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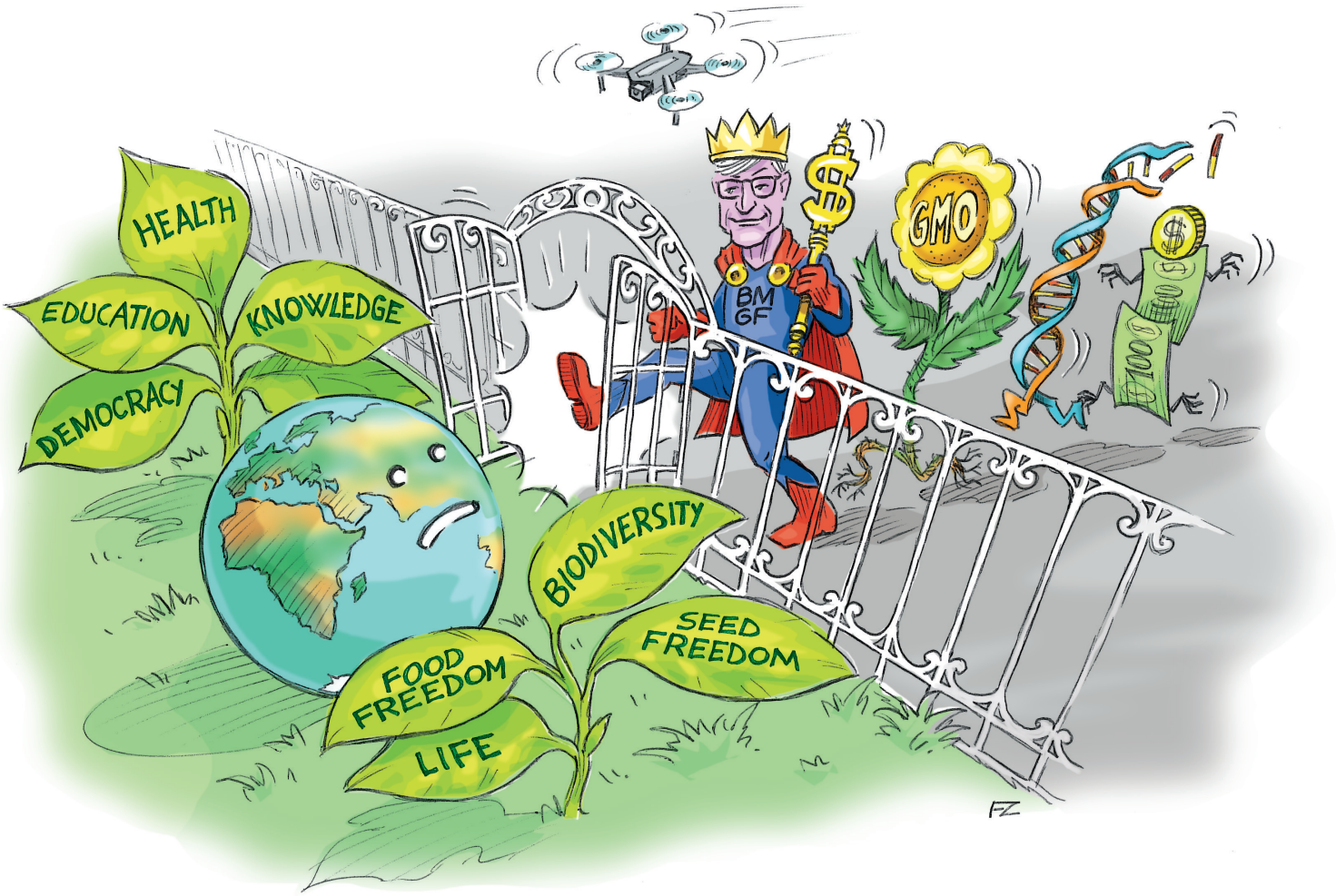

OVER SEED, FOOD, HEALTH, KNOWLEDGE ...AND THE EARTH

A GLOBAL CITIZENS' REPORT

Coordinated by

Navdanya international

GATES FOUNDATION'S GREEN REVOLUTION FAILS AFRICA'S FARMERS

Timothy A. Wise

In 2006, the Bill and Melinda Gates Foundation, the world's largest private foundation, endowed by the fortunes of technology monopolist Bill Gates of Microsoft, got lucky. Barely one year before the food-price spikes in 2007, the foundation launched a new agricultural development initiative to supplement its global health and education programs. Much of the initial funding came from investor Warren Buffett, awash in cash from the speculative bubble that would burst the following year. The Gates Foundation joined the Rockefeller Foundation to launch the Alliance for a Green Revolution in Africa (AGRA), which would prove to be their ready-made answer to the coming question: How can Africa grow more food?

AGRA's goals were ambitious: to double productivity and incomes by 2020 for 30 million small-scale farming households while reducing food insecurity by half in 20 countries. As with other BMGF initiatives, Western technologies would save the poor.

It is 2020, how is that Green Revolution going? AGRA has published no overall evaluation of the impacts of its programs on the number of smallholder households reached, the improvements in their yields and household incomes or their food security. It does not even make reference to those goals or progress in achieving them. Neither has the Gates Foundation, which has provided two-thirds of AGRA's funding roughly $1 billion in funding. This lack of accountability represents a serious oversight problem for a program that has both consumed so much in the way of resources and driven the region's agricultural development policies with its narrative of technology-driven, input-intensive agricultural development.

My research shows that AGRA is failing on its own terms. There has been no productivity surge. Many climate-resilient, nutritious crops have been displaced by the expansion in supported crops such as maize. Even where maize production has increased, incomes and food security have scarcely improved for small-scale farming households, AGRA's supposed beneficiaries. The number of undernourished in AGRA's 13 focus countries has increased 30% during the organization's well-funded Green Revolution campaign.

The Gates Foundation prides itself on being a science-guided, data-driven, results-oriented philanthropy. On AGRA, it has spent two-thirds of a billion dollars. The results have been poor, which is all the more remarkable given that African governments have been persuaded to subsidize the purchases of Green Revolution seeds and fertilizers with up to $1 billion *per year* in support. The Gates model for agricultural development is clearly flawed. Will the foundation recognize its failures and change course?

Failure to yield

As I document in my recent paper, "Failing Africa's Farmers: An Impact Assessment of the Alliance for a Green Revolution in Africa,"[1] and the related report, "False Promises: The Alliance for a Green Revolution in Africa,"[2] AGRA has received nearly $1 billion in contributions and made over $500 million in grants. I set out to fill the accountability gap as AGRA reached its self-declared 2020 deadline. Not surprisingly, AGRA declined my request to provide data from its own internal monitoring and evaluation of progress. That has been my experience with both BMGF and AGRA, that they are more image-conscious than results-oriented, more concerned with protecting a carefully crafted reputation than they are with openly sharing and reflecting on their impacts. As a researcher, I have never gotten past the Communications Department at either institution.

Table SEQ Table * ARABIC 1

AGRA: Limited Signs of Green Revolution
% Growth, selected crops, 13 AGRA Countries
2004-6 to 2016-18

	Production (MT/year)	Area (hectares)	Yield (MT/hectare)
Maize	87	45	29
Rice (paddy)	163	87	41
Wheat[1]	93	28	51
Millet	-24	-5	-21
Sorghum	17	13	3
All Cereals	55	22	27
Cassava	42	51	-6
Roots/tubers (all)	42	51	-7
Pulses (all)	80	19	51
Groundnuts	17	52	-23
Soybean[2]	58	35	18

Source: FAOSTAT for 13 Alliance for a Green Revolution in Africa countries: Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Tanzania, Uganda, Zambia.
[1] excluding Burkina Faso and Ghana
[2] excluding Ghana, Mozambique, and Niger

In the absence of data on AGRA's direct beneficiaries and impacts, we used national-level data from 13 AGRA countries through 2018. We tracked trends in production, yield, and area harvested for most of the region's important food crops to assess the extent to which Green Revolution programs are significantly raising productivity. We also examined data on poverty and hunger to gauge whether there were signs that smallholder farmers' incomes and food security are improving across the region at levels commensurate with AGRA's goals of improved farmer welfare.

As Table 1 shows, we found no evidence that productivity, incomes or food security were increasing significantly for smallholder households. Specifically, we found:

- Little evidence AGRA was reaching a significant number of farmers. Its last progress report says only that AGRA had trained 5.3 million farmers in modern practices with "1.86 million farmers using" such practices. This is vague and far short of the stated goal of doubling productivity and incomes for nine million farmers directly and another 21 million indirectly.

[1] Wise, Timothy A. . "Failing Africa's Farmers: New Report Shows Africa's Green Revolution Is 'Failing on Its Own Terms.'" Global Development and Environment Institute - Tufts University, July 2020. Working Paper No.20-01. https://sites.tufts.edu/gdae/files/2020/07/20-01_Wise_FailureToYield.pdf
[2] Mkindi, A. R., Maina, A., Urhahn, J., Koch, J., Bassermann, L., Goïta, M., Nketani, M., Herre, R., Tanzmann, S., Wise, T. A., Gordon, M., & Gilbert, R. (2020). *False promises: The alliance for a green revolution in africa (Agra)*. Biodiversity and Biosafety Association of Kenya(BIBA), Brot für die Welt, FIAN Germany, German NGO Forum on Environment and Development, INKOTA-netzwerk e.V., Institut de Recherche et de Promotion des Alternatives en Développement (IRPAD), PELUM Zambia , Rosa Luxemburg Stiftung Southern Africa, Tanzania Alliance for Biodiversity (TABIO), Organic Agriculture Movement (TOAM). https://www.rosalux.de/en/publication/id/42635

- No evidence of significant increases in smallholder incomes or food security. For AGRA countries as a whole, there has been a 30% increase in the number of people suffering extreme hunger since AGRA began, a condition affecting 130 million people in AGRA countries. Kenya, home to AGRA's headquarters, saw an increase in the share of its people suffering undernourishment in the AGRA years.
- No evidence of large productivity increases. For staple crops as a whole, yields are up only 18% over 12 years for AGRA's 13 countries. Even maize, heavily promoted by Green Revolution programs, showed just 29% yield growth, well short of AGRA's goal of doubling productivity, which would be a 100% increase.
- Where technology adoption has taken place, input subsidies provided by African governments seem far more influential than AGRA's programs. It is difficult to find evidence that AGRA's programs would have any significant impacts in the absence of such large subsidies from African governments.
- Even where production increased, as in Zambia, a near-tripling of maize production did not result in reductions in rural poverty or hunger. Small-scale farmers were not benefiting; poverty and hunger remained staggeringly high with 78% of rural Zambians in extreme poverty.
- Green Revolution incentives for priority crops such as maize drove land into maize and out of more nutritious and climate-resilient traditional crops such as millet and sorghum, eroding food security and nutrition for poor farmers. Millet production declined 24% with yields falling 21% in the AGRA years.
- No signs of "sustainable intensification," the goal of sustainably increasing production on existing farmland. Environmental impacts are negative, including acidification of soils under monoculture cultivation with fossil-fuel-based fertilizers.
- Production increases have come more from farmers bringing new land under cultivation – "extensification" – than from productivity increases. Subsidies and other support programs encourage farmers to expand the cultivation of supported crops such as maize. This has implications for climate change mitigation and adaptation.

Rwanda: "Africa's Hungry Poster Child"

Rwanda, widely considered an AGRA success story thanks to rising maize production and yields, illustrates AGRA's failings. As the Table 2 shows, Rwanda's relative success in increasing maize yields 66%, with heavy subsidies and pressure from the government, came at the expense of sorghum, sweet potato, and other more nutritious crops. Area expansion was more responsible for production increases than were improved yields, as promised by the Green Revolution. Our more comprehensive measure of yield improvements for a basket of staple crops shows mediocre yield gains of just 24% over 12 years.

More telling, the increased production of maize has done little to improve the lives of Rwanda's small-scale farmers. The number of undernourished has increased 15% in the AGRA years. The national rate of extreme poverty has barely moved, from 63% before AGRA to 60% in 2018.

Most other AGRA countries have done even worse. Only Ethiopia and Ghana show any sign of dynamism in productivity growth while reducing the number of undernourished. As the Table 3 shows, most AGRA countries have seen only small productivity increases with rising numbers of malnourished people. AGRA's home country, Kenya, has seen a 7% *decline* in staple yields with a 43% increase in undernourishment.

Table SEQ Table * ARABIC 2

Rwanda Under AGRA % Growth, selected crops 2004-6 to 2016-18			
	Production (MT/year)	Area (hectares)	Yield (MT/hectare)
Maize	305	146	66
Rice (paddy)	98	147	-19
Wheat	-46	-60	46
Millet	28	132	-45
Sorghum	-18	-17	0
All Cereals	82	43	27
Cassava	30	-16	55
Roots/tubers (all)	3	-3	6
Groundnuts	76	129	-24
Soybean	1	26	-19
Pulses (all)	89	54	23
Staple Yield Index[1]			24

Source FAOSTAT

[1]Sum of yield increases weighted by relative areas for maize, millet, sorghum, and roots/tubers.

Table SEQ Table * ARABIC 3

AGRA: Productivity & Undernourishment		
	% Change 2004/6-2016/18	
	Staple Yields Index	Number Under-nourished
AGRA TOTAL	18	31
Burkina Faso	-10	15
Ethiopia	73	-29
Ghana	39	-20
Kenya	-7	43
Malawi	50	-3
Mali	19	-14
Mozambique	30	6
Niger	36	71
Nigeria	-8	181
Rwanda	24	13
Tanzania	22	29
Uganda	0	155
Zambia	20	29

Source: FAO; author's calculation of change in number undernourished between 3 year averages 2004/6 - 2016/18

Staple Yield Index: weighted yield increases for maize, millet, sorghum, roots/tubers. For AGRA total, Ethiopia, Nigeria, and Tanzania - cereals plus roots/tubers.

Time to change course

Rwanda's former Agriculture Minister, Agnes Kalibata, now heads AGRA. In a controversial move, the U.N. Secretary General named his Special Envoy to lead a planned U.N. World Food Systems Summit in 2021.

She is likely to bring her narrow Green Revolution perspectives to a discussion meant to address systemic failures in our food systems. The World Food Summit should instead actively consider agroecology and other low-cost, low-input approaches, which have shown far better short and long-term prospects than high-input Green Revolution practices. One University of Essex study[3] surveyed nearly 300 large ecological agriculture projects across more than 50 poor countries and documented an average 79% increase in productivity with decreasing costs and rising incomes. Such results far surpass AGRA's.

AGRA and the Gates Foundation have had their chance to show that they could bring a Green Revolution of agricultural productivity and rising incomes to Africa's small-scale farmers. They have failed, even with the unprecedented levels of subsidies from African governments to entice farmers into buying Green Revolution seeds and fertilizers.

Many farmers' groups in Africa actively opposed AGRA from the start, pointing to negative environmental and social impacts of the first Green Revolution in Asia and Latin America. They have been proven right. Now it is time for the Gates Foundation, donors, and African governments to listen to farmers and shift their support to agroecology and other farmer-led, climate-resilient efforts to transform our food systems.

[3] Pretty, J. N., Noble, A. D., Bossio, D., Dixon, J., Hine, R. E., Penning de Vries, F. W. T., & Morison, J. I. L. (2006). Resource-conserving agriculture increases yields in developing countries. *Environmental Science & Technology*, *40*(4), 1114–1119. https://doi.org/10.1021/es051670d

Gates to a Global Empire

…over Seed, Food, Health, Knowledge and The Earth

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