School Food Gardens in Multicultural Inner-city Settings

A model for maintaining gardening programs year round through school–community partnerships

Photos: Green Thumbs Growing Kid

by **Sunday Harrison**

MULTIFACETED, DEEP, AND RICH with learning possibilities, the relationship between people and plants goes to the source of our existence on the planet. Thomas Dewey, the famed educator, once said, "All you really need for education is a library and a garden." Yet working school food gardens are certainly much rarer than libraries.

Food gardening provides many opportunities for student engagement, from planting to harvesting (think life cycles, from seed to seed), with composting (nutrient cycles) and healthy eating in between. Food gardens can help to address concerns about children's diets; about community access to locally grown produce; and about a variety of environmental issues, from pesticide use to greenhouse gas emissions.

For many schools, the biggest obstacle to food gardens is the labor required to establish and maintain them. Teachers do not have the time to shepherd a vegetable garden through a growing season that includes a lengthy summer break. And while parents are vital partners, they come and go during the summer and someone must coordinate the schedule. Despite these limitations, our experience in cultivating school food gardens over the past eight years has shown that such gardens can be sustainable. What's needed is an approach that welcomes the community to participate in the garden and includes a dedicated garden instructor, someone who works with students and teachers during the school year and remains through the summer to organize and oversee community activities in the garden. To draw inspiration from Dewey's statement about school food gardens, garden instructors are like outdoor librarians, teaching a variety of "literacies" — environmental literacy, vegetable and fruit literacy, compost and soil literacy. In this article, I describe our own approach to school–community gardening, which includes summer care, and then suggest a model for funding the programs and instructors needed to make school food gardens sustainable over the long term.

Our non-profit organization, Green Thumbs Growing Kids, began cultivating a food garden at Winchester Public School in downtown Toronto in 2000 and has since expanded programming to four other schools. We also run programs in a local public greenhouse and after school at a local park. Each team of two garden instructors offers outdoor garden workshops, hosting up to ten classes each week during spring and fall. At each school, we provide a schedule of our availability, and teachers sign up for workshops on a first-come, first-served basis. We run formal class workshops in the garden but also have informal garden programs during



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the lunch recess. These informal programs allow children to discover the garden on their own, with guidance available but no particular curriculum objectives. Winchester School is blessed with a hot lunch program that includes a twice-weekly salad bar. This greatly enhances the school garden project, since children participate in growing the food they eat in the lunch program and help bring the food scraps from lunch to the garden for composting. This activity, as well as turning the compost, bringing produce inside to the lunch program staff, watering, and simply investigating seasonal changes in the garden, takes place in the informal program segments.

Formal programs usually involve seasonal activities, such as planting seeds and seedlings in spring, harvesting produce and planting bulbs in fall, and composting and mulching in both seasons. For these activities, students are divided into smaller groups so that each group can get direct hands-on experience and not have to wait long for a turn. Many teachers link these workshops to units of study in the classroom. Gardens are best used as a cross-curricular tool, so it is up to the teacher to link the hands-on learning in the garden to learning expectations for that grade level.

A benefit to having an outside (community) partner run the garden programs is that all teachers feel welcome to bring their classes to the garden and none feels the burden of maintenance. In addition, with two gardeners and a teacher, students always have adequate supervision. Some teachers use the garden as a natural setting for art or storytelling, and we are always working on lesson plans that are linked to curriculum and can be replicated with minimal effort. However, with our guidance, many teachers are happy to bring children into the garden for seasonal, hands-on activities regardless of the curriculum being taught in the classroom.

At Winchester School, garden programs extend through the summer, when the food garden opens to the community and day campers, drop-ins and families all become involved. A local family service agency offers a weekly morning program for families, and a youth leadership and employment program uses the garden as a training site intermittently throughout summer. Our role is to coordinate these various users. This arrangement ensures that people are available throughout the summer to harvest, weed and water the garden, as well as replant for fall harvest. For students, it ensures garden care and continuity from spring through summer to fall, when their spring-sown plants are ready to harvest.

The community's use of the school garden enhances both the school and the community. Ours is in a very diverse downtown neighborhood where the population density in some areas rivals that of Calcutta. For instance, one of our schools is surrounded by 22 apartment towers housing over 30,000 people on a one-square-kilometer city block. Many are recent immigrants, and together they represent over 100 countries and speak more than 160 languages. In some local schools, English is the second language of 75 percent of the students. Gardening with a school community of such astounding cultural diversity is a learning experience for us. As we work with the children through the school year and with their families in the summer, we are introduced to new plants and learn new uses for common plants. The diversity of our community has also guided us to see school food gardens as places for breaking down social barriers, addressing food insecurity, and making culturally significant foods available.

The school food garden gives immigrant families access to healthy activities within walking distance of their homes. It also provides an opportunity for them to spend time together, which is important for many parents who are reluctant to accept child care from strangers. Older children act as interpreters for their parents, and the garden becomes a place for adults to practice their English, share information about neighborhood services and make new friends. In summer, the family program may have participants working together on herbal remedies, or it may spill into lunchtime with participants sharing a fresh garden soup cooked in a solar oven.

The food garden at Winchester Public School occupies 1,000 square feet of productive land and is adjacent to 10,000 square feet of naturalized meadow that includes a teaching circle made of rock. The underlying soil is poor, so production is not extremely high; yet the student body of 400 children and their families do receive a supplement of fresh food throughout the growing season. Although our garden produce is shared and there are no individual plots, we try to cultivate the most popular foods and encourage

community volunteers to supply seed or parent stock for plants they wish to grow. This gives people an opportunity to practice and share their own gardening traditions.

While careful attention to planting a culturally diverse garden is essential to winning the support of parents in our school's community, a successful school garden depends first and foremost on the excitement and interest of the children. We have learned that cultivating kid-friendly flavors will ensure participation of children both in gardening and in eating fresh foods. (See sidebar "Food Gardening with Children and Families.")

School garden programs that succeed in reaching kids do so not because there is a bureaucracy in place but because of the passion, dedication and relationships among the individuals involved.

A model for cost-effective school food gardens

Even with a plan for summer care through community programming, the sustainability of a school food garden hinges on having a dedicated garden coordinator or instructor year round. Like school librarians, school garden instructors need support: they must be paid, and administrative support is required to keep things running smoothly. Yet advocating for school food gardens in an era of declining funding for public education may seem idealistic. After all, how can we ask for school gardens when roofs need repair, music programs are being cut, there are not enough textbooks, and administration and caretaking staff are reduced to a minimum? The funding model that we propose for school food gardens does not rely on the exclusive support of school boards. Rather, it draws on the strengths of three partners: the school system, various levels of government, and community agencies. We think of this model as a stable, three-legged stool.

The first leg of the stool is the school itself, which contributes in-kind support consisting of land, buildings, water, fencing, kitchen and staff. Even in a school serving low-income families, a certain amount of fundraising for the garden can take place in the school community. It is important to give parents the opportunity to take ownership in the program through financial contributions. We have drives to collect Canadian Tire money (currency-like coupons redeemable at a popular chain that carries garden supplies) to raise "money" and awareness; and we will soon be providing a membership option for parents who wish to be more involved and supportive of Green Thumbs Growing Kids. The amount contributed may end up representing only 5 to10 percent of the total budget, but this is money that represents real engagement by parents.

The second leg of the funding model is the taxpayer contribution: government agencies that would provide a substantial portion of the funding. The mandates of provincial or state departments of public education and health are well aligned with the educational (curricular) and civic (summer, after-school) benefits of gardens. School food gardens could be funded directly or through public health agencies that already have health-promotion programs in schools and in the community. (In most jurisdictions, health promotion is a well-developed set of ideas that address both human and environmental health.) Departments of environment and agriculture could also play important roles in fostering school food gardens, such as by providing curriculum resources that reinforce the benefits of eating locally grown produce. At the municipal level, many parks and recreation departments have summer programs and staff who could support school gardens during the summer season.

The third leg of the funding model is a community partner, a local non-profit or charitable organization that provides staff to operate school and community garden programs, coordinate volunteers and consult on garden design. This partner might be a local health-promotion group, community development agency or community gardening

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Garden Grazing: To Wash or Not?

Washing produce in the garden is not always essential if the plant parts being eaten are well above ground and no sprays, even "organic" ones, have been used. However, children are often concerned about washing. Therefore, school gardeners may wish to keep a hose on a light drip, not enough to turn into water play, but enough to rinse the foods before eating. From a health standpoint, it is a good opportunity to explain that fruits and vegetables purchased in a supermarket must always be washed before eating in order to remove any pesticide residues that might be present. These residues are proven to cause more harm to children's growing bodies than to adults, and it is important for children to communicate this knowledge among themselves. —*Sunday Harrison*

Food Gardening with Children and Families

GROWING A FOOD GARDEN will increase children's intake of fresh foods in two ways. Children will often eat hand-picked produce in the garden that they would not eat if it were offered on a plate. And if they feel the sense of ownership that comes from planting and cultivating the food, they are more likely to want to taste it, to enjoy it, and to request it at other times.

In the Green Thumbs programs, we make sure there are plenty of foods that can be eaten raw in the garden with just a quick rinse under the hose. Small fruits such as cherry tomatoes are great for this. They can be planted in early spring in a greenhouse or under lights, or purchased and set out as bedding plants in the spring. Most of the fruit is ready in September, adding to its value as a school food plant. Easily popped into the mouth and generally loved for their sweet tang, cherry tomatoes are packed with vitamins and antioxidants. Heirloom varieties are a rainbow of colors: green, pink, yellow, orange, striped, white, purple and even black. Being small, the cherry tomato is generally left alone by squirrels, and more often the problem is not losing them to scavengers but eating them all before they fall. They grow well in less than perfect soil, don't require crop rotation, and pair well with marigolds, which last long into the fall season and add color and joy to the garden. This pairing is thought to discourage tomato pests in companion-planting lore. The fruit is well known to all cultures and has great curriculum connections, not the least of which is the story of the tomato going to Europe from the New World and being thought poisonous, given its *Solanaceae* family ties with deadly nightshade.

To stimulate children's taste for fresh greens, a nice idea is a "sweet and sour" garden, which can be grown even in a small container. What appears to be just green leaves turns out to have the strongest of flavors! And these are flavors familiar to any child who has eaten sour candy. Use stevia (*Stevia rebaudiana*) and sorrel (*Rumex acetosa*) together, and allow children to sample tiny amounts of each — a pinch between thumb and forefinger is enough, as the flavors are intense. Mint is another winning child-friendly plant, easily cultivated in pots or corners of the schoolyard without full sun. It is easy to propagate in water and so comes readily into the classroom.

Over the years, we have also learned to select plants that enhance the multicultural learning opportunities in the garden and provide local families with culturally significant foods. The pumpkin leaf is used in cooking by Asian and South Asian cooks. Sweet potato, known mainly for its tuberous root, is also a provider of edible and quite tasty greens that are popular among Bangladeshis. Okra, callaloo (amaranth), broadleaf thyme, edamame (green soybeans) and various mustard greens, hard to find in stores but easy to grow, are used in Caribbean and Asian cooking and medicine. Hot peppers of various colors, shapes and Scoville heat units (a measurement of the hotness of the pepper) grace the garden, with its full-sun conditions. Beans and peas, onions and garlic, lettuce and spinach — all common to most of the ethnic groups in our school community — are always well-represented in our plantings.

Here in southern Ontario, our garden designs have to take into account winter temperatures that can be as low as –25 C and a frost-free growing season that runs only from May through October. Children sample the pretty red Russian kale, Italian (flat-leaf) parsley and other frost-tolerant plants in our garden, if only because it is exciting to come out in December and pick edible greens. Chives, for some reason, hold fascination for children's palates, and should always be included. Their edible flowers also make lovely vinegar in June.

A number of season-extending techniques can bring foods into the school earlier in spring and keep them coming right up until the winter break. Access to a greenhouse is ideal, but otherwise, planting under lights in March enables hot-weather crops like tomatoes and peppers to get an early start. Hardy varieties of root crops such as parsnips and carrots can be left in the ground all winter under mulch. Hardy greens such as spinach, kale and parsley can be picked off until December, and their flavors often improve with frost. Kale and some lettuces that are planted from seed in fall are ready to eat in the spring, as are the popular perennials chives and sorrel.

Our school food garden at Winchester Public School is adjacent to 10,000 square feet of naturalized meadow. The relationship of the native meadow to the cultivated food garden is very important. Edible wild plants (e.g., Jerusalem artichoke, milkweed, Virginia mountain mint) all deserve a place at the table beside the cultivated foods. The flowering grasses are close in appearance to cultivated grains, and are also edible. Wild strawberries cause major excitement in June. And the pollinators that buzz, fly and crawl in the wild meadow are quick to provide their ecosystem services to our food plants.

— by Sunday Harrison

organization. Being located in the community rather than in the school, this group is able to ensure continuous programming through the year and can look after a number of school gardens within a geographical area. The community partner can raise a significant amount of the overall budget through individual donations and private sector grants. An example of a community partner is our own group, Green Thumbs Growing Kids, currently a three-person gardening team that is supported by the Toronto Kiwanis Boys and Girls Clubs. With our current capacity, we serve two well-developed school gardens with deep, year-round programming, and play a supportive/animator role in three other schools. Recent funding from the Ontario Ministry of Health Promotion will allow us to develop pilot programs in two of our schools, which will be recognized as model inner-city programs.

This three-partner model could work in many different ways. School boards could request direct funding from departments of education for school food programs that include gardening, cooking instruction and food provisioning. Some of these funds could then be used to pay the salaries of the gardening instructors provided by the community partner group; in turn, the community partner would look for matching funds from the private sector. (We propose involving the private sector, but not allowing school gardens to become private enterprises.)

This model provides a way of conceiving of operations on a broad scale, but of course it must be flexible. School garden programs that succeed in reaching kids do so not because there is a bureaucracy in place but because of the passion, dedication and relationships among the individuals involved. There is no need for a cookie-cutter approach to school food gardens. The important thing is to design a system that removes the current barriers to their implementation. In the United States, there is a federal policy supporting school food; thus some states have successfully implemented school gardens even without community partners. In Canada, where no such federal policy exists, an interim solution is to engage the non-profit sector.

The state of California provides an example of large-scale implementation of school food gardens. With the launch of its "Garden in Every School" program in 1995, the state Department of Education integrated food gardening and cooking into curricula in an effort to improve students' nutrition, teach about healthy food choices, and forge links between school gardens, school cafeterias and local farmers. Funding for gardening and cooking instructors is obtained directly from the state Department of Education and from the federal US Department of Agriculture. School gardeners are paid for at least 30 hours per week, year round, a level of support that affords effective programming. For example, it is typical for only half of a class of students to go to the garden at one time. This means that it takes more time to cycle all students through the program, but it ensures that calm and order can be maintained during the hands-on gardening activities.

For those of us who do not have the 12-month growing season that Californians enjoy, work schedules can be adjusted to the seasons. Many activities related to food gardening can be brought inside during cold weather, such as preserving, cooking, vermicomposting, garden design and planning. Where resources permit, greenhouse and hoop house operations can extend the garden season through the winter. Winter is also an ideal time for garden instructors to design outdoor lesson plans and refine their evaluation and reporting systems. Finally, gardening instructors may wish to take their vacations in winter, since they'll be busy operating programs throughout the summer.

It takes time, effort and funding to implement sustainable food gardening programs in schools. However, with political will — and stamina on the part of healthy-food and environment advocates — any jurisdiction can design a garden program based on the principle of shared responsibility by school and community. It is in the public interest to teach children where food comes from and to instill in them the knowledge and desire to make healthier food choices, both now and in the future. As for cost, it is our contention that school food gardens ultimately save more money than is spent to implement and operate them. Growing food locally promotes both healthy eating and a healthy environment. In Canada, the direct cost of treating obesity and related health problems is estimated to be at least $1.8 billion per year,[1] and in the United States it is up to $78.5 billion.[2] Smog kills 1,500 people each year in Toronto alone. By addressing the root causes of obesity and environmental pollution (and this includes industrial agriculture), we save lives and health care costs and increase productivity. Education for sustainability must include food systems, and how better to study food sustainability than to observe and practice food production on school grounds? Too often, we ask "What will it cost?" What we should be asking is "What is the cost of not integrating food and environment into the education system?"

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Notes

1. Hanan B. Sokar-Todd and Arya M. Sharma, The North American Association for the Study of Obesity, "Obesity Research in Canada: Literature Overview of the Last 3 Decades," *Obesity Research* 12 (2004), pp.1547-1553, <www.obesityresearch.org/cgi/content/full/12/10/1547>, accessed March 7, 2008.

2. U.S. Department of Health and Human Services, Centers for Disease Control, <www.cdc.gov/nccdphp/dnpa/obesity/economic_consequences.htm>, accessed March 7, 2008.