

Agriculture and poverty reduction:

An assessment of the benefits of avocado production for smallholder farmers in Giheta – Burundi

Policy Brief

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Executive Summary

This policy brief intends to draw the attention of policy makers to the significant role that the agricultural industry and in particular the production of avocados could play in reducing rural poverty in Burundi. The avocado crop has enormous economic, market and health potential and could contribute significantly to the viability and sustainability of the rural economy which is presently dominated by tea, coffee and cotton production.

The brief is based on a study by Hakizimana, C., & May, J., (2011). *Agriculture and poverty reduction: a critical assessment of the economic impact of the avocado industry on smallholder farmers in Giheta – Burundi*. The study shows that favourable economic and nutritional conditions exist for small scale avocado producers in the Giheta district where avocados play a crucial role in the income generation, wellbeing and diet of small-scale farmers. The chief policy concern therefore would be to increase avocado production in Burundi through substantial support by both the private and public sectors. This would enable small-scale farmers to improve their income and thereby reduce the levels of rural poverty in Burundi.

Economic growth and poverty reduction: the role of avocado production

Many analysts regard agriculture, especially small-scale agriculture as an effective instrument for sustainable economic growth and poverty reduction, particularly in the rural areas of developing countries.

Another view point is that other mechanisms outside of agriculture should be explored due to today's availability of cheap food imports, the slow-down of tech-

nological innovation in the agricultural sector, and increased opportunities for non-farm activities.

It is appropriate, therefore, to consider the context in which agriculture in a particular developing country can in fact contribute to long term economic growth. Given the growth in East Africa's production of avocados for both the domestic and export markets and the fruit's nutritional factors, avocados provide a useful case study with which to investigate opportunities for agriculturally-led poverty reduction in a poor country.

Burundi's economy and agricultural potential

Burundi's economy has been greatly affected by four decades of political instability and violent social conflict. Since the early 1990s, gross domestic product (GDP) has fallen at an average of 3% annually and in 2005, GDP per capita remained at \$105 USD¹.

The incidence of poverty in Burundi in the 1990s was approximately 45% – the average in sub-Saharan Africa. By 2001, the incidence of poverty in Burundi reached 57%, and the country was classified by the Multidimensional Poverty Index (MPI) as among the ten poorest countries in the world².

Despite this, researchers believe many factors make it a favourable country for agriculturally-led economic growth and poverty reduction.

These factors include:

- an abundant labour force
- the presence of agriculturally trained technicians
- the positive receptiveness of farmers to intensive agricultural techniques and modern technologies
- adequate soil fertility
- favourable rainfall which allows for two annual rotations of crops
- an abundant network of rivers³.



Global avocado production has increased significantly and researchers believe the trend will continue

Global increase in avocado production

Global avocado production has increased significantly:

- World production of avocados increased by 2,099 000 tons between 1991 and 1994 and to 3,022 000 tons between 2001 and 2004 and were valued at \$500 million.⁴ This is occurring in more than 60 countries throughout all continents.
- World exports increased from 164 160 tons between 1991 and 1993 to 387 890 tons between 2001 and 2003. By 2004 this had increased to 541 000 which were valued at around \$606 million.

- World imports increased from 170 600 tons between 1991 and 1993 to 388 100 tons between 2001 and 2003 and subsequently reached 539 000 tons in 2004 and were valued at \$525 million.

Researchers working on this crop believe these global trends are likely to continue as avocado production is expanding rapidly in emerging economies such as China and Brazil⁵.

Regional importance

Regionally, avocados are also an important crop for rural communities and economies in East Africa where

¹ Nganou, N.J.P.; Wodon, Q.; Zoyem, J.P.; Mabushi, E.; and Kebede, E. (2008) Burundi's Growth: The Need for Long-Lasting and Stable Performance. World Bank.

² Bundervoet, T (2006) Estimating Poverty in Burundi. Households in Conflict Network, the Institute of Development Studies – at the University of Sussex – Falmer – Brighton – BN 1 9RE

³ Taplin, B.G. (2006) Burundi: Expanding External Trade and Investment. Nathan Associates Inc. Regional Economic Development Services Office for East and Southern Africa (USAID/REDSO)

⁴ FAO (2008) Market Segmentation of Major Avocado Markets. Prepared by Sugar and Beverages Group and Raw Materials, Tropical and Horticultural Products Service.

⁵ FAO (2000) Avocado production in Asia and the Pacific, RAP Publication 2000/9, Food and Agricultural Organization Regional Office for Asia and the Pacific. Downloaded from http://www.tistr.or.th/RAP/publication/2000/2000_09_high.pdf#page=29



Employment in small-scale farming production is one of the most important livelihood activities in this district and the cultivation and sale of avocados is widespread and expanding rapidly.

Burundi is situated. For instance avocados are currently one of the main export crops in Kenya and account for about 17% of its total horticultural exports⁶. About 85% of the crop is undertaken by small-scale farmers who grow avocados for subsistence, local markets and export.

Given Kenyan and global production of avocados, there is room to diversify the agricultural products which have previously dominated Burundi's agricultural history and explore crops such as avocados.

Nutritional value

Unlike most cash crops, studies have shown that avocados have a high nutritional value which is favourable for the reduction of malnutrition. Avocados contain proteins, lipids, vitamins, minerals, salt, sugars, carbohydrates and water⁷. There is evidence which suggests eating avocados may contribute to alleviating health problems such as obesity, heart disease, cancer, and strokes. The monounsaturated fat found in avocado is also associated with lower blood pressure and is considered to be essential for child development⁸.

Value added benefits

Avocados provide further economic benefits through value-added activities such as the production of avocado oils for the cosmetic industry. They can be used as a skin moisturizer, cleansing cream, makeup base, sun screen, lipstick, bath oil, and hair conditioner and, recently, as an input in the food industry⁹.

All these factors confirm the avocado crop's economic, market and nutritional potential to stimulate rural development and reducing poverty in poor countries.



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Research findings¹⁰

Research was conducted in 2009 in the Giheta district which is one of the eleven communal districts of Gitega province, the second poorest province in Burundi. Employment in small-scale farming production is one of the most important livelihood activities in this district and the cultivation and sale of avocados is widespread and expanding rapidly. The findings of the research shows that:

Avocado farming in Giheta

- In most surveyed households avocados are not produced on a commercial scale, trees are scattered on farms and intercropped with other crops.
- Most farming is with traditional avocados and the farming of grafted avocado varieties only occurs in 7% of the surveyed households.

⁶ Wasilwa, L.A; Njuguna, J.K.; Okoko, E.N.; Watani, G.W. (2008) Status of Avocado Production in Kenya. Downloaded from: http://www.kari.org/fileadmin/publications/10thproceedings/Poster/Status_AvocadoProd.pdf

⁷ Van Wijk, S. (2006) Analysis of the Dak Lak Avocado Chain. A Study Commissioned by MPI-GTZ SME Development Program. Prepared by Fresh Studio Innovations Asia LTD

⁸ Bergh, B (1992) The Avocado and Human Nutrition: Some Human Health aspects of the Avocado. Proc. Of Second World avocado Congress. Downloaded from http://www.avocadosource.com/WAC2/WAC2_p025.htm

⁹ Rodríguez-Carpena, J. G., D. Morcuende, et al. "Avocado, sunflower and olive oils as replacers of pork back-fat in burger patties: Effect on lipid composition, oxidative stability and quality traits." *Meat Science* **In Press, Corrected Proof**.

¹⁰ A mixed method approach, comprising a household survey, in-depth interviews and a value chain analysis, was used to investigate the contribution of avocados to the income generation and wellbeing. of small-scale farmers in the Giheta district.



While household members share in the production activities of avocados, slightly more women are involved in avocado sales.

- More of the selected households in the Giheta district are involved in farming avocados rather than coffee which is the main cash crop in Burundi and generally regarded as the main source of income for small-scale farmers in the district.

Sale of avocados

- While household members share in the production activities of avocados, slightly more women are involved in avocado sales.
- The women surveyed are found to use the money from these sales to buy other products which may be needed in the household especially food. For 46% of the surveyed households, the access to the National Road (RN2) seemed to play a crucial role in their trade of avocados.
- A small percentage of the Giheta households surveyed sell avocados to the avocado oil firm.
- Competition in the trade of avocados is quite significant and is growing. This has resulted in the considerable increase of their price.

Income generation and benefits

- Avocados were reported as the main source of income for eight of the 11 households surveyed.
- The sale of avocados was associated with having food, new clothes, owning a radio, saving for emergencies and a perceived economic status. One participant who had been involved in avocado production for almost 20 years had managed to build a house and get married using the financial resources he obtained from selling avocados.
- The quantitative results however, show that per capita income from avocados is still limited and this may due to a small number of avocado trees owned by the sampled households.

Household consumption and health implications

Avocados are widely consumed in Giheta. Adults and children in the sampled households eat avocados frequently (around three times per week) and in substantial volumes (6.5 avocados consumed per day). Given their nutritional value, the implication of this finding is that avocados can play an important role in improving the health of these small-scale farmers.

Avocado sales and child hunger

The results of a statistical test to predict the probability that the household's avocado sales would have an impact on child hunger reveals that avocado sales is a significant predictor of the absence of child hunger ($P = .092$). A positive and moderately large coefficient of avocado sales (1.461) also suggests that the avocado sales strongly influence the probability of the absence of child hunger in the sampled households. It is thereby found that in Giheta, child hunger is 4.3 times less likely in a household which sells avocados than a household which does not.

Other benefits

- The transport sector and people who are making baskets that small-scale avocado producers use to transport avocados to various places also seem to benefit, to some extent, from the avocados in Giheta.
- Avocados also seem to contribute to the government's revenue through various taxes collected from different actors in the avocado value chain.



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Policy implications

This research has shown the positive role that avocado consumption and production can play in the income generation, wellbeing and diet of the small-scale farmers and other beneficiaries in the agricultural context of Giheta, Burundi.

However the levels of per capita income from avocados remain low for small scale farmers who have not yet been able to reap the benefits of avocados as a commercial venture. The avocado value chain is largely one in which subsistence farmers sell surplus crops to a limited national market. In addition marketing costs are relatively high and there are substantial inefficiencies along the value chain with wastage, poor institutional support and virtually no quality control of production.

Increased capacity in all steps of the value chain: production, agro-processing, and marketing, is needed to improve small-scale farmers' income and others in the industry especially to support those in the district of Giheta.

Although some private organizations have already started investing in the sector especially in the area of avocado grafting, these efforts need to be supplemented by other enabling factors in order to attain

desirable outcomes in rural development. Such enabling factors could include access to farming land, fertilizers, extension services, avocado farming skills, financial credit, packaging, refrigerated transportation and processing. All these aspects require significant interventions by the government and strong commitment of political leaders involved in the agricultural sector which can then promote avocado farming not only in Giheta but also in other parts of the country.

Given these results, this case study encourages government and private sector to further investigate the possibilities of avocado production in other districts and in national decisions as a possible mechanism which supports agricultural development, poverty reduction and rural development.

In expanding from this case study in Giheta, this policy brief could be used as a baseline for further district or national research on avocado production and its value-added services. Further work could also enhance the government's strategy in providing an enabling and viable environment to upscale Burundi's agricultural production. All these aspects require significant interventions by the government and strong commitment of political leaders involved in the agricultural sector which can then promote avocado farming not only in Giheta but possibly in other parts of the country.

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This policy brief is based on a research paper, Hakizimana, C., & May, J., (2011). *Agriculture and poverty reduction: a critical assessment of the economic impact of the avocado industry on smallholder farmers in Giheta – Burundi*. It summarises the research and analysis done at the School of Development Studies. This policy brief is based on research supported by the South African Research Chairs Initiative of the Department of Science and Technology and National Research Foundation.

