



Improving school feeding through school farming: The case of Nakuru town, Kenya

School feeding as a development tool

Providing a child with a daily nutritious meal at school is seen as a simple and effective way of improving not only school attendance and retention rates but also children's nutritional status and health. In this way, school feeding falls within the ambit of three of the Millennium Development Goals, namely to eradicate extreme poverty and hunger, to achieve universal primary education, and to promote gender equality and empower women. This forms the backdrop of the global school feeding programme of the World Food Programme (WFP), which was reaching more than 21 million children in 74 countries in 2005.

However, a major obstacle to a well-functioning school feeding programme, particularly in an urban setting, is lack of funding. Food usually has to be purchased at the market, which is expensive. As a result, many parents are not able to pay for school lunches. As a result of the sharp rise in food prices over the last few years, the situation has only become worse. This is where school farming, as a crucial factor for a successful school feeding programme, comes in. If a school is able to produce part or most of the ingredients it requires, the cost of producing meals will be much lower. This is the philosophy

of the *Gardens for Life* project that is currently underway in the UK, India, Kenya and The Gambia. An additional advantage is that pupils learn to grow crops using organic farming methods, which raises their environmental awareness and is potentially beneficial for the urban environment.



Pupils queuing for lunch at a public primary school in Laikipia District that participates in the *Gardens for Life* project [Photo: Dick Foeken]

In 2006, the African Studies Centre and the University of Nairobi, carried out a study in Nakuru town (ca. 300,000 inhabitants in 2010), Kenya, which aimed at three issues: (i) the practice of school feeding and school farming; (ii) the extent to which school farming contributes to school feeding programmes; and (iii) school farming's potential to improve school feeding. Of Nakuru's 123 primary and secondary schools at the time, 116 were covered (71 primary schools, 42 secondary schools and 3 schools with both primary and secondary education).

School feeding in Nakuru

The large majority (85%) of the schools in Nakuru had some kind of school feeding programme in 2006. A fifth of the primary schools had no feeding programme, compared with only three (out of 42) of the secondary schools. School feeding appeared also to be less common among public schools (79%) than among private schools (94%; half of which were not boarding schools). The most common reasons for the 17 schools *not* having a feeding programme were lack of interest or money on the side of the parents and/or lack of the necessary funds on the side of the school.



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All school-feeding-offering schools except one provided lunch for their pupils and almost all provided tea at morning break. More important, however, is the question which pupils are eligible for the meal(s) and which ones actually benefit from it. In the schools where meals were served, almost all the pupils were in principle eligible but this did not mean that they all actually received lunch or a snack. For instance, in 40% of the primary schools *all* pupils were eligible, but in the majority of the schools (57%) only pupils whose parents could pay for school meals were entitled to them (Table 1). The latter percentage was even much higher (83%) in the *public* primary schools, i.e. the category of schools where the most vulnerable children in the low-income neighbourhoods are found. In a quarter of these schools, however, free lunch was provided to the neediest children (e.g. orphans).

Table 1 Pupils eligible for school feeding, by school category

Category of pupils	All schools (N=97)	Primary schools (N=58)	Secondary schools (N=39)
- All pupils	63%	40%	97%
- Those able to pay	35%	57%	3%
- Orphans/neediest children	10%	17%	0%
- Certain years only	3%	5%	0%

Anthropometric measurements – height and weight – were taken from the pupils in Standard 1 (first class of primary school). Analysis of these data showed that school lunch did offer positive nutritional benefits to these children. This was particularly notable in lower socio-economic areas where there is still a clear need for school feeding in public schools.

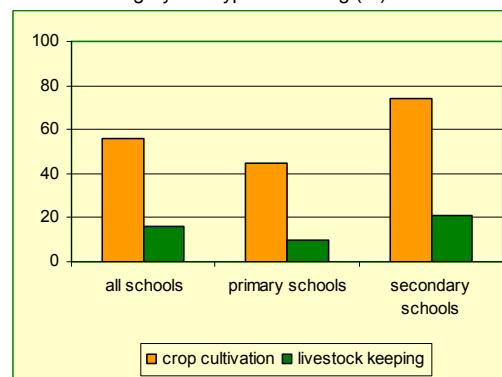
School farming in Nakuru

School farming appeared to be quite common in Nakuru town (be it less common than school feeding), crop cultivation in particular and especially at secondary schools (Graph 1). All except 4 of the 65 crop-cultivating schools had their *shambas* in the school compound. Plot sizes in school compounds varied considerably, the smallest *shambas* measuring about 0.1 acre, the biggest ones 5 acres, with the average being about 0.8 acres.

In 2006, 16 different crops were recorded during the survey. The most popular ones were kale (known as *sukuma wiki*), beans, maize, cabbage, spinach and potatoes. The use of inputs for these crops was quite common, including irrigation. This shows not only an awareness of the advantages of using inputs but also the seriousness with which schools undertake farming.

In three-quarters of the crop-cultivating secondary schools, the Agriculture Class was responsible for the crops and carried out most of the work. In most of the primary schools, the school itself was responsible for crop cultivation. How-

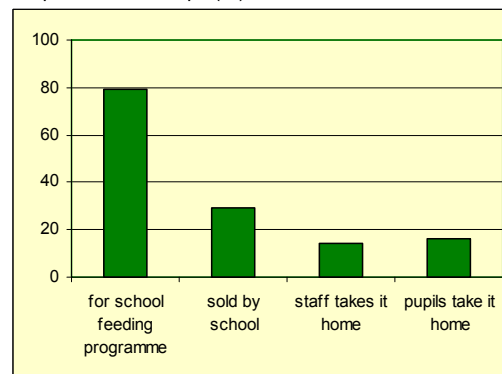
Graph 1 Prevalence of school farming, by school category and type of farming (%)



ever, most of the work was divided among teachers, school workers and to a lesser extent hired labour. In several primary schools, pupils also performed some activities.

Graph 2 indicates how the produce was used. In most schools, the produce was destined for the schools' feeding programmes. In fact, in most of these schools, the entire produce was used for school meals. Produce was also sold, mostly by primary schools, to school staff and parents or some of the school's neighbours. Finally, in some schools, either the school staff or the pupils took (part of) the produce home.

Graph 2 Use of crops (%)



The most often heard constraint in relation to crop cultivation was inadequate rainfall – and this probably accounted for why the large majority of schools practiced irrigation. Other constraints included pests and diseases, lack of land, destruction of crops by wildlife and livestock, lack of security (or theft), and lack of capital and inputs. The availability of land for crop cultivation is an important asset for schools in town, where land is much scarcer than in the rural areas. About half of the schools mentioned that they did not have enough land to grow crops. This was also the most frequently mentioned reason for the non-crop-cultivating schools to abstain from growing crops.

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As for livestock keeping, it was more common among secondary than primary schools. Cattle were the most commonly kept animals (in 11 schools). Milk was their most important product. In all cases, some of the milk was used for the teachers' tea and some was sold. In nine schools, the milk was also used for the pupils' feeding programme.



Crops suffering from drought in the *shamba* of a public primary school in a low-income area of Nakuru [photo: Sam Owuor]

School farming in relation to school feeding

The study revealed several indications of the strong links between school farming and school feeding. The use of the crops for the schools' feeding programmes mentioned above was one of them. Other indications are: • most schools started farming with an eye on the school's feeding programme; • school feeding figured prominently among the perceived benefits of crop cultivation; • more than half of the schools in Nakuru practiced school farming *and* had a feeding programme; and • almost all schools cultivating crops also had a feeding programme. As for livestock, all 18 schools keeping animals had a feeding programme as well. These links were stronger at secondary schools than at primary schools, because in the former schools crops were almost solely grown for the school's feeding programme, while in primary schools a substantial part of the crop was sold (or sometimes given away).

It was estimated that the 27 schools cultivating kale were on average able to use the crop for their lunch programmes for about six months of the year; nine schools even produced sufficient kale for the whole year (seven of these being primary schools). Maize lasted on average for almost five months and beans and cabbage for over three months. One school had enough self-grown beans for the whole year, while three schools had the same for maize and one for cabbage (these were all primary schools). In general, primary schools could manage for longer with their own home-grown crops than secondary schools.

In short, the study revealed that some Nakuru schools did realize an agricultural output in such

quantities that it substantially supported these schools' feeding programmes. However, these were exceptional cases.

The potential of school farming for school feeding

In an internal memo in 2007, the Municipal Educational Officer of Nakuru urged public primary schools to find a way of providing all pupils with lunch to avoid a situation where pupils would go hungry during the lunch break. For most primary schools, this has been (or still is) a difficult and challenging task. And since issuing the memo, it has become even more problematic due to the steep and rapid rise in food prices that has resulted in an increasing number of parents no longer being able to afford school lunch for their children. As said, this is where school farming comes in: if part of the ingredients can be produced by the school itself, costs for the feeding programme can be kept low and more parents will be able to afford school meals. However, a number of fundamental conditions have to be met, including sufficient land, sufficient water, professional support and leadership.

- *Sufficient land.* 'Not enough land' was by far the most frequently mentioned answer to the question about why *non-crop-cultivating* schools did not grow crops, while almost half of the schools that did cultivate crops saw their 'lack of enough land' as a serious constraint. Yet, even though the compounds of some schools in Nakuru were indeed (too) small for a crop garden, the data suggested that for most schools the availability of land did not have to be a major constraint to start or expand crop cultivation. The example of Nyandarua Boarding Primary School in Nyahururu (participating in the *Gardens for Life* project) shows that even a plot as small as one acre can be very rewarding in terms of yield, feeding capacity and (saving) money.



The well-tended *shamba* of a public primary school in Nakuru participating in the *Gardens for Life* project [photo: Dick Foeken]

- *Sufficient water.* By far the most frequently mentioned problem with crop cultivation concerned the climate: lack of rainfall, irregular rainfall, and drought. Nakuru has a relatively dry cli-

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mate, so most schools face problems with watering their crops. Not every school has its own borehole (only four schools did), but catching rainwater and storing it in tanks – as was practiced by 20 schools – shows that this problem can be solved as well.

- **Professional support.** The sudden disappearance of an NGO called SENVINET created a vacuum in terms of professional assistance. The role of the extension officers from the Ministry of Agriculture (MoA) has been marginal, judging by the fact that only two schools had received assistance from MoA extension officers in 2005. It is very important that this vacuum be filled.

- **Leadership.** School farming is usually the responsibility of one teacher. This means that the success of the school's farming activities is not only dependent on factors such as land, water and support, but also on individual qualities like a teacher's organizational skill, enthusiasm, dedication, etc., as an example in Nakuru illustrated.



The Environmental Club and its teacher of a public primary school in a low-income neighbourhood of Nakuru [photo: Dick Foeken]

Conclusion

Respondents in many schools indicated the wish to start a feeding programme or to expand the provision of lunch to *all* pupils, the major obstacle being the high prices of food at the market, though. On the other hand, the study showed that there *were* schools where *all* the pupils received lunch on a daily basis at an affordable price. These schools have been able to reach a relatively high degree of self-sufficiency in their feeding programmes through their school farming activities. These schools can serve as an example for others regarding school farming. As the study indicated, constraints in terms of land, water, support and leadership can be overcome. It is important to realize that many schools could benefit from the positive experiences of other schools, namely the best performing schools in the *Gardens for Life* project and also some successful schools in Nakuru town.

Key publications

Foeken, D., S.O. Owuor & A.M. Mwangi (2007), *School farming and school feeding in Nakuru town, Kenya: Practice and potential*. Leiden: Afrika-Studiecentrum, ASC Working Paper 76. [Full text on <https://openaccess.leidenuniv.nl/dspace/bitstream/1887/13008/2/ASC-074138723-065-01.pdf>]

Foeken, D., S.O. Owuor & A.M. Mwangi (2010), *School farming for school feeding: Experiences from Nakuru, Kenya. FACTS Reports*, Special Issue 1/2010: Urban Agriculture. [Full text on <http://factsreports.revues.org/index563.html>]

Foeken, D., S.O. Owuor & A.M. Mwangi (2010), *Urban school farming to improve school feeding: The case of Nakuru town, Kenya. Children, Youth and Environments* 20(1): 276-300. [Full text on http://www.colorado.edu/journals/cye/20_1/20_1_11_UrbanFarming.pdf]

Foeken, D., W. Klaver, S.O. Owuor & A.M. Mwangi (2010), *Market forces threatening school feeding: The case for school farming in Nakuru town, Kenya*. In: M. Dekker & R. van Dijk, eds, *Markets of well-being. Navigating health and healing in Africa*. Leiden/Boston: Brill Academic Publishers, pp. 79-108.

Programmes focusing on local agricultural production for school feeding

The *Gardens for Life* project is run by the Kenya Youth Education and Community Development Programme (and is also active in India, The Gambia and the UK). Its main objectives are to reintroduce agriculture into primary schools as an essential and practical method of equipping children with easy and useful skills, and to encourage schools to grow crops for pupils' lunches. <http://www.edenproject.com/gardens-for-life/>

NEPAD's *Home Grown School Feeding Programme* works in collaboration with the Millennium Development Task Force on Hunger, WFP, UNICEF and the FAO. This initiative links school feeding directly to agricultural development through the purchasing of locally produced food, school gardens and the inclusion of agriculture on school curricula. http://www.africa-union.org/root/UA/Conferences/2007/fevri/REA/13-14%20fev/NEPAD_Home_Grown_School_Feeding_Pogramme.doc

The *School Feeding Initiative Ghana-Netherlands* (SIGN) supports the US\$ 212m Ghana school feeding programme (Government of Ghana 2006). The programme aims to stimulate local agricultural production by providing a stable market in the form of schools that buy produce for their feeding programmes, thus improving the nutritional status of all pupils. <http://www.sign-schoolfeeding.org/>

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