Answers to three questions from Alan Berg

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The chain of events set in motion by the process of publishing our tribute to Alan Berg in World Nutrition has played a role in, among other honors, his being honored in July, 2023 by the American Society for Nutrition at their annual meeting in Boston. Following his own inimical style, he sent to me and several others three questions, our answers to which will inform what he has to say in a talk he says he was "roped" into giving there on July 24. Below I present his questions and my responses.

— If you were the all-powerful King of Nutrition and could push a button for one thing to happen that would have the greatest positive impact on nutrition, what button would you push?

Institutional capacity building

You may recall that I presented a report to the SCN in 1989 on the efforts of the Swedish International Development Agency (Sida) to build INSTITUTIONAL nutrition capacity in four African countries. Sida had tried at the individual level earlier in Zambia. (The Zambians who received overseas nutrition training promptly got better paying jobs in banks and such.) Without access to both local "nutrition engineers" (a term coined in Berg, 1993, referring to those dedicated to and knowledgeable about how to make impacts on public health nutrition) and local government resources, the kind of broad and long-term work needed to really solve public health nutrition problems cannot be mobilized and countries are stuck with mainly the kind of "pilot projects" that most bilateral and other donors make believe provide the needed solutions. (Governments rarely can mobilize the funds, the vehicles, or the management capacity at community or district level to go to scale, no matter how exciting the findings of high-quality pilot projects may be.)

Sida then worked broadly to build local capacity (which worked in Tanzania and Zimbabwe but not in Ethiopia (where the work started too early when amino acid imbalance was thought to be the cause of most nutrition problems in Africa), nor in Zambia (where the main goal was actually just to build a national capacity for one project, nutrition surveillance capacity). This included working with those local institutions on gaining the needed political attention for mobilizing that local capacity in public health nutrition.

In Zimbabwe, the Ministry of Health Nutrition Department effectively mobilized other sectors and retained their involvement by ensuring they saw benefits of the project to their own work and got to help ensure that their own districts got their fair share of the resources available for several years from Sida. The World Bank took over support to the national nutrition program when Sida withdrew and once the Bank support ended, there was enough political pressure to force the national government to budget at least something for it.

In Tanzania, the World Bank offered in 1988 support to national vitamin A and iron deficiency projects at just the right moment because its Director General, Dr. Festo Kavishe, needed some rapid success stories to convince the government to invest in the Tanzania Food and Nutrition Centre (which received support from Sida from its founding in 1972 to 2000). Using Bank funds, Kavishe called experts and key personnel from each of the country's 20 regions to Dar es Salaam to week-long meetings on each of those issues. With TFNC involvement, they discussed and planned what approaches would be locally acceptable, most likely to work, and within the budget on offer. Both ended up being ingenious, integrating clever ways of implementing short-term pharmaceutical approaches with long-term food-based approaches. Unfortunately, as is often the case, such long-term nationally implemented approaches prove to cost too much or to test donor patience too much, so funding ended before the longer-term aspects could be successful. However, in the meantime, Sida and UNICEF teamed up to fund integrated short-term and long-term approaches to combat iodine deficiency and this worked, and did help TFNC to get increased government support. While TFNC has continued to do important work, it was weakened by losing its best "nutrition engineers" to international agencies.

— *What is the best-proven nutrition intervention that we already know works, but has not come anywhere near fulfilling its potential?*

Cooking and Gardening

These two skills were not touched on when I studied international nutrition in the 1970s. Few if any foresaw what a horrendous global epidemic of overweight and NCDs we would be affected with, even in low-income countries. Recently, we are also realizing, thanks largely to the work of World Nutrition Editorial Board member Carlos Monteiro (Monteiro, 2009), that ultra-processed foods are to a large extent responsible. But during the past several decades, knowledge, skill, and time for home cooking has declined in many settings. Interventions need to be developed to address this. I at least know little about how to achieve this and thus, apart from assisting mothers to prepare better food for toddlers, cannot cite examples to illustrate approaches that work.

Gardening can also contribute to solving this problem and in many other ways improving human health and nutritional status, especially in low-income settings. It is complex, but proven to work when local expertise, funding, and time are allocated to it. In particular, gardening on any large scale must be facilitated by people who know the local situation and ecology – with agricultural extension positioned to play a key role once countries begin training agents appropriately (i.e., beyond the usual training in staple grains and cash crops).

In much of Asia, knowledge of gardening is high, but other constraints may exist such as access to land, fencing, and modern seed. The best example I know of was implemented in ways that were intended to reach every family throughout several districts in NW Bangladesh that a 1982 Helen Keller International (HKI) survey had identified as most affected by vitamin A deficiency (Mannan and Greiner, 1999). Sida did a quasi-experimental evaluation which found it to be effective in improving the intake of the

cheapest sources of carotene among children under five (Greiner and Mitra, 1995). However, it did not reduce night blindness, which decreased significantly in both the experimental and comparison districts.) It never got attention because it was (1) though funded by Scandinavian and Dutch organizations, it was run locally, not by international NGOs with global contacts and public relations messaging, and (2) run, not by ministries of health or agriculture, but by the ministry of education (due to its initial focus on communication via media) which has little contact with the global nutrition community. Later, HKI, the Micronutrient Initiative, and others also supported large-scale projects involving gardening in different parts of the country (Greiner, 1997).

In much of Africa, knowledge of gardening is less common, but more likely to exist at community than family level. Whereas gardening can work at family level in Asia, in Africa it will often be wiser to invest in intervening at community or institutional (especially school) level. Careful planning and targeting can help overcome major constraints of lack of access to water and the stronger fencing needed in Africa to keep out animals. The best example (as documented in Tagwireyi and Greiner, 1994) is probably Zimbabwe, where it achieved widespread implementation at national level already in the early 1990s.

In the 1970s, in Dodoma Region, Tanzania, UNICEF supported the development of what seemed to me to be an appropriate African approach (much different than in Asia) to school gardens on land donated near the schools by the communities (Greiner, 2014). The local school caretaker (who lived in or near the school year-round) got training, tools, seed and some extra pay to tend school gardens and teach the students and community members what he was learning about it. 1/4 of each school garden was to be devoted to grain, 1/4 to beans, 1/4 to fruit trees, and 1/4 to vegetables. That food was cooked in UNICEF-provided pots and used to feed the students much of the year by community groups who rotated the cooking, cleaning up, and serving jobs. During periods when adequate food was available to provide school lunched, each student was required to bring to school with a bit of wood for fuel and their own plates and utensils. This approach alleviated the need to hire cooks and build school kitchens. This system not only provided more and better food than most students were likely getting at home, it allowed an extension of the school day (previously only run in mornings) and facilitated giving the students day-long national exams.

— What is the major constraint today to our seeing more nutrition interventions on a consequential scale? And how to overcome it?

Reaching the poorest of the poor

In an internal document, Sida once admitted that reaching the poorest of the poor was something they did not know how to do. Succeeding in doing so is important in the public health nutrition context because most problems of undernutrition and deficiency diseases tend to cluster among the poorest groups. If the poorest are not adequately reached, even seemingly successful interventions will be found to have a limited impact on such problems.

Sida supported the strengthening of the nutrition, adolescent girl, and early childhood development components of the Integrated Child Development Program in Tamil Nadu from the mid to late 90s. During two evaluations of that support, only having Indian anthropologists on the team helped us realize that the somewhat less poorer groups were misdirecting many of the resources away from those even poorer (Greiner, et al., 1998; Greiner, et al., 1999).

In 2014-5, I was involved with an evaluation of the Save the Children UK component of the Shiree Project ("Stimulating Household Improvements Resulting in Economic Empowerment") in Bangladesh. This was part of a larger evaluation for DIFD looking at its success in accelerating improved nutrition for the extreme poor in Bangladesh. Although it found limited positive changes in women's nutrition-related child feeding and care practices and no changes in child nutritional outcomes (including stunting and wasting prevalence), that surely only surprised someone not aware of the long duration and intensity of resource use needed to achieve such goals on a large scale among groups suffering from a wide range of constraints.

Nevertheless, as far as I experienced, it was successful in reaching the poorest of the poor. We are all well aware of the exploitation that wealthier people (everywhere) engage in, but perhaps not that projects intended for the poor are often sabotaged mainly by (1) local politicians who want to exploit them for political gain, giving jobs, food, etc. to friends and donors, and (2) as mentioned above, slightly less poor people in the same area who tend to be literate enough to get employment with said projects and naturally want to direct the resources available to their own families and communities. Shiree set up target beneficiary mechanisms that successfully avoided both pitfalls. It was rather expensive, but I assume somewhat cheaper ways of implementing it could be developed over time.

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