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# Urban Agriculture, Social Enterprise and Box Schemes in Cape Town

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## Urban Agriculture, Social Enterprise and Box Schemes in Cape Town

### **Abstract**

The social benefits of urban agriculture, such as improving food security. developing a sense of community and promoting ecological conservation, are well documented in the literature and in practice. However, in order to contribute to sustainable economic development, urban agriculture must also present viable business opportunities. This study set forth fresh produce box schemes operated via a social enterprise model as a context-appropriate, economically viable business opportunity for promoting inclusive socioeconomic development. Using mixed-methods, three box scheme business models were compared and a survey of 354 current subscribers to box schemes in Cape Town was analysed. Qualitative analysis of the box scheme models reveals potential strengths and weaknesses of each enterprise. Survey results presented here indicate that participating households source half their fresh produce and a quarter of their groceries overall from box schemes, demonstrating consumer demand and establishing a market. The survey data further show the social enterprise box scheme to capture a competitive portion of this market and deliver as much consumer satisfaction as other business models, suggesting that this type of enterprise can hold its own in the market. The findings presented in this paper suggest that a social enterprise box scheme is a viable model for urban agriculture-related socioeconomic development in Cape Town.

#### 1. Introduction

Urban agriculture has been positively linked to improvements in food security, income poverty, social marginalisation, economic development and ecological conservation. Broadly defined as 'the cultivation, processing, marketing and distribution of food crops and products in an urban environment and for the benefit of urban residents' (City of Cape Town, 2007:3), urban agriculture addresses many of the pressing socioeconomic issues faced by cities. Where social issues are concerned, it has been demonstrated that urban agriculture projects reduce hunger and malnutrition by providing the urban poor with greater access to healthier, more affordable foods (UNDP, 1996). This in turn reduces household expenditures on food - which often make up the largest portion of urban household budgets, especially for low-income residents (Ruel and Garrett, 2004) – and frees up scarce cash resources for other needs (Foeken, 2006). Given that city dwellers are highly dependent on cash income to pay for household expenses, urban agriculture's positive contribution to resource allocation is meaningful, especially where high levels of unemployment and rising food prices are complicating factors (Battersby-Lenndard, 2011).

Urban agriculture promotes economic development primarily by creating small urban farming businesses focused on growing and selling food, but also via ancillary enterprise opportunities such as food transport or delivery services, compost production, seedling propagation or sale of value-added food products like chutneys or dried herbs (Walker, 2011). It may further contribute to cities' poverty reduction strategies by providing marginalised urban farmers with income generation and employment prospects linked to small-scale food production (Hovorka et al., 2009). This is especially meaningful in a South African context when we recognize that chronic poverty and social exclusion are closely linked, with disadvantaged groups being excluded from opportunities to earn a living, access the labour market and build assets (Adato et al., 2006).

Beyond its tangible impact on physical and financial well-being at the household level, the practice of urban agriculture is also a source of empowerment, leadership development and social cohesion in the community (Dunn, 2010). Particularly in situations where historical inequalities persist, urban agriculture has been recognized as having a role in redressing societal imbalances related to gender, race and poverty (Battersy-Lennard et al., 2009; Phiri, 2008) not only through community capacity-building, but through increased public attention to fundamental issues of social equity and redistribution such as land reform, the need for formal engagement with the informal economy and institutional support of historically oppressed communities.

When urban agriculture is undertaken in a development context, its evidenced benefits and opportunities can be leveraged to maximize its socioeconomic impact for cities and the people inhabiting them. However, the success of development-oriented urban agriculture programmes is largely dependent upon planning for sustainability from the outset. The concept of sustainable development requires attention to the interconnectedness of the social, ecological and economic systems in which we live (Barbier, 1987) with the general idea being that humanity depends upon the environment to live, society exists within the environment and the economy is a product of society (Hopwood et al., 2005). Therefore, sustainable approaches to poverty alleviation should aim to simultaneously promote economic growth, social equity and resource conservation through participatory, adaptive and capacity-strengthening processes (UNDP, 2003). At the municipal level, sustainable development requires new entrepreneurial initiatives focused on investing in the local environment, employing people while improving their resource bases and strengthening responsive local institutions (Marsden and Smith, 2005).

It has been demonstrated that the practice of urban agriculture addresses key social and environmental issues; what is less well established is its economic Many development strategies fail to give adequate attention to the real opportunities and constraints posed by the role of market forces in poverty alleviaton (Dorward et al., 2003). Central to sustainably expanding urban agriculture's impact, therefore, is identifying and growing a viable, contextappropriate market for urban agriculture products. This means that there must be a clear understanding of local market supply and demand and how products move 'from seed to table' in order to create meaningful, durable and mutually beneficial linkages between urban farmers and urban consumers (Dubbeling et al., 2010). Over the past twenty years, there has been a growing consumer trend in industrialised countries of preference for local, organic produce, but this niche market has only recently begun to develop in the global South (Haldy, 2004; Bienabe et al., 2011). The emergent growth of this trend in South Africa represents an opportunity on which urban agriculture enterprises can capitalise.

Sustainable development thinking further necessitates undertaking urban agriculture enterprise development through a business model that explicitly aims to produce both social capital as well as financial gain through its commercial activities. Known as a social enterprise, this type of business markets products or services that directly and innovatively address a social need using sound business principles, and equal priority is given in the enterprise's mission to both social value creation as well as profit generation (Deraedt, 2009; Urban, 2008; Weerawardena and Mort, 2006). A social enterprise may also provide a link between the local informal and the wider formal economies as a result of its

unique position in the community (Fonteneau and Develtere, 2009). This is particularly relevant given the size and scope of the informal economy in developing country urban areas (Hobson, 2011) and the challenges that marginalised informal actors face in accessing formal markets in South Africa (von Broembsen, 2010). In this way a social enterprise model could explicitly promote a balance between social and economic objectives, enabling urban agriculture enterprises to contribute to inclusive development while generating enough income to sustain and expand their activities.

A box scheme is a form of direct agricultural market typically characterized by short links between food production and its proximal consumption through the sale of locally-grown organic produce directly to consumers on a regular subscription basis (Haldy, 2004). In the context of development-oriented urban agriculture, box schemes operated via a social enterprise business model could expand urban agriculture's impact by engaging low-income farmers in marginalised urban communities to grow food crops and providing them with a suitable local market for their agricultural products.

Research on box schemes is largely limited to developed country settings, with most studies conducted on schemes in the United States, Europe, Asia and Australia (Brown et al., 2009; Haldy, 2004; Torjusen et al., 2008). Results on consumer profiles and motivations, as well as opportunities and limitations related to box scheme enterprise development, generalise only in relation to the global North. The question remains, then, whether box schemes represent an economically viable development strategy in an African context. Training its lens on Cape Town, this paper aims to examine:

- Whether box schemes can capture a significant portion of household expenditure on fresh produce
- Whether a social enterprise model can compete with traditional business models

Data from the study are used to explore the dimensions of consumer demand in the Cape Town market and to investigate the viability of a social enterprise model for sustable development-orientated urban agriculture enterprise.

## 2. Benefits of Vegetable Box Schemes

In this research, 'box schemes' refer to a specific production-market value chain in which a variety of fresh vegetables, fruits and herbs are sold direct to the public through an organised intermediary. A modest range of produce and a minimum of post-harvest packaging lends itself to resource-scarce but organised and market-oriented farmers (Florchinger et al., 2007). Given the spatial and logistical constraints on growing large volumes of food in an urban setting, selling to traditional retail markets is unrealistic for many urban farmers. Particularly during early stages of participation, box schemes' flexibility in dealing with crop failures, variable quality and unpredictable harvests is a real benefit to farmers (Hoekstra & Small, 2010) since customers are generally prepared to accept a varying product from week to week. In this way farmers are able to fine-tune their production skills without negatively impacting consumer satisfaction. Box schemes offer farmers a sense of security in participation due to the low levels of risk, regularity of cash income and relative protection against fluctuations in market prices and seasonality (Bolwig et al., 2010; Hoekstra & Small, 2010). For disadvantaged urban farmers, box schemes represent a potentially steady income stream, employment and skillsbuilding opportunties, and inclusive market access otherwise unavailable to them, all within a context-appropriate product that they are capable of producing.

For consumers, box schemes provide fresh, organic produce at more affordable prices than those generally found in retail markets. Emerging niche organic markets usually mean limited availability and higher prices for consumers who prefer organic foods (Haldy, 2004), so organic box schemes can offer greater access to a less expensive product. Where concerns about origins of food and ecologically responsible food choices are relevant, vegetable boxes are 'expressions of proximity' that offer consumers a sense of commitment and contribution to their local community and environment (Hinrichs, 2000: 298). This preference for locality is anticipated to grow as rising oil prices mean higher long-distance transport costs, which in turn contribute to higher food prices (Dubbeling et al., 2010). Consumers are increasingly willing to choose food products that are produced locally in alternative markets, both out of an individual commitment to personal health and the environment, and because of competitive prices for equivalent or superior quality products than those available in retail establishments. The community dimension of box schemes is also salient in consumers' motivations as they develop a connection to other actors in the local food system (Torjusen et al., 2008), often a welcome alternative to the impersonality of retail supermarkets.

For city planners and development practitioners, box schemes may form part of a local food system and offer many of the ecological benefits typically associated with urban agriculture: contribution to improved land use and biodiversity; reduction of cities' carbon footprints; and recycling of organic wastes where composting and greywater usage are practiced. Furthermore, box schemes present cities with an opportunity to develop small business enterprises that can create jobs for the unemployed, through growing food crops as well as through other food production activities, such as bottling preserves or raising chickens for eggs to sell alongside produce.

From a social development perspective, box schemes offer a unique opportunity to promote a sense of connection through the commonly-held medium of food. Purchasing and consuming food is an economic activity embedded in complex social and cultural values; as a type of direct agricultural market, box schemes require people to 'congregate and associate' (Hinrichs, 2000: 298) and present opportunities for interaction and knowledge exchange around our shared identity Where communication and participation between producers and consumers are an active pursuit of the business, box schemes have been shown to influence consumers' attitudes towards their community, promoting mutual understanding and social empathy for others in the food system, as well as to have a measureable impact on household food consumption habits (Torjusen et al., 2008). By participating in a vegetable box scheme, consumers not only open their households to an alternative food market, they may also invite a relationship between the growers and their own families. Although not explored further here, when this opportunity for fostering social connections is recognised, box schemes could be a vehicle for creating more cohesive urban communities.

### 3. Methods

Given time and resource constraints, it was not possible to implement the study with sample sizes large enough to present an all-encompassing picture of the entire box scheme market in Cape Town (especially in light of the fact that there is no existing data in South Africa upon which to build). Instead, the study was designed as a pilot investigation into the opportunity that box schemes present for development-orientated urban agriculture. Therefore, the scope of the study was suitably limited to three box schemes, their current customers and two urban

farmers<sup>1</sup>. A mixed-methods approach to data collection and analysis was employed.

Out of twelve box schemes identified in the Cape Town metropolitan area in February 2012, three were selected for this study. The schemes included met the criteria of having been an established business for at least three years, having a consistent weekly sales base of at least 100 customers, selling boxes composed of mostly organic products and operating with some kind of ecologically or socially 'ethical' mission. In pursuit of a straightforward comparison between development-orientated and for-profit enterprises, the schemes were chosen based on their explicit business models: one for-profit scheme (Wild Organic Foods), one co-operative scheme (Ethical Co-op) and one social enterprise scheme (Harvest of Hope). Each scheme's management agreed to distribute a survey to all of its customers, to outline for the researcher the scheme's business model and to answer any further questions that arose in the course of the study.

No specific research instruments were employed to gather data about box scheme models. Topic areas for the scheme model comparison were compiled from a review of small business assessment tools and literature (Alaska Small Business Center, 2012; Carson, 1990; Peterson et al., 2010; Small Business Development Corp, 2012; Wiklund & Shepherd, 2005) and included mission, ownership structure, staff composition, start-up support, marketing, source of product, schedule of operations, capital expenses and financing. Meetings were arranged with each box schemes' management, either over the phone or in person, to gather information around these topic areas. Since data on box schemes came directly from scheme management, it was deemed reliable for qualitative analysis.

In exploring the dimensions of consumer demand for box schemes in Cape Town, the study employs a survey. Consumers were selected for the survey based on the criteria of being a current customer of one of the three box schemes participating in the study. The initial consumer sample was determined by the total estimated number of customers each box scheme reported<sup>2</sup>. The survey produced a final sample size of 354 observations in total.

<sup>&</sup>lt;sup>1</sup> The study's data on farmers are presented in the first author's Masters thesis entitled *Urban Agriculture, Social Enterprise & Agency: An Exploratory Study of Organic Box Schemes in Cape Town, South Africa* (University of Cape Town).

<sup>&</sup>lt;sup>2</sup> Harvest of Hope estimated it has 350 weekly customers, while Ethical Co-op and Wild Organic Foods each estimated 150 customers.

The survey instrument was based on standard examples available on numerous market research websites<sup>3</sup> and with guidance from the literature (Bradburn et al., 2004; David & Sutton, 2011; Denscombe, 2003). The survey was made available in an online format (www.surveymonkey.com) at the recommendation of box scheme managers for greater access to consumers, respondents' convenience and in consideration of the logistical challenges of administering paper surveys at dozens of box distribution sites. Once up and running online, the survey was satisfactorily pilot-tested by several box scheme staff members, as well as by the researcher and the aforementioned economist.

The survey instrument<sup>4</sup> asked respondents about household demographics, income, expenditures on food, aspects of participation in the box scheme, food purchasing habits, satisfaction with the product and recommendations for improvements to the product or scheme. Sensitivity to income questions, and the low response rates typically associated with open-ended formulations, served as the motivation for using structured income intervals in some questions. Differences across schemes were explored quantitatively using descriptive statistics and simple statistical tests (chi<sup>2</sup> and single variable ANOVA-tests) conducted in Stata, with statistical significance at the 5% level. The results of several open-ended survey questions were coded thematically and thus the nature of analysis there is qualitative.

#### 4. Box Scheme Business Models

Wild Organic Foods is a registered close corporation and for-profit box scheme operating since 2003. Current management purchased the business in 2010. With an emphasis on "directly supporting local organic farmers<sup>5</sup>" (www.wildorganics.co.za), Wild Organic Foods has a weekly base of about 150 customers who order customisable organic bags via email, for home or office delivery or pick-up at collection points. Wild Organic Foods broadly targets

<sup>&</sup>lt;sup>3</sup>For example: http://www.surveymonkey.com/mp/market-research-survey-templates/, http://www.esurveyspro.com/marketing-research-surveys.aspx, and http://www.google.com/insights/consumersurveys/examples

<sup>&</sup>lt;sup>4</sup>The survey instrument can be found as an appendix to the first author's previously mentioned Masters thesis.

<sup>&</sup>lt;sup>5</sup> Wild Organic Foods says that 90% of its suppliers are certified organic by a local agency. Those that lack certification are visited by the scheme's staff to confirm organic production techniques.

consumers who buy organic products, without a focus on any other specific characteristics, and they rely solely on word-of-mouth advertising.

Wild Organic Foods offers small, standard and double size bags, and optional products such as dairy, bread, eggs, meats and bottled goods can be added to bags or purchased in their ad-hoc retail shop. The staff process individually-emailed customer orders, translate those into supplier orders and then pick up produce from farmers. Bags are hand-packed in their retail location by all staff and either distributed to collection points or delivered to customers. In an effort to streamline the ordering process, the enterprise is currently working on a new website with 'shopping cart' capability so that customer and supplier ordering processes are entirely automated and integrated.

Wild Organic Foods is staffed by three full-time positions (procurement, accounts and customer liaison) as well as two part-time packers and two part-time delivery drivers. One of the enterprise's owners has a university-level commerce degree and experience working in the corporate sector; she fills the procurement position. Little start-up support was needed since the current owners purchased the brand, an existing client base, a roster of suppliers and a functional administrative system. Brand recognition is a strong point for the scheme. Additional product offerings and options for customisation represent a potential advantage over a standardized box scheme, and the availability of a retail shop may be attractive to consumers (although the scheme intends to close it in the future). Wild Organic Foods' owners' for-profit motives and drive for efficiency may be consistent with a level of market knowledge and/or business management capability above that of other scheme models.

**Ethical Co-op** is a co-operative enterprise since 2005, with a current customer base of approximately 150 customers. It was originally established by ten members of whom only one remains; he currently acts as manager and primary decision-maker. Ethical Co-op's mission is to support small local farmers, limit product packaging and offer only "ethical" products that are "organic in spirit" (<a href="www.ethical.org.za">www.ethical.org.za</a>). Ethical Co-op targets consumers who want to buy organic and who are comfortable doing so online, and marketing is primarily through word of mouth, social media and a key advert with a local 'green' business.

<sup>&</sup>lt;sup>6</sup> Ethical Co-op's offerings are certified organic whenever possible, but they acknowledge that some of their smaller suppliers cannot afford the financial obstacle of certification even though they practice organic farming. For those suppliers, Ethical Co-op uses an internal agreement in place of formal certification.

Ethical Co-op's website offers complete online ordering of organic boxes, both standard and custom size, with the option of adding a wide variety of other grocery and non-food products. Distribution is via weekly home or office delivery (using either the scheme's vehicle or a local courier service) or by customer pick-up at collection points. Most of the scheme's suppliers package their produce in advance and deliver it to the scheme's warehouse, where all staff pack boxes each week.

Ethical Co-op was started among friends with a common desire for organic produce, using a small amount of capital sourced from each member. The scheme has grown slowly, mainly through original members' extended networks. Ethical Co-op's manager has IT training at university level, which is why the enterprise initially opted to make the scheme an internet-based service. Additional staff consists of a full-time customer liaison, a full-time buyer and six part-time warehouse workers. Ethical Co-op's convenient online ordering and in-house website management are definite enterprise strengths; products being delivered to the scheme by suppliers could prove to be a logistical advantage. Ethical Co-op's broad spectrum of fully customisable food and non-food product offerings may also be a clear advantage over other schemes, but its lack of business-trained or market-orientated staff could be a potential weakness.

Harvest of Hope is a social enterprise in operation since 2008 with a current base of approximately 350 customers. Harvest of Hope's mission focuses on supporting livelihoods and alleviating poverty (<a href="www.harvestofhope.co.za">www.harvestofhope.co.za</a>). Its boxes contain organic produce grown in some 25 gardens in disadvantaged communities in the Cape Flats, supplemented by produce sourced from small-scale commercial organic farms in other areas of peri-urban Cape Town. Harvest of Hope offers two differently-sized box options distributed to collection points on a weekly basis to advance-subscription customers. Target consumers are explicitly middle-class, socially responsible and well-educated (in fact, many collection points are located at upmarket private schools and universities). Marketing is primarily through word-of-mouth and social media visibility, as well as through weekly tours of the gardens and other public relations activities.

Harvest of Hope is the business unit of Abalimi Bezekhaya (hereafter Abalimi), a registered NPO that provides urban agriculture training programmes for food security and income generation. The scheme creates job opportunities for farmers who successfully complete Abalimi's programme and demonstrate the

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<sup>&</sup>lt;sup>7</sup> Because the cost for organic certification is prohibitively expensive for Harvest of Hope's low-income farmers, the produce sourced from these communities is offered as organic in practice and the scheme says that it monitors farmers' growing techniques on a regular basis to insure that organic methods are being used.

technical ability to grow produce at an acceptable volume and quality to suit the scheme's needs. Harvest of Hope was initially developed with the paid guidance of a professional business consultancy that designed the programme and made recommendations for its implementation. Initial capital for the packing shed, vehicles, produce crates and a commercial scale was sourced from Abalimi's extensive network of funders. Harvest of Hope is staffed by one full-time marketing position, the only staff member with a business background. The scheme is further supported by Abalimi's field team manager, production coordinator and management board, as well as a team of part-time staff made up of about six to ten fieldworkers, packers and drivers, many of whom are connected to Abalimi's community programmes in some way.

The logistics of Harvest of Hope's schedule of operations are all handled by Abalimi's staff, including coordinating farmers' weekly pick lists, transporting produce to the packing shed, packing boxes and delivering them to collection points. At present, Abalimi is working towards training more farmers and increasing Harvest of Hope's production capacity in order to grow the box scheme. Harvest of Hope's social mission may be an advantage in attracting certain consumers, and its close ties to Abalimi provides visibility and a resource base of staff, volunteers and funding perhaps unavailable to other schemes. The question pursued in this study is whether Harvest of Hope manages to successfully compete with other enterprise models.

### 5. Consumer Demand

# **5.1 Dimensions of Consumer Expenditure on Box Schemes**

In this section, consumers are compared across schemes, particularly with respect to expenditure on the box and to the importance of the box in overall grocery spending. Table 1 provides data to answer the question of whether box schemes capture a significant portion of household expenditure on fresh produce. When assessing the importance of box schemes, one cannot rely on aggregate statistics of the volume of produce sold through such schemes because no representative data exists. But if one rather asks what proportion of a household's grocery budget or expenditure on fresh produce goes towards a box scheme, one can then get a picture of how important these schemes are for subscribers.

Respondents' average household size varies significantly across schemes ( $F_{3, 350}$  = 2.64, p = 0.049), from 2.61 persons per household for Wild Organic Foods to 3.03 for Harvest of Hope. Harvest of Hope is the outlier; if it is dropped, household size is no longer statistically significantly different across the schemes ( $F_{2, 195}$  = 0.46, p = 0.634). The difference in household size is likely explained by the difference in distribution strategy followed by the different schemes. With their emphasis on online ordering, Wild Organic Foods and Ethical Co-op say they cater more to young professionals, who tend to be single or childless couples, while Harvest of Hope attracts a larger proportion of young families because it uses schools as its main distribution points.

Table 1: Consumer profile by box scheme

	Box Scheme				
Characteristic	Ethical Co-op	Harvest of Hope	Wild Organic Foods	Multiple / Unidentified	Significance
Number of Observations	49	156	126	23	
Household Size	2.63	3.03	2.61	2.87	F(3, 350)=2.64 p = 0.049
Income Distribution (R/month)					1
5,000 – 10,000	30	7	10	14	
10,000 – 15,000	14	12	17	14	
15,000 - 20,000	30	22	17	19	
20,000 - 30,000	14	16	21	29	
30,000 - 40,000	11	39	33	19	$chi^2(15)=31.94$
> 40,000	2	4	2	5	p = 0.007
·	100	100	100	100	•
Total Grocery Expenditure (R/month)					
< 1,000	0	9	3	4	
1,000 - 2,000	29	22	24	13	
2,000 - 3,000	31	22	39	39	
3,000 – 4,000	25	22	18	17	
5,000 – 7,000	15	17	13	22	$chi^2(15)=24.34$
> 7,000	0 100	8 100	3 100	4 100	p = 0.060
Retail Market Fresh Produce Expenditure (R/month)					
50 – 100	43	55	58	41	
100 – 250	30	32	31	41	
250 – 500	26	11	9	18	$chi^2(9)=12.22$
> 250	0	1	2	0	p = 0.201
230	100	100	100	100	p 0.201
Total Fresh Produce Expenditure (R/month)	1368	978	1334	1450	F(3,350)=10.90 p = 0.000
Cost of Box (R/month)	628	375	721	737	F(3,314)=35.42 p = 0.000
Box as % of Total Groceries	25	16	29	26	p = 0.000 F(3,308)=17.32 p = 0.000
Box as % of Total Fresh Produce	46	43	58	52	F(3,305)=22.01 p = 0.000

Income distribution varies significantly across schemes (chi<sup>2</sup>  $_{15}$ = 31.94, p = 0.007), with Ethical Co-op attracting a significantly larger proportion of subscribers from the bracket R5,000 to R10,000 per month than the other schemes. An ANOVA test across the remaining schemes shows no significant difference in income distribution amongst Harvest of Hope, Wild Organic Foods and the unidentified category ( $chi^2_{10} = 8.7432$ , p= 0.557). Differences in income distribution do not translate directly into differences in the distribution of total grocery expenditure at the 5% level ( $chi_{15}^2 = 24.34$ , p= 0.060). For example, Ethical Co-op, which included the largest proportion of subscribers from the lowest income bracket, has no subscribers in the lowest grocery expenditure bracket. As with household size, Harvest of Hope is the outlier when it comes to grocery expenditure. Surprisingly, on monthly grocery expenditure Harvest of Hope has both the highest proportion of subscribers in the lowest grocery expenditure bracket, and the highest proportion of subscribers in the highest expenditure bracket. It is assumed that household size explains the distribution at the high end of grocery expenditure. An ANOVA test conducted over the remaining three schemes reveal no significant difference in grocery expenditure when Harvest of Hope is dropped ( $chi^{2}_{10} = 7.74$ , p= 0.654).

Neither grocery expenditure pattern nor income distribution matter for expenditure on fresh produce purchased from outlets other than the box schemes  $(chi^2_9 = 12.22, p= 0.201)$ . Since the difference in expenditure on other fresh produce is not statistically significant across schemes, one cannot say anything definitive about substitution between the box and other sources of produce. However, this is not to say that there is no difference in expenditure on the box itself. Average expenditure varies from R375 per month for Harvest of Hope to R737 per month for subscribers to unidentified schemes, a difference which is highly statistically significant  $(F_{3, 314} = 35.42, p = 0.000)$ . If Harvest of Hope expands its modest range of product offerings, it may be better able to capture a larger share of consumer expenditure.

Box schemes capture a significant portion of subscribers' expenditure on fresh produce, as well as on total groceries. The cost of the box as a percentage of expenditure on all fresh produce varies significantly across schemes ( $F_{3, 305} = 22.01$ , p = 0.000) from 43% for Harvest of Hope to 58% for Wild Organic Foods. Harvest of Hope is the outlier; excluding it produces an ANOVA result which shows that the box as share of expenditure on all fresh produce is no longer significantly different across schemes ( $F_{2, 169} = 0.29$ , p = 0.752). The cost of the box as a percentage of all grocery expenditure follows the same pattern, ranging from 16% for Harvest of Hope to 29% for Wild Organic Foods. The difference is statistically significant ( $F_{3, 308} = 17.32$ , p = 0.000). The ability of the

box to capture a substantial portion of consumer grocery expenditure is one of the most important results of the survey presented here. Even a social enterprise model offering a modest range of produce is able to capture almost half of its subscribers' fresh produce expenditure; by adding variety to the product offerings, this model's share could potentially be raised to almost 60% of consumers' fresh produce expenditure.

To investigate what in general determines box schemes' ability to capture a share of expenditure on fresh produce, data have been pooled for all three schemes. It is hypothesised that income, level of expenditure on groceries and tenure are the main determinants of the share of fresh produce expenditure a household is willing to commit to a box scheme. Of these three factors, the effect of tenure is simplest to predict: as people become more familiar with a scheme they will rely on it more, buying more from the scheme and less from supermarkets (assuming continued participation in the scheme over time is indicative of their needs being satisfactorily met).

To extend the hypothesis further, richer people arguably have more expensive tastes, which mean that they will buy more luxuries and less fresh produce,; however, it does not necessarily follow that the rich would prefer to buy their fresh produce from supermarkets or from box schemes. If one finds a negative relationship with income or total grocery expenditure, it may suggest that box schemes are less able to provide 'exotic' fresh produce than other outlets. For the purpose of this experiment, low, medium and high income, total grocery expenditure and tenure categories were constructed. Results are set out in Table 2.

Table 2: Cost of box as share of expenditure on fresh produce (pooled sample)

	Share (			
<b>Consumer Attribute</b>	Low <sup>1</sup>	Captured by Box Medium <sup>2</sup>	High <sup>3</sup>	Significance
Income	54%	51%	45%	$F_{2, 233}$ =4.56 p = 0.011
Grocery Expenditure	54%	49%	44%	$F_{2,301}=6.82$ p = 0.001
Tenure	49%	50%	50%	$F_{2,306}=0.20$ p = 0.820

<sup>&</sup>lt;sup>1</sup> <u>Low</u>: income = < R15,000/month; grocery expenses = <R2,000/month; tenure = < 6 months

The income dynamic is as hypothesised. Members of the low income or grocery expenditure group (income <R15,000 per month, groceries <R2,000) get more than half of their fresh produce from box schemes. As income and grocery expenditure rise, the share captured by box falls to 45% and 44% respectively. In both cases the relationship is statistically significant (see Table 2). This result is consistent with the idea that variety is important, especially for keeping more affluent consumers interested in box offerings. Surprisingly, no relationship was found between tenure and produce expenditure ( $F_{2, 306} = 0.20$ , p = 0.820). The box scheme captures half of fresh produce expenditure regardless of how long a given consumer has participated.

 $<sup>^{2}</sup>$  Med: income = R15,000 - R30,000/month; grocery expenses R2,000 - R4,000/month; tenure = 6–24 months

<sup>&</sup>lt;sup>3</sup> High: Income = > R30,000/month; grocery expenses => R4,000/month; tenure => 24 months

<sup>&</sup>lt;sup>8</sup> It bears noting that the three categories compared here were arbitrarily constructed, and as such, choosing the wrong cut-offs could influence the results. A more robust approach would be to develop a multivariate regression model in which continuous or categorical variables are brought together to tease out significant relationships and interactions, but such a model lies outside the scope of this paper.

# **5.2 Dimensions of Consumer Satisfaction with Box Schemes**

Respondents were asked to rank agreement on a Likert scale with statements about their satisfaction with four box characteristics: variety of box contents, quality of box contents, amount of produce in the box and box price. Table 3 sets forth this data.

Table 3: Self-reported satisfaction by box scheme and by satisfaction criteria (n = 354)

		Box Scheme				
		Ethical	Harvest of	Wild	Multiple/	
Satisfaction Criteria		Co-op	Hope	Organic	Unidentified	Significance
				Foods		
Price	Strongly Disagree	0	0	1	0	
	Disagree	2	3	11	14	
	Neutral	0	1	2	5	
	Agree	52	54	49	33	
	Strongly Agree	46	43	37	48	$\chi^2(12)=19.86$
		100%	100%	100%	100%	p = 0.070
Volume	Strongly Disagree	2	0	0	0	
	Disagree	6	8	4	5	
	Neutral	2	2	2	5	
	Agree	57	51	61	57	
	Strongly Agree	30	39	32	33	$\chi^2(12)=18.33$
		100%	100%	100%	100%	p = 0.106
Quality	Strongly Disagree	0	0	0	0	
	Disagree	6	6	6	14	
	Neutral	0	1	2	0	
	Agree	63	48	58	43	
	Strongly Agree	31	46	34	43	$\chi^2(9)=11.33$
		100%	100%	100%	100%	p = 0.254
Variety	Strongly Disagree	0	3	0	0	
-	Disagree	13	23	10	10	
	Neutral	2	1	2	5	
	Agree	54	53	61	67	
	Strongly Agree	30	21	27	19	$\chi^2(12)=17.71$
	· · · -	100%	100%	100%	100%	p = 0.125

The data presented in Table 3 show that overall, box schemes generally produce high levels of consumer satisfaction regardless of the dimension of satisfaction investigated. However, consumers report less satisfaction with variety than with other box attributes. Most importantly for purposes of this paper, none of these satisfaction measures vary significantly by scheme at the 5% significance level, which indicates that all three scheme models are delivering their product equally well. This finding further implies that a social enterprise box scheme is able to compete with its for-profit and co-operative counterparts in successfully delivering its product, at least where consumer perceptions are concerned.

#### 6. Discussion and Conclusion

As part of an overall study exploring fresh produce box schemes as sustainable urban agriculture enterprise, this paper aimed to investigate if demand exists for such box schemes in Cape Town and whether a social enterprise model can successfully compete with other business models in the current market.

A qualitative comparison of three box scheme models reveals a number of potential strengths that may be taken into account when considering box scheme enterprise development. Expanding product offerings may help a box scheme capture a larger share of consumer household expenditures. Providing some level of box customisation and the ability to order online may prove attractive to consumers, and a connection to a social programme could serve to augment marketing strategies. Lastly, strong market knowledge and management capacity are sure to be an asset for a box scheme's financial sustainability, and access to a unique network of resources may be a particular advantage for a social enterprise model.

Survey data presented here illustrate the consistency of household spending patterns on fresh produce and the significance of the box scheme as part of household expenditures. These results indicate that there is a viable market for box schemes in Cape Town. Consumers' high levels of overall satisfaction and their commitment to box schemes as demonstrated by tenure suggest that on the whole the box scheme model is working. Furthermore, a social enterprise box scheme is successfully capturing a share of this consumer market, effectively delivering its product to consumers and maintaining consumer loyalty.

<sup>&</sup>lt;sup>9</sup> The study's results around dimensions of box scheme consumer satisfaction are unpacked further in Thom and Conradie (2012) *Promoting Urban Agriculture for Development:* Suggestions for Designing the 'Ideal' Social Enterprise Box Scheme. CSSR Working Paper No. 316.

The study's results indicate that there is a market for urban agriculture products in Cape Town. This supports research on the food "quality turn" (Allaire, 2003, p62), which finds a growing consumer market for organic produce in South Africa (Barrow, 2006; Bienabe et al., 2011) in line with that of the global North towards local, sustainable, organic food choices (Sahota, 2007). Urban agriculture in South Africa could capitalize on this niche organic market, but a recent study on southern African countries found that urban food production's contribution to local economies is hindered by "the inadequacy of urban markets as a mechanism of getting household-level produce to the commercial consumer" (Crush et al., 2011, p296).

Thus attention is drawn to a misalignment of market supply and demand that is a missed opportunity for socioeconomic development. Developing agriculture value chains requires supportive local and national policy environments and well-organised production capacity (Crush et al., 2011). For example, this might involve addressing urban farmers' access to land and financing in the form of microcredit or subsidies; it could also entail promoting urban agriculture enterprise in policies aimed at growing the entrepreneurial sector. The RUAF - From Seed to Table programme focuses on supporting production in niche markets in order to develop urban agriculture value chains (Dubbeling et al., 2010); the programme is helping small enterprises and producers take advantage of thesis markets in 18 cities around the world, including Harvest of Hope in Cape Town (RUAF, 2012). Whatever route taken, if urban agriculture is to meet growing consumer demand and contribute to economic growth, then creating an enabling environment and building production capacity are interrelated public-private sector issues that warrant further examination.

The study's results also demonstrate that a social enterprise box scheme can compete in the market. This is important when thinking about the viability of the social enterprise model for socioeconomic development. In South Africa, recent research has shown that a social enterprise box scheme does improve poor producers' agency (de Satge, 2011; de Satge & William, 2008; Kirkland, 2008), a finding with which this study's results concur. Research on other types of social enterprise in South Africa has further shown this model to make a positive contribution in beneficiaries' lives. For example, Amm (2009) found that three social enterprises (two in the craft sector and one in computer technology) created jobs and income, provided skills acquisition, and according to the employees themselves, improved their overall quality of life. von Broembsen (2012) also found that a craft-related social enterprise intermediary provided

income-earning opportunities and formal economy access that would have been otherwise unavailable to poor producers.

Clearly a social enterprise model can deliver on a social mission; what has been less clear is whether it can perform in a competitive market. In fact, the literature recognises this issue is problematic for many social enterprises (Fonteneau & Develtere, 2009; Urban, 2008; Weerawardena & Mort, 2006). This study's finding that a social enterprise model is able to compete with for-profit businesses thusly moves this debate forward.

The study design and methods presented limitations. The use of an online survey instrument restricted respondents' access to only those who had access to the internet and the skills to navigate an online environment. The failure to survey respondents who choose not to participate in a box scheme is also a flaw in study methods which would need to be addressed in order to construct a fuller picture of the fresh produce market in Cape Town. Finally, assessing market demand for vegetable boxes is only half of the economic equation; attention must also be given to the supply side. The authors' interviews with urban farmers in Cape Town indicate there is a real need for research not only on the volume of produce they contribute to the market, but also on the context-specific constraints these farmers face in production and enterprise development.<sup>10</sup>

<sup>&</sup>lt;sup>10</sup> This is a gap in the literature that the first author addresses through case studies of two disadvantaged urban farmers practicing in Cape Town, which make up part of the larger study conducted for her previously mentioned Masters thesis.

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