the Mexican and Argentinian genes being used in Africa, "you are using DSI that we 'discovered' and claimed, and are letting you use for free. Why should we then pay benefit sharing when we use the DSI?"

There is reason to question the role of CIP – which is very well-aware of the DSI debate – in promoting African adoption of DSI-derived crops at this difficult political juncture. By trying to push African farmers into cultivating potatoes with synthetic genes, is CIP doing the bidding of the industry and undermining the rights of indigenous peoples, small farmers, and the negotiating position of developing countries? Would the release of this variety signal a potato DSI free-for-all?

CIP's actions in Africa aren't just problematic on that continent, they are poised to harm potato farmers in the Andes as well, as it would be the interests and rights of Andean farmers, who created and hold the greatest potato diversity, that would be placed most at risk.

8. The third gene, RB or Rpi-blb1, was reportedly cloned directly from physical material – also an accession from Mexico – by the University of Wisconsin (US).

9. Ghislain M et al. 2019. Stacking three late blight resistance genes from wild species directly into African highland potato varieties confers complete resistance to local blight races. *Plant Biotechnology Journal* 17: 2119–29.

# The GM potato's lordly links and earthly profits

Probe any GM crop being proposed for Africa and the US government can probably be found lurking behind it. USAID, the American development agency, is well known for its crusade to push genetically modified organisms (GMOs) into Africa. That certainly applies to the GM potato, whose makers have thanked USAID for their “long and constant” financial support<sup>10</sup>.

The dogged American dedication to the GM potato isn't surprising, considering that pushing GMOs onto the developing world has been on the US agenda for a generation. What might surprise some, however, is the GM potato's high-class British links. They come, counter-intuitively, via the oddly named 2Blades Foundation, a US-based group that is also promoting the potato's development and release<sup>11</sup>.

2Blades exists to fund a variety of GM crop projects aimed at developing countries. It describes these projects as being charitable. At a glance, 2Blades looks like a relatively straightforward front for biotech money, and possibly that of wealthy GM-promoting donors like Bill Gates, to be funnelled into GM “aid” projects that offer tax deductibility for the Foundation's donors. That “aid” advances GMOs under a charity banner, with intended

effects including the opening of developing country markets for commercial GM seed.

2Blades' Board of Directors includes the usual suspects – members with venture capital links and ex-employees of the Gates Foundation, Monsanto, Syngenta, and the World Bank<sup>12</sup>. It has a quintessentially US modus operandi, but it doesn't talk American. It speaks with a posh British accent. 2Blades is an affiliate of the UK's Gatsby Foundation, which provides its core funding. Gatsby, in turn, is a vehicle of a billionaire heir to the fortune from Sainsbury's<sup>13</sup>, the UK supermarket chain: the lengthily titled Lord David Sainsbury, Baron Sainsbury of Turville, HonFRA, HonFREng.

Sainsbury once ran the family grocery business, but his present job title is Chancellor of Cambridge University. The last person to have that job was Prince Philip, husband of Queen Elizabeth. A big biotech investor and donor, Sainsbury paid for the creation of, and provides ongoing support for, laboratories bearing his name at both Cambridge and the John Innes Centre in Norwich. A true believer in the commercial potential of genetic engineering, Sainsbury has been an investor in GM crop companies since the 1990s. Those investments raised conflict-of-interest questions in the early 2000s, after Sainsbury was made the UK's Minister of Science<sup>14</sup>.

But it was a different matter that forced the centre-left billionaire out of politics. He resigned in the midst of the “loans for lordships” scandal that emerged in 2006, when it was revealed that several Britons nominated for peerages by then-Prime Minister Tony Blair had secretly loaned large sums of money to the Labour Party. Sainsbury's title predated the scandal, but when it emerged that he, too, had made a secret loan to the party – £2 million – in possible violation of the Ministerial Code, he chose to resign<sup>15</sup>.

10. Ghislain M et al. 2019. Stacking three late blight resistance genes from wild species directly into African highland potato varieties confers complete resistance to local blight races. *Plant Biotechnology Journal* 17: 2119–29.

11. Ibid. Also see: 2Blades Foundation. 2016. 2Blades supports late blight resistance for potatoes in Africa (press release). 8 August. <http://2blades.org/2016/08/08/2blades-supports-late-blight-resistance-potatoes/>

12. 2Blades Foundation. n.d. Our Team (web page). <http://2blades.org/our-team/>

13. Gatsby Foundation. n.d. Two Blades Foundation (web page). <https://www.gatsby.org.uk/plant-science/programmes/two-blades-foundation>

14. Moore J. 2004. Biotech firms linked to Sainsbury trust hit cash trouble. *The Telegraph*. 15 April. <https://www.telegraph.co.uk/finance/2883006/Biotech-firms-linked-to-Sainsbury-trust-hit-cash-trouble.html>

15. McSmith A. 2006. Lord Sainsbury resigns after eight years as Science minister. *The Independent*. 11 November. <https://www.independent.co.uk/news/uk/politics/lord-sainsbury-resigns-after-eight-years-as-science-minister-6230103.html>



Photo: Asociación ANDES

Though Sainsbury was collateral damage, his political career was over. He returned to investing and philanthropy, establishing US- and UK-backed public-private hybrid investment funds in East Africa. More recently, he invited American billionaire Bill Gates to his namesake laboratory at Cambridge<sup>16,17</sup>, where the two discussed their shared interest in getting GMOs under commercial cultivation in Africa<sup>18</sup>.

And here begins a very complicated set of relationships around the GM potato and British and American billionaires (and Dutch plant scientists).

16. USAID et al. 2011. USAID and Impact Investors Capitalize New Equity Fund for East African Agribusinesses (press release). *Business Wire*. 28 September. <https://www.businesswire.com/news/home/20110928005870/en/USAID-Impact-Investors-Capitalize-new-Equity-Fund>

17. Gatsby Foundation. 2015. CEO Opportunity Brief. July. <http://www.gatsby.org.uk/uploads/africa/about/pdf/ceopack-july.pdf>

18. Sainsbury Laboratory. 2019. Plant scientists gather in Cambridge to advance collaborations in global food security research (press release). 15 October. <https://www.slcu.cam.ac.uk/news/plant-scientists-gather-in-Cambridge-to-advance-collaborations-in-global-food-security-research>

# Sainsbury's interests and allies in America

Gates may or may not be a donor to 2Blades, but Sainsbury, it turns out, has other American billionaire potato allies.

The Sainsbury Laboratory in Norwich, the counterpart to the Cambridge facility, runs on Sainsbury money. It was this laboratory that identified and sequenced one of the genes (Rpi-vnt1.1) used in the GM potato by CGIAR.

At the Norwich Sainsbury Laboratory there is a research unit named the 2Blades Group. This group is focused on “translational research”, meaning moving Sainsbury Laboratory science from the laboratory into market. The 2Blades Group is, unsurprisingly, funded by Sainsbury's American charity with the same name.

Serving as a bridge into the US from the UK Sainsbury operations, Illinois-based 2Blades licenses intellectual property from Sainsbury Laboratory. In 2016, 2Blades announced a “partnership” between Sainsbury, itself, and the JR Simplot Company, a privately-held American potato breeder and processor that is one of the world's largest sellers of French fries and other frozen potato products to the food service industry<sup>19</sup>.

This is not the first time that Simplot and Sainsbury have teamed up. GM potatoes that were developed before 2016 by Simplot include the same (or a close variant of) the resistance gene identified by Sainsbury's Norwich lab

(Rpi-vnt1)<sup>20</sup>. In other words, one of the genes found in the African GM potato was put in Simplot's GMOs in North America several years ago, after apparently being licensed from Sainsbury to the Americans.

According to 2Blades, under the deal announced in 2016, Sainsbury and 2Blades will “enable Simplot to add additional genes from wild potato varieties to combat global [plant disease] strains in future Innate generations.”<sup>21</sup> “Innate” is the name that Simplot gives to its GM potatoes, which to date haven't sold well in the US because many large US buyers, such as McDonald's restaurants, aren't interested in GM potatoes.

An odd aspect of the 2016 announcement and associated information on the companies' use of proprietary potato genes is that, while 2Blades and Sainsbury cultivate an image of providing charity to Africa and developing countries more generally, reference to the Latin American origin of the potatoes and genes of potato relatives that they patent is conspicuously absent. An uninformed reader might get the impression that Sainsbury's scientists make up potato disease resistance genes out of thin air.

It also turns out that in addition to its relationship to Sainsbury, Simplot has licensed or perhaps purchased at least two patents on potato resistance genes from the Dutch company Agrico. These patents<sup>22</sup> appear to include another of the genes stacked in the GM potato for East Africa, Rpi-blb2. This is the gene uploaded to GenBank by Wageningen University in 2005. How, exactly, Simplot's patents and commercial interest in this gene have been managed in relation to the GM potato for Africa has not been publicly explained, though circumstances suggest it has given access to, or co-controls, the intellectual property with 2Blades.

19. 2Blades Foundation. 2016. 2Blades partners with the Sainsbury Laboratory and J.R. Simplot Company to develop resistance against potato diseases (press release). 8 March. <http://2blades.org/2016/03/08/2blades-partners-with-the-sainsbury-laboratory-and-j-r-simplot-company-to-develop-resistance-against-potato-diseases/>

20. JR Simplot Company Petition (14-093-01p) for Determination of Non-regulated Status for Innate Potatoes with Late Blight Resistance, Low Acrylamide Potential, Reduced Black Spot and Lowered Reducing Sugars: Russet Burbank Event W8. [https://www.aphis.usda.gov/brs/aphisdocs/14\\_09301p\\_dpra.pdf](https://www.aphis.usda.gov/brs/aphisdocs/14_09301p_dpra.pdf)

21. Sainsbury Laboratory. 2019. Plant scientists gather in Cambridge to advance collaborations in global food security research (press release). 15 October. <https://www.slcu.cam.ac.uk/news/plant-scientists-gather-in-Cambridge-to-advance-collaborations-in-global-food-security-research>

22. These are US 7,795,398 and 7,485,773. See: JR Simplot. n.d. J.R. Simplot Company US Patents (web page). <http://www.simplot.com/about/patents>



Photo: Asociación ANDES

Simplot has also entered a deal, again involving USAID and CIP, to produce another GM potato for release in Indonesia and Bangladesh. That GM potato again incorporates Rpi-blb2 (the Mexican gene that Simplot bought from the Dutch) and Rpi-vnt1 (the Argentinian gene that Sainsbury appears to have licensed to Simplot)<sup>23</sup>.

And then there is the Sainsbury supermarket chain itself, still partially owned by Lord David and his family. The chain has its own potato interests, including a proprietary potato, Anya, named for the Baroness Sainsbury of Preston Candover. In commoner terms, Anya is Lord David's sister-in-law. (While hereditary peerage is said to have been limited in the UK,

a conspicuously large number of Lord David's extended family have noble titles.)

Discerning the full scope of the relationships between Sainsbury and Simplot, both those mediated through 2Blades and direct relationships, is difficult. Also difficult is determining the extent of the relationships between the GM potato and Sainsbury-backed investments in East African agroindustry.

It is complex and tricky to unravel the muddle of private money, public agencies, agbiotech companies, public-private investment hybrids, and efforts described as charity. Sainsbury's wealth is private, and there are limited financial disclosure requirements for US

23. Michigan State University. n.d. Feed the Future Biotechnology Potato Partnership: The Science (web page). <https://www.canr.msu.edu/biotechpp/the-science/>



'Potato birthplace' by Stef de Haan/INTERNATIONAL POTATO CENTER is licensed under CC BY <https://flic.kr/p/26c4LSV>

**“It is complex and tricky to unravel the muddle of private money, public agencies, agbiotech companies, public-private investment hybrids, and efforts described as charity”**

foundations. Similarly, Simplot is a privately held company that is not required to report to shareholders. What's clear is that the two families are both fantastically wealthy and share a vertically integrated interest in potato farming, including promoting the use of GMOs.

As with questions about intellectual property over potato disease resistance genes, the complicated web of corporate and “charity” relationships surrounding the GM potato might be clarified with further research.

## A different sort of baron: **The potato cowboys**

The Simplots and Sainsburys are an odd pairing: one born aristocratic, the other still with dirt under its fingernails.

Lord David came into the world rich, is an urbane Etonian, titular head of the renowned Cambridge University, and man with elite social standing in the UK. The founder of the American company, Jack Simplot, on the other hand, was a famously down-to-earth Idaho cowboy, whose education ended before high

school started. Jack's children now control the company. It is still based in Boise, Idaho, far from the centres of the American social and intellectual elite.

Importantly, however, Simplot isn't just a potato breeder and processor, and this bears serious consideration in thinking about the company's involvement in GM potatoes in developing countries in all regions. Simplot is a dedicated corporate farm operator. The company prides itself on the huge size of its company farms and ranches. Simplot plants over 33 000 hectares of crops on company land every year, and it operates cattle ranches that sum about 13 000 square kilometres. Both are presumably staffed not by owner-operators but by wage employees. Simplot runs 30 000 cows and boasts of being "the only company in the top ten nationwide for both cow-calf production and feedlot capacity"<sup>24</sup>. In addition, Simplot has interests in mining, turfgrass, and fertiliser production.

While Lord David may have been awarded the title of Baron, in little more than a lifetime the Simplot family has turned themselves into land barons, mainly thanks to the potato.

## Conclusion

Simplot's farms and ranches cover an area nearly equal to half of Rwanda, one of the target countries of the GM potato. But like Andean indigenous farmers, Rwandan farmers aren't billionaires or land barons. Rwandan farmers work plots that are an average of 0.5 hectares. Eighty percent are under one hectare. Most are on hillsides, and less than 5% are irrigated, making them ill-suited for input-intensive agriculture. Reports of high yields

from the potato<sup>25</sup> are based on trials under wildly unrealistic conditions, at least for the average resource constrained Rwandan farmer. This raises questions, discussed by the African Centre for Biodiversity<sup>26</sup>, whether the Simplot-Sainsbury-CIP solution is at all appropriate for African farmers.

With Simplot's overt economic interest in the adoption of GM potatoes and commitment to large-scale corporate farming, and Sainsbury's financial weight thrown down on agbiotech and behind USAID and DFID-backed investment strategies to expand agroindustry, there's more than enough information to be concerned that the GM potato is not a friend of small farmers in Africa, or in the Andes. And that it is certainly not a friend of maintaining the diversity of cultivated potatoes.

Is the narrative of CIP, 2Blades, and others about small farmers' alleged need for GMOs a smokescreen to obscure the displacement of those farmers by corporate monocultures? Is a GM potato that may contribute to destabilising small-scale farming communities being promoted as a "charitable" project by the same, or similar, entities whose financial interests would be advanced by social upheaval?

For Andean potato farmers at the centre of the crop's diversity, the situation raises many questions. Why is CIP, an institution based in Peru, pushing GM potatoes in Africa? What does it say about CIP, which should be cultivating good relationships with the Andean indigenous stewards of potato diversity, when it seeks to release a potato in Africa that would be illegal in Peru? And why is CIP seeking to release DSI-derived potatoes that could encourage further corporate appropriation of potato DSI, a situation that would undermine the rights of indigenous peoples and small farmers who created and conserve potato diversity?

24. Simplot n.d. About Simplot (web pages). <http://www.simplot.com/about>

25. African Centre for Biodiversity and PELUM Rwanda. 2020. *The GM potato push in Rwanda: Key issues and concerns*. 3 February. <https://www.acbio.org.za/sites/default/files/documents/202002/gm-potato-push-rwanda-key-issues-and-concerns.pdf>

26. African Centre for Biodiversity and PELUM Rwanda. 2020. *The GM potato push in Rwanda: Key issues and concerns*. 3 February. <https://www.acbio.org.za/sites/default/files/documents/202002/gm-potato-push-rwanda-key-issues-and-concerns.pdf>