

The Welfare Impact of Urban Agriculture: The Case of Harvest of Hope

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Abstract:

This paper investigates the extent to which urban agriculture contributes to the income of participants in the Harvest of Hope initiative, in two of Cape Town's urban townships: Nyanga and Khayelitsha. In doing so, an element of the welfare impact of urban agriculture can be discerned. We propose the general hypothesis that urban agriculture initiatives will contribute substantially to the participant's income. Surveys were distributed to 30 participants in the initiative, and data regarding total income and average income earned from the initiative was obtained. It is found that income earned from Harvest of Hope makes up approximately 40% of the participants' total income in Khayelitsha, and a third of total income in Nyanga. This has allowed us to deduce that income earned from urban farming is a substantial supplement for income earned through other means in low income households. Comparative analysis of Harvest of Hope data and data presented in the 2011 Census suggests that Harvest of Hope farmers working in Khayelitsha earn significantly more income than their comparable socio-economic group, and farmers working in Nyanga earn a similar level of income to their comparable socio-economic group. These findings regarding the impact of urban agriculture on income further bolsters the case for micro-farming as a means towards increasing social and economic welfare, and confirms that this practice is worth expanding in quasi-urban Cape Town.

Introduction:

Urban agriculture has emerged as an important strategy in combatting poverty and food insecurity in South Africa and specifically quasi-urban Cape Town (Thornton, 2008). Thus, it has been generally accepted among academics in this field of study that urban agriculture contributes positively to the farmer's welfare (Crush, Hovorka & Tevera, 2011). The term "welfare" spans across diverse areas of standard of living. This paper will look at welfare in terms of income procured through the practice of urban farming. We endeavour to understand the possibilities and limitations of urban agriculture. Determining realistically whether or not this technique positively improves participants' income will contribute to this.

Existing literature has analysed the contribution of this practise to consumer well-being and ecological sustainability. The prevailing consensus in current literature is that urban agriculture improves welfare in many non-monetary ways. It has been widely accepted that urban agriculture improves food security and poor communities' access to nutritious food sources (Rogerson, 1993). The alternative food source that urban farming provides will also contribute to the economic state of the household by increasing its capacity to save, and thus contributes to poverty alleviation (Martin, Meadows & Oudwater, 2000). Psychological welfare effects have also been noted, due to improved environmental conditions and a sense of productivity (Martin et.al, 2000). Thus, the literature has addressed the influence of urban agriculture on economic, environmental and social welfare in multiple areas.

Crush, Hovorka and Tevera (2011) cast doubt upon this claim, however, arguing that previous studies have drawn conclusions about the positive welfare impact of urban agriculture too hastily. They argue that these claims have been heavily influenced by public advocacy, and thus little concrete evidence in terms of the practice's effect on farmers' welfare has emerged within the body of literature on urban agriculture, which calls for more research into this topic. On the whole, the effect of urban agriculture on the income component of economic welfare has not been addressed. Crush et.al (2011) look briefly into the current condition of urban agriculture as a means for income generation. Across the 11 Southern African cities that their study examines, only 22% attempted to grow their own produce. Of this 22%, a mere 3% of households

derived income from the sale of any home-grown food (Crush et.al, 2011). On a more local level, South Africa – and especially Cape Town – participates in urban farming practices far less than the average Southern African country (Crush et.al, 2011). The data indicates that only 5% of Cape Town households engage in urban food cultivation, which is vastly below the average (Crush et.al, 2011). Our study considers a programme whereby the sale of urban produce is facilitated and fostered. If it can be proved that the income generating potential of urban agriculture is more prosperous when encouraged by institutions such as Abalimi Bezekhaya, then the potential of urban agriculture as a promoter of welfare can be realised and expanded in South Africa.

This paper will observe the Abalimi Bezekhaya Harvest of Hope Programme as a case study in aid of investigating this topic. This case study can be seen as representative of a typical urban farming initiative in South Africa. Abalimi operates in the socio-economically impoverished townships of Khayelitsha, Nyanga and the Cape Flats regions surrounding Cape Town (Abalimi Bezekhaya, 2013). The organization’s vocation is to facilitate the production of “permanent organic food growing and nature conservation projects” on an individual and community level (Abalimi Bezekhaya, 2013). The organization runs on the accepted premise that urban agriculture initiatives will significantly reduce the social and economic plights of these communities (Abalimi Bezekhaya, 2013). The Harvest of Hope initiative in particular spearheads a social business that will support the community gardens in the Cape Flats (Harvest of Hope, n.d.). The initiative facilitates the sale of community grown organic produce, and thus aims to create income and employment for its participants (Harvest of Hope, n.d.). This paper will thus aim to determine to what extent this claim, that the initiative will contribute significantly to the farmer’s monthly income, is accurate.

Methodology:

Our primary data set was obtained through written surveys that were distributed by Harvest of Hope to a random sample of 30 farmers. The farmers interviewed work in two different regions, Khayelitsha and Nyanga, in which Harvest of Hope community gardens are located. The main objective of the survey was to formulate a cross-sectional dataset for the income of Harvest of Hope participants. This study takes the participant’s total income to be comprised of cash transfers, government grants, Harvest of Hope income and income from other employment. If the participant was unable to provide information regarding their income, we accessed this information from Harvest of Hope’s records with the permission of the respondent. The income data collected will be used to investigate how significantly Harvest of Hope income contributes to overall income earned by the participants. In pursuit of controlling the data collected against data presented in the most recent 2011 Census, the surveys given to the farmers also included questions aimed at constructing a socio-economic profile of each participant. The socio-economic profile includes information regarding gender, household size, age, race, education level, and whether or not the respondent is the main breadwinner in his or her household. This will aid in indicating how significantly participating in the initiative contributes to the income of participants.

Data Analysis and Results:

This section is separated into a discussion of income data analysis and results for the two regions included in this study – Khayelitsha and Nyanga – and an analysis of data relevant to the construction of a socio-economic

profile of respondents. Sixteen farms are considered in this study, where six of these are located in the Khayelitsha region and the remaining ten are located in the Nyanga region. Separate data analyses of the two regions is necessary to control for differences between the farms in each region that may skew the income data, such as the size of the farms and their respective locations.

Table 1 presents a summary of the relevant income data for twelve respondents that work on farms in Khayelitsha. The income data is taken in terms of nominal prices and is measured in Rands per month.

Table 1: Summary of income data for Khayelitsha region

Income categories	mean
Average income from Harvest of Hope	R1 542,08
Total income (using average income)	R4 842,08
Average income from Harvest of Hope as a % of total income	39,18%
Maximum income from Harvest of Hope	R2 620,73
Total income (using maximum income)	R5 702,55
Maximum income from Harvest of Hope as a % of total income	51,55%

Table 1 lists the mean values for average income earned from Harvest of Hope, total income earned, and average Harvest of Hope income as a percentage of total income. The figures given for average income were estimated by the respondents interviewed, and are thus approximate values. Therefore, in pursuit of maximising the reliability of this study's findings, this data is compared against data corresponding to maximum income earned in a month over the most recent harvesting season (August 2016 to March 2017), total income earned, and maximum Harvest of Hope income as a percentage of total income.

An analysis of the data presented by average Harvest of Hope income earned as a percentage of total income is necessary in assessing the contribution of the programme to welfare in terms of total income earned. One respondent's income from the organisation comprised 100% of their income, however this value can be classified as an outlier as it falls outside of the data set's fences. In taking this into account, Harvest of Hope income as a percentage of total income is variable, but on average makes up approximately a third of total income earned for the Khayelitsha region. This coheres with the mean value of average of Harvest of Hope income as a percentage of total income, which is 39,18%.

Maximum Harvest of Hope income as a percentage of total income is again variable. However, this percentage value falls between approximately 40 and 60 percent for most respondents, and thus it can be deduced that this income makes up approximately half of total income earned. This coheres with the mean value of maximum Harvest of Hope income as a percentage of total income, which is 51,55%.

In comparing the results for average Harvest of Hope income as a percentage of total income with maximum Harvest of Hope income as a percentage of total income, it is obvious that the latter would be higher than the former. However, this comparison allows for a more reliable estimate of the overall contribution of the Harvest of Hope programme to total income earned by respondents as it provides an understanding of the contribution of maximum income compared with that of average income, both in relation to total income. In this case, the comparison has allowed for the deduction that the programme contributes to approximately 40% of respondents' total income in the Khayelitsha region.

It is worth noting that only four of the twelve respondents' total income was supplemented by income earned from other jobs, and income earned from monthly cash transfers. However, when this is the case, income earned from other jobs is significantly higher than income earned from Harvest of Hope. Ten out of the twelve respondents' income is supplemented by a grant of R1600. Thus, total income is supplemented by grants more frequently than income earned through other jobs.

Table 2 shows a summary of the relevant income data for eighteen respondents that work on farms in Nyanga. The income data is taken in terms of nominal prices and is measured in Rands per month.

Table 2: Summary of income data for Nyanga region

Income categories	mean
Average income from Harvest of Hope	R527,72
Total income (using average income)	R1 474,95
Average income from Harvest of Hope as a % of total income	44,45%
Maximum income from Harvest of Hope	R1 044,02
Total income (using maximum income)	R1 991,24
Maximum income from Harvest of Hope as a % of total income	52,99%

Table 2 lists the mean values for data according to the same income categories that were established in the discussion of the Khayelitsha dataset. Average Harvest of Hope income as a percentage of total income earned varies significantly for this data set, thus making it difficult for one to definitively conclude how significantly Harvest of Hope income contributes to overall income earned. This is primarily due to the mean value of Harvest of Hope income as a percentage of total income (44,45%) being distorted by the fact that average Harvest of Hope income comprises 100% of total income earned for six respondents. However, excluding these six respondents allows one to observe that average Harvest of Hope income contributes to approximately 20% of total income for the rest of the respondents.

Maximum income as a percentage of total income is also variable and slightly distorted due to the six respondents whose income is entirely comprised of Harvest of Hope income. However, excluding these six respondents allows one to observe that maximum Harvest of Hope income contributes to approximately 30% of total income for the rest of the respondents.

In comparing the results for average Harvest of Hope income as a percentage of total income to maximum Harvest of Hope income as a percentage of total income, again, the latter is higher than the former. However, this comparison has allowed for the deduction that the programme contributes to approximately a third of respondents' total income in the Nyanga area.

Only two of the eighteen respondents' total income is supplemented by income earned from other jobs, while three of the respondent's total income is supplemented by monthly cash transfers. Ten of the eighteen respondents' total income is supplemented by grants. Thus again, on average, total income is supplemented by grants more frequently than income earned from other jobs and cash transfers.

The mean Harvest of Hope average income earned is R1542,08 for the Khayelitsha dataset, and R527,72 for the Nyanga dataset. The large difference between these two values can be attributed to disparity in the sizes of the respective production areas in Khayelitsha and Nyanga. The Khayelitsha farms constitute a production area of 8753m², while the Nyanga farms constitute a production area of 5538m². Thus, the Khayelitsha production area is significantly larger than the Nyanga production area which allows Khayelitsha farmers to grow and sell more produce, resulting in a higher average income per Khayelitsha farmer.

Overall, despite there being variety in the data obtained, it can be concluded that the Harvest of Hope initiative contributes to between approximately 30 and 40 percent of participants' total income. While this reveals that the contribution of this initiative does not make up the majority of total income earned by farmers, this proportion that can still be considered as significant. Furthermore, the importance of the initiative in contributing to income is revealed in considering those seven respondents whose total income is entirely comprised of income earned through the organisation.

In pursuit of controlling the primary data discussed above with secondary data taken from the 2011 Census, a socio-economic profile of the Harvest of Hope farmers who participated in this study is constructed below.

Table 3: Socio-economic profile of respondents

Gender	Female	80%
	Male	20%
Age	Age range	30 to 81 years
Household	Household size	2 to 9 people
Education	Primary	30%
	Secondary	60%
	Tertiary	10%
Main bread-winner?	Yes	90%
	No	10%

In this study, women form the dominant gender in the practice of urban agriculture, making up 80% of the sample of farmers. The respondent's ages range from 30 to 81 years; however, a significant majority of participants' ages fall between the ages of 60 and 70 years old, and only four respondent's ages fall below 50 years. More than half of the sample's household sizes contained five or more people, 90% of the respondents have attained a secondary education level of grade 12 or lower, and 90% Of respondents identified as being the main breadwinner within their household. This summary of data allows for a comparison to the results of income data collected in South Africa's 2011 Census. Importantly, all of the respondents that answered the survey question identify as being a part of the Black African racial group, and as a result, the relevant data that will be used as a control for this study's collected data will be that of monthly income earned by Black Africans. Income included in the 2011 Census has been inflated to reflect real income, taking 2011 as the base year.

Census data collected from the suburb profile of Khayelitsha indicates that most Black Africans' total income falls within the income bracket of R1,41 to R2262,96 per month (City of Cape Town, 2013). Our analysis of the Khayelitsha dataset has found that the mean total income earned per month is R4842,08. This figure is significantly higher than the census income estimates, and indicates that the income of participants in the Harvest of Hope programme is 46,74% greater than the upper value of the income bracket ascribed to the average individual living in the suburb of Khayelitsha.

Census data collected from the suburb profile of Nyanga indicates that most Black Africans' total income falls within the income bracket of R1,41 to R2262,96 per month (City of Cape Town, 2013). Our analysis of the Nyanga dataset has found that the mean total income earned per month is R1474,95. This figure falls within the income bracket taken from census data, however it is significantly lower than the upper value. This indicates that while Harvest of Hope participants do not earn more than the average individual living in Nyanga, total income earned coheres with the range of total income earned taken from Census data. In understanding this result, it is necessary to remember that the discrepancy between the values for mean total income earned for Khayelitsha and Nyanga respectively is influenced by relative sizes of the production areas in each region.

We acknowledge that our study is subject to various limitations. The process of attaining the results was demanding of Harvest of Hope's resources, and thus we were only able to attain data from 30 participants. This undoubtedly limits the accuracy of our results to some extent. We were also constrained by which respondents the organisation could distribute surveys to. Resultantly, there is an unequal number of participants recorded for the Khayelitsha dataset (12 respondents) and the Nyanga dataset (18 respondents). Furthermore, the disparity in the size of the respective production areas for the Khayelitsha and Nyanga regions has affected the income data collected; ideally, the sizes of the respective production areas should have been controlled for.

Conclusion:

This research has shown that the Harvest of Hope urban agriculture initiative has a positive impact on participant's welfare in terms of contribution to total income. Furthermore, it has been shown that this occurs to a significant extent: income earned from the initiative contributes to approximately 40% of total income in Khayelitsha and to approximately a third of total income in Nyanga. Although income earned from the initiative does not contribute to the majority of total income earned, its addition to total income is significant. Urban agriculture is thus a viable candidate for a substantial supplement for income earned through other means to individuals in the lowest income bracket. This confirms the study's initial hypothesis.

A comparative analysis of Harvest of Hope data on income earnings and data presented in the 2011 Census has shown that Harvest of Hope farmers working in Khayelitsha earn significantly more income than their comparable socio-economic group, and farmers working in Nyanga earn a similar level of income to their comparable socio-economic group. These findings, coupled with the additional welfare benefits addressed in the discussion of the background literature, makes a strong case for expanding the implementation and advancement of urban agricultural initiatives in quasi-urban Cape Town.

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