No More Technological "Silver Bullets": A Policy Brief on Canada's Role in Africa's Agricultural Underdevelopment

Policy brief prepared for the Standing Senate Committee on Foreign Affairs-Africa Study

By

The Working Group on Canada's Policy with Regard to Agricultural Biotechnology and Developing Countries

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This brief was prepared in response to a request from the Standing Senate Committee on Foreign Affairs for information on Canadian foreign policies and their effects on agricultural development in Africa.

The brief is presented by **The Working Group on Canada's Policy with Regard to Agricultural Biotechnology and Developing Countries**. The Working Group is made up of international development organizations, farmers groups, and other civil society organizations including: Canadian Organic Growers, ETC Group, Inter Pares, National Farmers Union, Social Justice Committee, The United Church of Canada, Union paysanne, and USC Canada.

"What can we do in Canada to help Africa? Do we send farmers or lawyers? It sounds like this is a political problem" (Senator Frank W. Mahovlich, March 8 2005).[1]

The Canadian Senate committee's discussion of the role of science and technology -- especially biotechnology -- in Africa is timely. When the G8 summit takes place in Edinburgh in July this year, leaders will discuss a Canadian initiative for a "Pro-Poor" science strategy for developing countries. While the details are still being discussed, we understand that elements of the strategy include support for scientific research related to climate change, new nano-scale technologies, and agricultural biotechnology. In a recent article in *New Scientist*, Prime Minister Tony Blair's scientific adviser, David King, wrote of the importance of the G8 creating new scientific Centres of Excellence in Africa, and specifically lauded Canada's BECA initiative (Bioscience Centre for East and Central Africa) being established in Nairobi, Kenya.[2] However, a careful look at the history of scientific adventurism in Africa over the past 60 years offers a cautionary tale for the G8's deliberations as well as for Canada's involvement in BECA. Canada and Britain, in particular, have good reason to tread carefully.

There is no doubt that science and technology have an important role to play in international development. As with most interventions, however, "context" is everything. If new technologies are introduced into a foreign environment in the absence of a clearly understood demand and careful preparation -- including the right of the recipients to say "no" -- there is every risk that the tool will take priority over the purpose.

In January 1950, then foreign minister Lester Pearson flew to Sri Lanka to attend the Colombo Conference of Commonwealth Foreign Ministers that launched Canada's foreign aid programme. Pearson was keenly aware of both the importance and the limitations involved in pressing new technologies upon marginalized peoples. Pearson not only created the External Aid Office and then CIDA but, in his later years, publicly advanced the idea of an "international development research center" which was later founded in May of 1970. Thus, Pearson was a friend to science but an even greater friend to the South.

When Mike Pearson realized he would be unable to attend the second Colombo meeting, he sent a message to its Chair warning that:

> *"The Delegation (...) should also look with scepticism at overly grandiose schemes of development. Ordinary handpumps may be more suited to some regions than vast irrigation works; and ploughs may be more needed than tractors".*[3]

He was right to be concerned. Again, it is worth stressing that the first Chair of IDRC was not a Luddite - he was simply attuned to context and keenly aware that science and technology are merely tools -- not solutions.

If we were to undertake a thorough examination of the history of scientific adventurism in Africa since World War II, it would be a long, exhausting - and depressing - account. Here are but a few examples...

1940s-50s: ***Not peanuts!*** – In 1946, Britain's Labour Government (Dr. King take note) sought to both stock their national larder and improve agricultural productivity in East Africa by encouraging their colonies to take on groundnuts as an export crop. £25 million were committed to cultivating 13,200 square kilometres of groundnuts in what is now Tanzania. However, the British ignored incompatible soil conditions and underestimated climatic uncertainties such as floods and droughts as well as wildlife hazards and local labour concerns. The groundnut scheme was ultimately abandoned in 1951 – wasting an investment that swelled to £49 million and damaging the lives and livelihoods of all the farm families and pastoralists displaced by the experiment. [4]

1960s-70s: ***Missed revolution*** – The so-called Green Revolution that began in the 1960s missed Sub-Saharan Africa. This is both the "good news" and the "bad news". It was especially bad news for CGIAR (Consultative Group on International Agricultural Research) that brought together the diverse Green Revolution initiatives of the 1960s and early 70s to promote high-yielding, semi-dwarf wheat, rice and maize (corn). From its inception in 1972, to 2003, CGIAR has spent roughly 45% of its annual budget in sub-Saharan Africa supporting four Centres of Excellence.[5] This amounts to US$ 3,116 million invested over 31 years. Canada, the UK, USA and Australia have taken the lead in the CGIAR—especially in Africa.[6] The international panel led by Maurice Strong that evaluated the work of the CGIAR at the end of the last decade acknowledged that despite years of scientific intervention and massive expenditures, the CGIAR has little to show for its work.[7]

We noted that this is both bad news and good news. The good news is that the "one-size-fits-all" orientation of the Green Revolution missed Africa. The continent was spared the industrial homogenization of its food crops and still has enormous biological diversity from which Africa can strengthen its own food security and food sovereignty.

1970s-80s: ***Half-baked*** – In the mid-'70s, Canada built a huge automated bakery in Dar Es Salaam, Tanzania. The bakery not only undermined the small local bakeries already operating, it also undercut demand for indigenous crops and created a demand for Canadian wheat. The bakery began baking bread in 1976, five years later than planned and cost Canadian tax payers $1.7 million-- 3 times as much as the original budget. The bakery has gone down as one of the most famous examples of inappropriate foreign aid in modern history.[8]

1970s-1990s: ***Wheat dreams*** – In an attempt to meet the manufactured demand for wheat, CIDA launched a $100 million dollar wheat production project in Tanzania to feed its bakery. Pastoralists and villagers were driven off 100,000

acres of their land to make way for wheat and the tractors that had so concerned Mr. Pearson three decades earlier. Inter-tribal relationships were poisoned, people were beaten, imprisoned and killed, and land disputes continue to this day.[9] Not only is this project an assault to human rights, it is also a momentous economic failure, with the farms still dependent on Canadian aid twenty years after their establishment.[10] The repercussions of this failed scientific adventure continue to be an embarrassment to Canada.

2000s: ***Biotech's silver bullet?*** – Now we have a Canadian and British government proposal for "Pro-Poor" Science in Africa. Canada has already launched BECA as yet another Centre of Excellence. Without sufficient consultation, this $30 million venture was born out of the G8 summit in Canada. While the Canadian government insists that BECA is not a biotech centre but a biosciences centre, this is not the impression left in Africa or with CGIAR. At the FAO Commission meeting in Rome last November, for example, a representative of the CGIAR from ILRI (the institute that will host BECA) told the assembled governments that BECA is nothing less than a biotechnology centre. Certainly the plethora of agricultural biotechnology centres, promotional and "training" efforts undertaken by US Government agencies, such as USAID, the biotech corporations and "NGOs" such as the ISAAA[11], would suggest that BECA is just another one of these promotional efforts having little to do with "Pro-Poor" science or food sovereignty.

What does all this mean for aid programmes and, in particular, for science and technology in Africa? It certainly does not mean that we abandon science and technology as one of the tools to further well-being. It does mean that we must view new scientific tools with "scepticism" (as Mike Pearson advised half a century ago) and we should keep science in the context of a broad development agenda. In light of 60 years of underdevelopment in Africa, here are some fundamental considerations to keep in mind when developing policy:

Agricultural policies need to be guided by what local actors know and be built from the bottom up. The era of Big Box Science must come to an end. Africa has had enough "white elephant" Centers of Excellence. Agricultural and rural development strategies are being developed by Africans themselves. Many of these ideas include a scientific component. Our resources should support these initiatives and we should encourage collaboration within and between governments in the region; between governments and civil society -- especially farmers' organizations and community associations -- and between governments and academia. The significant resources Canada now gives through CIDA and IDRC to initiatives such as CGIAR and BECA should be converted to support for rural development and agro-ecological strategies that will strengthen food sovereignty throughout the continent.

> *"(...) if you ask a Malian farmer what he needs, he will tell you that he needs a plough, a pair of oxen and water to irrigate his field. He will not tell you that he needs genetically-modified seed" (Ibrahima Coulibaly, Malian farmer).*[12]

We must remember that poor people are not guinea pigs. Highly-vulnerable communities whose resilience has been weakened are not good subjects for someone else's well-intentioned experimentation. It is always best to build from the community's own strengths rather than to introduce new uncertainties. As Ibrahima Coulibaly, a Malian farmer, stated before the Senate Committee hearing in March regarding the meddling of the World Bank and the IMF:

> *"We cannot understand how it is that poor countries are used as guinea pigs for approaches that are not even used in the countries that fund those institutions. This is unacceptable".*

We must recognize that Africa is a highly diverse region of enormous biological diversity and that one-size-fits-all policies simply do not work. Africa is a centre of origin for coffee and for a range of cereal crops such as sorghum, pearl millets, finger millets, fonio and African rice. It is a secondary centre of diversity for temperate crops such as barley and wheat. Rather than ignore this diversity -- a treasure that has been built up by thousands of generations of African farm families -- we should see in it what Africans see in it: the building blocks of food security and rural development. Moreover, Canada's food security, and for that matter, the global food system, is inextricably linked to the in-situ conservation and sustainable uses of agricultural biodiversity that is mostly found in the Third World. Let us not forget that North American barley was decimated in the 1950s in Canada and the US following an outbreak of yellow dwarf virus. These crops were only saved thanks to resistant genes found in an Ethiopian barley variety.[13]

We must ban Terminator technology nationally and support an international ban at the United Nations. In 2000, the UN Convention on Biological Diversity called for a *de facto* moratorium on the introduction of Terminator. Terminator (or, Genetic Use Restriction Technology) is a genetically-modified seed technology that renders seed sterile at harvest time thus forcing farmers to purchase new seed every growing season. FAO, CGIAR, governments such as India and Brazil, prominent scientists, and a number of international seed companies have all agreed that the technology should not be allowed. However, in February this year, the Canadian government delegation to a scientific subcommittee of the Biodiversity Convention had orders to try to end the moratorium and to "block" any other outcome. Canada's position surprised other governments and shocked the Canadian public. African countries, in particular, consider Terminator technology as a threat to food security. Since the Canadian government customarily insists upon "science-based" decision-making, it was especially distressing to see our government attempt to block scientific deliberations in search of a purely political outcome. If Canada is to have any credibility in proposing a "Pro-Poor" science strategy at the G8 meeting in July, it must amend its Terminator policy to support a ban on the technology within Canada and also oversees.

We must not continue to impose neo-liberal economic policies. We must be aware that the World Trade Organization, regional trade agreements, and bilateral trade agreements -- as well as the interventions of the World Bank and the International Monetary Fund -- can destroy the most constructive efforts to create food security and well-being. Canada

must direct its negotiators at the WTO and elsewhere to adopt not a “Pro-Poor” science strategy but a "Pro-South" trade policy. Canada can provide leadership in supporting policies that protect farmer livelihoods and local markets. Canada’s wheat board and supply management boards have been fundamental for Canadian farmers. Similar instruments existed in Africa until they were dismantled by IMF and World Bank’s structural adjustment measures. Canada can help rebuild these institutions and call for flexibility for countries to establish domestic agricultural policies that benefit their own citizens.

We must support democratic processes that empower countries to develop their own agricultural policies to ensure food sovereignty. When Mike Pearson helped establish the International Development Research Centre in the early '70s, most of the development debate centered on the concept of "Liberation Theology" - the notion that social change comes about through political negotiation and change led by people. Today, the aid debate -- such as it is -- is focused on "Liberation Technology" -- the whimsical hope that trickle-down technologies will somehow re-dress our social failures. As the Massey-Ferguson tractors rusting in the fields throughout Africa testify, there are no simple solutions – no silver bullets. There is no technological shortcut to social justice.

REFERENCES AND NOTES

[1] Mahovlich, F.W. Statement made during the Standing Senate Committee on Foreign Affairs hearing. March 8, 2005.

[2] King, D. 2005. Science to offer hope to Africa, in: *New Scientist*, March 19, 2005.

[3] Pearson, Lester B. 1972. *Mike: Memoirs of the Right Honorable Lester B. Pearson,* Volume 2, University of Toronto press, Toronto, p.110

[4] www.explore-government.com/government/T/Tanganyika_groundnut_scheme.html

[5] The four Centres of Excellence are: the International Livestock Research Institute (ILRI) and the World Agroforestry Centre (both in Nairobi, Kenya), the International Institute for Tropical Agriculture (IITA in Nigeria) and the West Africa Rice Development Association (WARDA) temporarily located in Nigeria. CGIAR, 2003. *Annual Report*, p.53.Available on-line at: www.cgiar.org/pdf/ar2003_section6.pdf

[6]Canada alone has contributed over US$ 381 million to CGIAR over the course of 31 years. In 2003, Canada invested US$ 22.8 million (including a grant for US$ 1.9 million from the International Development Research Centre- IDRC). Source: CGIAR, 2003, *Financial Report*. Available at: www.cgiar.org/pdf/ar2003_section7.pdf

[7] Mooney, P. 1998. Member of the Science Panel of the Third Systemwide Review of CGIAR.

[8] Carty, R. and V. Smith, 1981. Underdevelopment Assistance. In: *Perpetuating Poverty: the Political Economy of Canadian Foreign Aid*. Between the Lines, Toronto. Pp. 71-74.

[9] Monbiot, G. 1994. The Scattering of the Dead. *The Guardian*, November 23.

[10] Lane, C. 1991 Wheat at What Cost? CIDA and the Tanzania-Canada Wheat Program. In: *Conflicts of Interest: Canada and the Third World.* Between the Lines, Toronto. Pp. 133-160.

[11] The International Service for the Acquisition of Agri-Biotech Applications supports the transfer of agricultural biotechnology to developing countries. It is partially funded by such biotech giants as Dupont, Monsanto, and Syngenta. For more information: www.isaaa.org

[12] Coulibaly, I. 2005. Statement made during a hearing of the Standing Senate Committee on Foreign Affairs. March 8, 2005. Translated from French.

[13] It is estimated that the resistant strain saves farmers in the state of California alone US$ 150 million in pesticides each year. Source: Qualset, C.Q. 1975. Sampling germplasm in a centre of diversity: an example of disease resistance in Ethiopian barley. In: *Crop Genetic Resources for Today and Tomorrow*. Edited by By Frankel O.H. & J.G.Hawkes. Cambridge University Press, Cambridge. Pp: 449-453.