

Pollution and Health Problems in Horticultural Production in Harare:

The need for improved quality assurance systems



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Introduction

High inputs to peri-urban horticulture around Harare are thought to be contaminating the food chain and deteriorating the production resource base. This poses severe health risks to consumers of contaminated produce. The sources and levels of heavy metal, pesticide residue and pathogenic contamination are being determined in a three year DFID CPHP funded project. Recommendations will be made of safe production practices and of the most appropriate market-mediated and public sector mechanisms to improve food quality assurance. This will take into account the likely impacts on the livelihoods of major poor producer and consumer groups. Continuous interaction with stakeholders will promote awareness and facilitate uptake.

Objectives

To develop strategies to improve food security of poor households through improved quality of horticultural foods and better access to markets.
To identify pathways and propose guidelines for an improved food quality production-consumer chain and reduced contamination of the resource base and products thereby improving livelihoods of smallholder horticulture producers and reducing health risks of producers and consumers.
To enhance access of smallholder producers to markets and increase consumer confidence.

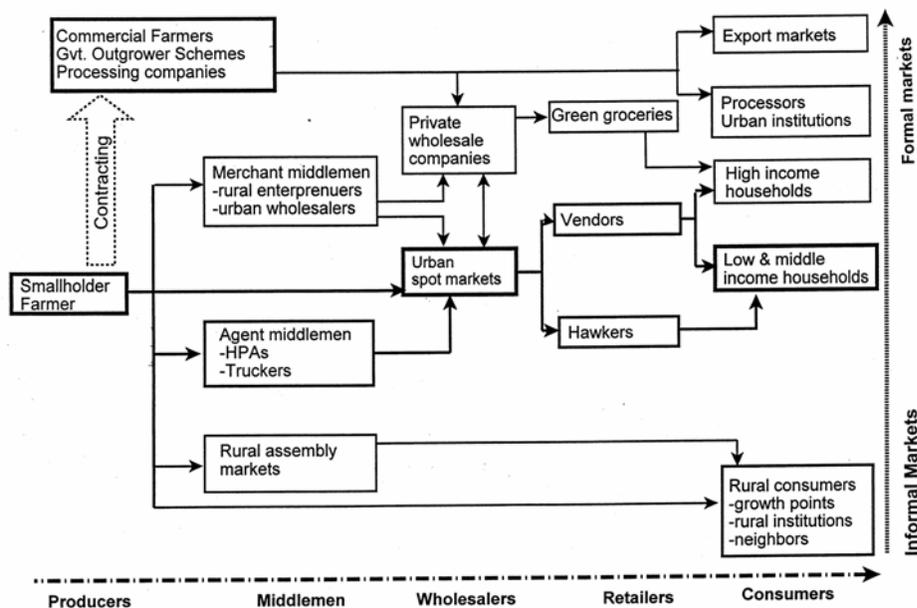


Fig. 1 Organochlorine residues (ppm) in tomato and leafy vegetables sampled along Mukuvisi River, Aug. – Dec. 2000. Percentages show proportion of samples (150 in total) in which residues were found.

Harare Horticultural Markets

Most smallholder horticultural produce sold in Harare and Chitungwiza is grown in Mashonaland East & distributed through Mbare Musika market e.g. 280,000-350,000 tons p.a. (120,000 t from smallholders). **Mbare market** encompasses producers', wholesale & retail sections. Most smallholder production is sold at the daily producers' market, where prices can fluctuate dramatically both within & between days & where transactions are impersonal. The wholesale market receives much of their produce from regular suppliers (large-scale, commercial producers) & have regular customers. A large number of **informal vendors** operate in all areas of Harare. Many appear to be poorer than either the average producer or consumer. Women are predominant.

Survey of Peri-Urban Horticultural Producers

280 producers were interviewed in Seke, Chihota (peri-urban) & Epworth (urban) in June-July 2001. From their responses, we estimate that horticultural producers in Seke and Chihota collectively provide around 15% (18,300 tons p.a.) of total smallholder horticultural supplies to Mbare, along with 2,600 tons p.a. to Chikwanha. Respondents overwhelmingly felt that buyers were interested in **“search”** attributes of horticultural produce, rather than **“credence”** attributes such as produce safety. The dominant means of ensuring the desired attributes were more fertiliser and pesticide applications. Despite difficult economic conditions, 85%+ of producers of rape, covo, viscose, tsunga and tomatoes reported some application of inorganic fertiliser with a few nitrogen application rates well in excess of recommended levels.

Attribute	No. respondents	Attribute	No. respondents
Dark green leaves	213	Good taste when cooked	7
Big or long leaves	200	No purple / yellow colour	7
No aphids or spots	90	Low input	5
No holes or scratches	70	Other	3
Fresh	25		

Table 1. Attributes of leafy Vegetables felt (by Producers) to be valued by Customers

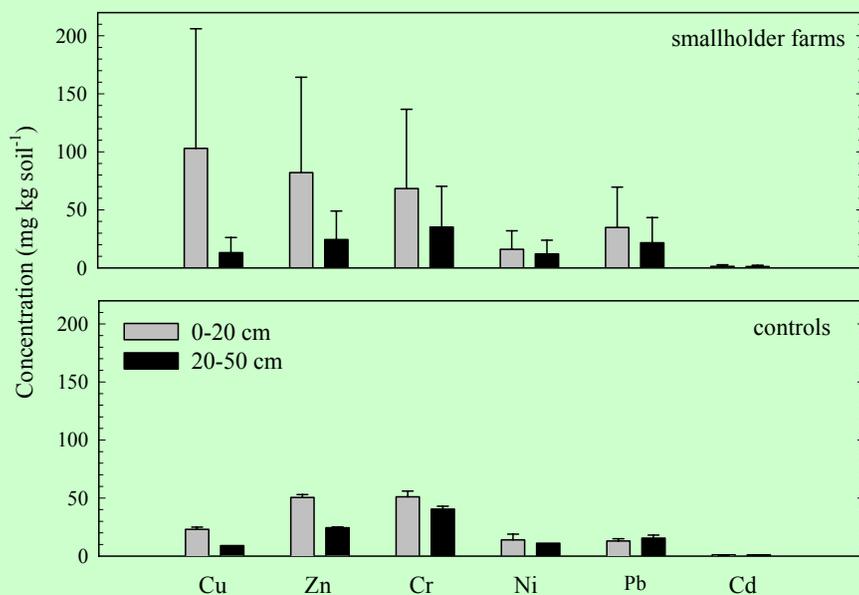


Fig. 2 Concentrations of heavy metals in soil from smallholder vegetable plots at Crowborough Sewage Farm.

Awareness Survey of Consumers in Low-Middle Income Areas of Harare

400 consumers (76% women, 61% from modestly paid formal employment.) were interviewed at markets/shopping centres.

Leafy vegetables and tomatoes were by far the most important horticultural products bought mostly from **street stalls** because of their price and convenience, despite 167 respondents identifying them as the type of outlet most likely to be associated with health risks.

Quality of produce, **price** and **familiarity** with the retailer were cited as the most important reasons for **repeat dealing**. This suggests that reputations matter – a “plus” if market-based food safety assurance is to be encouraged.

120 respondents (30%) claimed that one or more members of their household had experienced some illness, attributed to horticultural produce, within the past year alone. Respondents identified marketing activities (nature and location of sales points, handling etc) as the main source of problems. However, a total of 57 respondents also noted the possibility of health problems caused by pesticide abuse, excessive fertiliser application or use of dirty irrigation water.

Most respondents wash and/or boil their produce as a means of ensuring its safety for consumption and 45 respondents called for more hygienic practices from retailers, whilst 90 called for the **public action** in the form of setting and monitoring of safety standards at markets.

Future work

Continued monitoring of contamination and practices at production sites and retail outlets.

Second consumer survey to assess willingness to pay for safe produce.

Discussions with traders throughout the marketing chain to increase understanding of reputation mechanisms and to explore perceptions of market advantage from guaranteeing safe food.

Assessment of potential for market-mediated approaches to food quality assurance in horticultural chains serving poor consumers.

Recommendations of most appropriate balance of market-mediated and public sector mechanisms to improve food quality assurance, taking into account feasibility and the likely impacts on livelihoods of major producer and consumer groups.

Acknowledgements

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