J Soc Sci, 46(2): 176-184 (2016)
PRINT: ISSN 0971-8923 ONLINE: ISSN 2456-6756
DOI: 10.31901/24566756.2016/46.2.11

Enhancing the Livelihood of Rural Women through Indigenous Vegetable Production Around Volcanoes National Park in Rwanda

Nathan K.Taremwa[1], Dancilla Mukakamari[2] and Anastase Butera[3]

[1]University of Rwanda, Rwanda, [2]Association of Rwandan Ecologists, Rwanda
[3]Independent Institute of Lay Adventists of Kigali, Rwanda
Telephone: +250(0)788504820, [1]E-mail: nk.taremwa@gmail.com

KEYWORDS Economic Empowerment. Indigenous Vegetables. Community Resilience

ABSTRACT The study used both primary and secondary sources to investigate the enhancement of the livelihood of rural women through indigenous vegetable (IVs) production around Volcanoes National Park in Rwanda. It was found that the major types of IVs grown in the area were *Night shade, Gombo, Spider plant* and *Pumpkin leaves*. These were preferred by the respondent rural women farmers, over exotic vegetables, due to their higher nutritional value, resistance to pests and diseases, resilience to climatic changes and multiple uses including food and medicine. The major policy implications of the findings of the study is that the cultivation of indigenous vegetables should be encouraged and supported because of the strategic role this would play in enhancing rural livelihoods especially for rural women as the major producers.

INTRODUCTION

The rationale of this research was to highlight the importance of indigenous vegetables (IVs) in the livelihood of rural communities, particularly rural women and how this would contribute to sustainable conservation of Volcanoes National Park (VNP) in the Northern Province of Rwanda. Women produce a large part of the world's food and more importantly, the contribution of rural women in food security for the households cannot be overemphasized. They contribute significantly in all dimensions of food security (food availability, food accessibility, food system stability and food utilization) (FAO 2008). Rural women play important roles in food security as food producers, keepers of traditional knowledge and preservers of biodiversity, food processers, preparers, and providers for their families. Because of their multiple roles, women are key players in overcoming food insecurity. In most parts of the developing world, women participate in crop production and livestock care, provide food, water and fuel for their families, and engage in off-farm activities to diversify their families' livelihoods (Iiyama 2006; Kimiywe et al. 2007; CTA 2014). In addition, women carry the burden of unpaid care work such as caring for children, older persons and the sick. In this respect, the United Nations' (UN) International Day of Rural Women is celebrated on October 15 each year. The International Day of Rural Women is a global observance to recognize the rural women's importance in enhancing agricultural and rural development worldwide (15 October, International Day of Rural Women as of 2007, a UN Resolution Day Nº. A/Res/42/936).

The first International Day of Rural Women was observed on October 15, 2008. This day recognizes the role of rural women, including indigenous women, in enhancing agricultural and rural development, improving food security and eradicating rural poverty. The idea of honoring rural women with a special day was put forward at the Fourth World Conference on Women in Beijing, China, in 1995. It was suggested that October 15 be celebrated as "World Rural Women's Day," which is the eve of World Food Day, to highlight rural women's role in food production and food security. Experiences have shown that when equipped with the proper resources, women have the potential to help whole families and entire communities escape poverty. Regrettably, most women and girls especially those in the rural areas are disproportionately affected by poverty and discrimination (CTA 2014).

Indigenous vegetables have several advantages over their exotic counterparts, including superior adaptation to local environmental conditions and limited requirements for expensive external inputs, such as irrigation and agrochemicals and they are resilient to climate change (En-

vironment and Development Activities 2001; Abukutsa-Onyango 2011). They have high potential to contribute greatly to the nutritional wellbeing of rural people by providing the essential nutrients required for body growth and development and for prevention of diseases associated with nutritional deficiencies, such as blindness due to vitamin A deficiency. Rural families traditionally have made conscious efforts to preserve these plants around their homesteads, in crop fields and communal lands. In recent years, however, exotic vegetables have taken prominence over indigenous vegetables, in spite of their generally lower nutritive value. The availability of indigenous vegetables has declined drastically because of excessive cultivation of field crops and habitat change, including deforestation (IHC 2014). This has been exacerbated by a lack of major research and extension efforts to improve their husbandry and also promote production and marketing of indigenous vegetable species both in the domestic and external markets.

In Rwanda, production of vegetables is more pronounced in the areas around the national parks, volcanoes and valleys. This study therefore focused on production of indigenous vegetables by rural women from the community living adjacent to the VNP. This area is very attractive for agricultural production despite the competing claims for conservation of the national park and the intensiveness of agricultural development resulting from the favorable climate and the potential arable land around the park. Due to high rainfall and fertile volcanic soils, and the requirements for production of fruits and vegetables in this area, some rural women have focused their production efforts on indigenous vegetables to enhance their incomes and thus improve their livelihood status. Consequently, there is a growing challenge of available land for farming since there is a high population density around the park and further encroachment on the already small park's land is prohibited. As the population grows, so does the challenge of land available for farming. The overarching concern therefore, is how to enhance the livelihood of rural women, contribute to climate change resilience and also promote community resilience through indigenous vegetable production without compromising the conservation objectives for Volcanoes National Park.

This research was carried out in order to assess the importance of indigenous vegetables to the livelihoods of rural women in Rwanda. Specifically, the study seeks:

i. To establish the type of indigenous vegetables grown by rural women around the VNP.
ii. To determine the contribution of indigenous vegetable production to the livelihood of the rural community adjacent to VNP.
iii. To compare profitability and effectiveness on climate change resilience between indigenous and modern vegetable varieties around VNP.

The importance of the study is based on the fact that the Government of Rwanda has initiated various developmental programs to mitigate impacts of climate change, food and energy crises on gender equality and women's empowerment. These are demonstrated through deferent programs involving active participation of women, such as the Vision 2020 UMURENGE Program (VUP), Crop Intensification Program (CIP), Agasozi Ndatwa (Best Development Achiever Village), land husbandry, water harvesting and rainwater blocker terraces, Rural Sector Support Project and *Projet d'Appui à l'Elevage Bovin Laitier*. Programs on biogas energy, energy saving stoves, tree planting and radical terraces are important programs that involve both men and women to address effects of climate change and more importantly enhance the livelihoods of the population.

Rural women are the key role players contributing towards sustainable development (Ministry of Finance and Economic Planning 2000). In order to realize its development visions, the government of Rwanda had to ensure gender sensitive policies. According to the government of Rwanda's Vision 2020, Rwanda aims at becoming a middle-income state, and adapting such policies that are gender sensitive is one of the development strategies. This embraces providing equal opportunities to both men and women and also to ensure that women and youth have access to economic resources, which would lead them to economic freedom. This approach has been adapted and taken down to the grassroots level.

In this regard, Rwanda has put in place a number of mechanisms for further promotion of gender equality and women's empowerment.

These mechanisms cover the public, private and civil society organizations. In addition to mechanisms put in place, measures have been adopted to promote gender equality and women empowerment through long term and short-term plans, Vision 2020 and Economic Development and Poverty Reduction Strategy (EDPRS) (Ministry of Finance and Economic Planning 2000, 2007). So far, there are significant development outcomes from all interventions. However, most development interventions are based on Western values that accompany modern technologies. There has been neglect of the valuable indigenous knowledge systems and practices (Gahakwa et al. 2014). This study therefore seeks to explore the importance of indigenous knowledge and how this knowledge would enhance the livelihoods of Rwandans especially the rural women focusing on indigenous vegetable production.

The paper looks at the following sections. The socio-economic and demographic profile of the respondents, rural women empowerment and sustainable development in Africa, women and agricultural livelihoods in sub-Saharan Africa, the challenges and prospects of indigenous vegetable production in East Africa, women economic empowerment, innovation and community resilience in Rwanda, and economic opportunities and indigenous vegetable production in Rwanda. The following section provides the methodology of the study.

METHODOLOGY

This research was undertaken in January 2015. The target population was rural women in the community living adjacent to the VNP with a livelihood that is based on vegetable production.

The study used both primary and secondary sources to investigate the enhancement of the livelihood of rural women through indigenous vegetable (IVs) production around VNP in Rwanda. A total of 121 rural women who engaged in indigenous vegetable farming were selected from two sectors adjacent to the VNP, namely, Gataraga and Shingiro Sectors of Musanze District in the Northern Province of Rwanda. Two sampling techniques were used to obtain the sample, namely, snowball and purposive sampling. Snowball and purposive sampling techniques facilitated the researchers to identify female respondents who produce IVs in the area and these were consulted to identify rural women IV farmers.

In purposive sampling technique, units are sampled on basis of the knowledge that they have on the information being sought (most likely to provide the requisite data or information), or because they are the only ones in their respective categories. In snowball sampling technique, some female IVs farmers have been identified and those ones have been used to identify other women carrying out the same business activity (Farm Africa 2009).

Data collection was done using questionnaires and through interviews. Data was analyzed using SPSS packages. Descriptive statistics were exploited to analyze data.

RESULTS AND DISCUSSION

This section presents and discusses the research results. The issues discussed include the socio-economic demographic characteristics of the respondents, their knowledge and perceptions of IVs, rural women's empowerment in Africa, women and agricultural livelihood in sub-Saharan Africa, the challenges and prospects of indigenous vegetable production in Africa, and women economic empowerment, innovation and community resilience in Rwanda.

Socio-economic and Demographic Profile of the Respondents

This section presents the socio-economic and demographic variables of the respondents that influenced the production of IVs in the study communities living adjacent to the Volcanoes National Park. These included the age, marital status, family size and the duration respondents have lived in the study area. Table 1 shows that the majority of respondents are adults between (30-50) with 65.3 percent. Table 2 indicates the majority (58.8%) of respondents were married. Although a large percentage of respondents are married, a significant number are widows. Through interviews it was found that widowed

Table 1: Age of respondents

	Age of respondents	*Frequency*	*Percent (%)*
Valid	Less than 30	10	8.3
	31-40	34	28.1
	41-50	45	37.2
	Above 50	32	26.4
	Total	121	100.0

women as heads of households faced challenges of food security. This situation emphasizes the importance for enhancing livelihood strategies for vulnerable social groups. Table 3 shows that a large proportion (64.2%) of the respondent households had 4-6 persons. This necessitates the significance of creating strong income bases to support large household sizes. Table 4 reveals that most of the respondents lived in this area adjacent to the VNP for at least 20 years. Interviews and direct observations showed that they had mastered the agricultural conditions of the area.

Table 2: Respondents' marital status

	Marital status	*Frequency*	*Valid Percent (%)*
Valid	Married	70	58.8
	Single	1	.8
	Divorced	5	4.2
	Widowed	43	36.1
	Total	119	100.0
Missing	System	2	
	Total	121	

Table 3: Family size per household

	Number of persons in persons in the household	*Frequency*	*Valid Percent (%)*
Valid	1-3	22	18.3
	4-6	77	64.2
	7-9	19	15.8
	Above	2	1.7
	Total	120	100.0
Missing	System	1	
	Total	121	

Table 4: Time respondents have lived in the area

	Period	*Frequency*	*Valid Percent (%)*
Valid	1-19	28	24.3
	20-39	49	42.6
	Over 40 years	38	33.0
	Total	115	100.0
Missing	System	6	
	Total	121	

Knowledge and Perceptions of Respondents towards IVs

Identifying the varieties and species grown was essential in examining the importance of indigenous vegetables to the rural women within the rural community adjacent to VNP. A comparison of indigenous and exotic vegetables was done to determine the perceptions of the respondent community members regarding the value of vegetables particularly indigenous vegetables (IVs) to the livelihood of rural women.

Table 5 presents the major types of indigenous vegetables (IVs). Direct observation and interviews showed that production of IVs in the study area was largely regarded as business for women. This is due to the fact that vegetable production does not require a large piece of land and is also less demanding in terms of inputs yet it has significant benefits compared to other crops. More specifically, IVs have been perceived by rural women as crops with high resistance to pests and diseases and also more resilient to climatic changes compared to exotic vegetables produced in the same climatic conditions. It was observed that each farmer could grow more than one type of IVs.

As shown in Table 6, exotic vegetables are also produced in the area adjacent to VNP and they contribute to the livelihoods of rural women. There was high preference for the IVs over exotic vegetables. This local consumer preference has been associated with perception that IVs are more nutritious and also regarded as a multipurpose commodity with more comparative advantages over exotic vegetables. IVs are preferred by the community as sources for food, medicinal sources, higher nutritional value and higher resilience to climate change, which is vital for food security and sustainable livelihood improvement especially for the rural poor. Production of indigenous vegetables is thus the major activity engaged in as one of the potential agricultural livelihood activity for the rural women.

The major variables that justify the importance of IVs as compared to exotic vegetables include health safety, nutrient content and food preparation and requirement for fewer inputs compared to exotic vegetables. This fact was evidenced by the relatively high mean, which is beyond 4. The grand mean was 3.6 and this is also high.

The preference for IVs by respondent communities necessitates the need for government support to create an enabling environment for rural women farmers involved in IVs production. Government policies, programs and plans should effectively integrate indigenous knowledge systems and practices in farming in order to enhance climate change resilience, food security and health safety among others.

Table 5: Types of IVs produced around Volcanoes National Park

Common name	*Botanical name*	*Vernacular name*	*Frequency*	*Percent (%)*
Nightshade	*Solanum nigrum*	Isogo	64	52.9
Gombo	*Abelmoschus esculentus*	Urudega	51	42.1
Spider plant	*Gynandropsis gynandra*	Isogi	50	41.3
Beans	Phaseolus vulgaris	Umushogoro	11	9.1
Pumpkin	*Cucurbita moscha*ta	Ibihaza	7	5.8
Chayote	*Sechium edule*	Ibidodoki	28	23.1
Cowpea	*Vigna unguiculata*	Inkori	9	7.4
Pumpkin's leaves	Vigna unguiculata	Ibisusa	29	24.0
Amaranthus	*Amaranthus graesizans*	Inyabutongo	6	5.0
Turkey Berry	*Solanum torvum Sw*	Intagarasoryo	5	4.1
Taro's leaves	*Colocasia esculenta*	Amakora	5	4.1

Table 6: Exotic vegetables produced around Volcanoes National Park

Common name	*Botanical name*	*Vernacular name*	*Frequency*	*Percent (%)*
White Cabbage	Brassica oleracea	Amashu	66	54.5
Carrots	Daucus carota	Karoti	36	29.8
Onions	Allium cepa	Ibitunguru	56	46.3
Spinach	Spinacia oleracea	Epinari	78	64.5
Leek	Allium ampeloprasum	Puwaro	51	42.1
Celery	Apium graveolens	Sereri	33	27.3
Tomatoes	Solanum lycopersicum	Inyanya	14	11.6
Persley	Petroselinum crispum	Parisili	4	3.3
Cauliflower	Brassica oleracea	Shufureri	15	12.4
Kale	Brassica sp.	Sukuma wiki	3	2.5

Rural Women's Empowerment and Sustainable Development in Africa

The role of rural women in the African society and the difficulties they encounter cannot be underestimated. Africa's development is envisaged through empowering women economically. As indicated in research, most African households depend on women for livelihood (Ministry of Finance and Economic Planning 2007). This implies that the economic empowerment of women is a prerequisite for sustainable development and livelihood. The empowerment of women is important for sustainable development and livelihood because women tend to transfer knowledge to children and members of the household. At the international level, Dhaliwal (1998) shows that the rapid growth of women-owned businesses in Africa, Asia, Eastern Europe and Latin America positively impacts job creation and poverty reduction. Network on Gender Equality (2011) reveals that women perform sixty-six percent of the world's work, and produce fifty percent of the food, yet earn only ten percent of the income and own one percent of the property.

Women and Agricultural Livelihoods in Sub-Saharan Africa

According to Farm Africa (2009), eighty percent of rural people in sub-Saharan Africa depend on smallholder agriculture for their livelihood, and women provide seventy percent of the agricultural labor and produce over ninety percent of the food. Despite the hugely significant contribution that women make to Africa's food security, their voices are often ignored by policymakers. Progress in bringing women's issues into the policymakers' agendas has been slow and it has been further reduced by local traditional structures that often favor men. Throughout sub-Saharan Africa, rural women consistently lack access to land, credit, agricultural inputs like seeds, training, technology, and information on their rights, for example, land rights, meaning they cannot escape poverty and lead the life they want. In sub-Saharan Africa, women spend large amount of time transporting supplies for domestic use, such as fuel wood and water and traveling between home and the field for domestic tasks. As rural sub-Saharan African women receive education and are recognized with

a higher legal status, they provide their households with superior nutrition, stronger food security and increased access to healthcare. In spite of this contribution, women in sub-Saharan Africa constitute only fifteen percent of the region's landholders (Whitehead and Kabeer 2001).

The Challenges and Prospects of Indigenous Vegetable Production in Africa

Traditionally, Africans made use of edible fruits and leaves of plant species growing wild as weeds. These edible plants were well known to the rural communities and were often collected from the wild or planted in home gardens as intercrops with staples. Recent surveys reveal that indigenous fruits and vegetables were consumed by the rural populations for nutrition and food security (Pasquini and Young 2007; Abukutsa-Onyango 2011).

The hidden potential of indigenous fruits and vegetables therefore needs to be exploited such that it plays a pivotal role in solving malnutrition, food insecurity and poverty challenges facing Africa. The contribution of indigenous vegetables to household food security for example through kitchen gardens common in urban centers, or home gardens found in villages, is characterized by intercropping systems, a food production strategy, which has been overlooked by both policymakers, and extension specialists (International Horticultural Congress 2014). The importance of traditional vegetables is emphasized for daily requirements of vitamins, minerals, and proteins. However, there is reduced effectiveness in ensuring food security all year round, due to the fact that very few traditional vegetables are cultivated (Rubaihayo 2002; Abukutsa-Onyango 2011).

Indigenous vegetables (IVs) have a strategic food security role, offering significant opportunities for the poor, particularly rural women, through farming, processing and trading activities. Despite their importance, indigenous vegetables have been regarded as minor crops with little economic importance and therefore have not been a focus for research and development in Africa. Little is still known of their productive potential, economic value and contribution to household nutrition and livelihoods. As noted by Schippers (2002), IVs are highly important for nutrition, food security and sustainable livelihoods but they are still neglected although they are resilient to climate change and require less work and inputs.

IVs production contributes to the livelihoods of rural communities as well as environmental conservation and sustained agricultural production and can also be referred to as resource-efficient or resource effective agriculture. IVs are in many cases highly nutrient-dense, both in vitamins and minerals (International Horticultural Congress 2014). Thus they are powerful tools in the present battle against malnutrition and non-communicable diseases worldwide and especially in the Pacific Island communities and other locations in Africa and Asia where currently poor dietary choices have led to critically high human health costs to society. According to Kimiywe et al. (2007), African indigenous leafy vegetables have recently been attracting research attention not only in terms of their inherent nutrition quality but also the healing power of some of these plants. Diversification of diets through increased utilization and consumption of these vegetables would go a long way in alleviating hidden hunger and malnutrition (Schippers 2002; Iiyama 2006; Adhikari 2006).

IVs have special attributes compared to exotic vegetables: They are highly nutritive, require minimal management, they are easy to grow, mature faster, and have vigorous growth and easy to transport. Some types of IVs are preferred for their soft and easy to cook attributes and also serving as a multipurpose commodity with medicinal and food values (Rubaihayo 2002; Abukutsa-Onyango 2011; International Horticultural Congress 2014).

On the other hand, production of IVs is associated with a number of socio-economic and biophysical constraints including inadequate capital especially by the rural poor women, high price of fertilizers, poor quality seed and lack of money to buy fertilizers, droughts, pests and diseases and low soil fertility in some areas. Some of the recommended best practices for IVs include harvesting at proper maturity, use of clean and sharp tools and with clean hands, using containers that protect and allow air circulation, harvest during cooler parts of day and processing if long term storage is desired (Rwanda Agriculture Board 2013).

Women Economic Empowerment, Innovation and Community Resilience in Rwanda

Historically, women have worked as unpaid employees in their spouses' enterprises, partic-

ularly in an international context where available employment alternatives are limited (Dhaliwal 1998). The issues and problems affecting rural women in Rwanda are diverse in nature and there is therefore no one-way to effectively address them. Rural women are faced with unending challenges like lack of collateral to get credit to purchase agricultural inputs such as fertilizers and even those that are accessible are expensive. Rural women do a lot of work that is not recognized and the workload in homes is not evenly distributed in the family. Rural women play a vital role through their engagement in agriculture, which contributes to development. The average woman in Rwanda works in agriculture, for long hours every day, and most of what she grows is consumed by her family, leaving her with little income.

The Network on Gender Equality (2011) reveals that Rwanda has made great strides in promoting gender equality driven by a strong commitment by the government. Gender equality is enshrined in the constitution and Rwanda was the first country in the world to have more than fifty percent female members of parliament (Government of Rwanda 2003). There is a Ministry for Gender and Family Promotion, a gender monitoring office, a commitment to gender based budgeting, and in recent years there has been a strong emphasis on fighting gender based violence. Women have the same rights to inherit land as men. The National Women Council has also played a key role in promoting women in leadership through awareness and capacity building. Members of the National Women Council are also members of the planning, policy and advocacy consultative committees at the cell level.

The government and its development partners have clear investment strategies to ensure increased production for rural women like access to soft loans, affordable agriculture inputs, improved quality rural extension service, adoption of measures to make extension workers accountable to women farmers and creation of rural women farmers' guarantee fund. The designed pro-poor programs such as Vision 2020 Umurenge Prograe (VUP), a social protection program targeting poor households with a variety of financial and social development assistance and the "One cow per poor family" program (Girinka), which aims at giving a cow to every poor household, have reduced the economic dependence of rural women and increased their participation in controlling family resources. The establishment of Savings and Credit Cooperatives (Umurenge SACCOs) at the lowest administrative governance level (sector level) has also boosted rural women empowerment. As a way of empowering these rural women, their capacity is boosted through training in key areas like leadership, community development and decision-making to nurture and further enhance their self-esteem.

According to Rwanda Women's Network (RWN 1997), women empowerment is a potential and solid strategy to build resilient communities. For the purpose of this paper, community resilience is a measure of the sustained ability of a community to utilize available resources to respond to, withstand, and recover from adverse situations. In this respect, indigenous knowledge systems and practices in farming are being searched out and institutionalized following their local and global importance. Some of the key indigenous practices that have been successful in Rwanda include Gacaca (local court of justice), Umuganda (community work) and Girinka (one cow per poor household), (MINALOC 2008; RoR 2012; Chika 2014). Use of indigenous knowledge permeates all disciplines including agriculture and animal husbandry. In this regard, research was undertaken to establish the role of indigenous vegetables (IVs) in enhancing the livelihood of rural communities' particularly rural women. Indigenous vegetables in Rwanda have been perceived by local communities to be more effective in terms of production costs, nutritional value, resilience to climate change, resistance to pests and diseases, thus giving considerable returns compared to exotic vegetables (Gapusi et al. 2013; Gahakwa et al. 2014).

CONCLUSION

The study investigated the enhancement of livelihood of rural women through indigenous vegetable (IVs) production around Volcanoes National Park in Rwanda. The major findings of the study were that the majority of respondents were adults between 30 and 50 years of age, thus indicating that their decisions on the choice for livelihoods could be reliable given their age and experiences, and they were married, widowed and heads of households who faced challenges of food security with household sizes of

4-6 persons. This necessitated the significance of creating strong income bases to support large household sizes. Most of the respondents lived in the area adjacent to the Volcanoes National Park for at least 20 years. They demonstrated mastery of the agricultural conditions of the area. It was found that the major types of IVs grown in the area were *Night shade, Gombo, Spider plant* and *Pumpkin leaves*. These were preferred by respondent rural women farmers over exotic vegetables, due to their higher nutritional value, resistance to pests and diseases, resilience to climatic changes and multiple uses including food and medicine.

RECOMMENDATIONS

Government policies, programs and plans should effectively integrate indigenous knowledge systems and practices in farming in order to enhance climate change resilience, food security and health safety among others. Agriculture sector strategies in Rwanda would enhance the livelihoods of rural women and also contribute towards sustainable community livelihoods if it integrates indigenous knowledge systems and practices. Incorporating indigenous knowledge systems and practices into Rwandan agriculture would economically empower poor rural women, foster economic and social growth within households and communities, improve health status of women and children, and also promote peace and reconciliation. The major policy implications of the findings of the study is that the cultivation of indigenous vegetables should be encouraged and supported because of the strategic role they play in enhancing rural livelihoods especially for rural women as the major producers.

REFERENCES

Abukutsa-Onyango MO 2011. *Researching African Indigenous Fruits and Vegetables*. Nairobi-Kenya: Jomo Kenyatta University of Agriculture and Technology.

Adhikari R 2006. Economic dimension of empowerment: Effects of commercialization and feminization of vegetable farming on social status of women in an urban fringe of Western Nepal. *Himalayan Journal of Sociology and Anthropology*, 3(2008): 86-105.

Dhaliwal S 1998. *Silent Contributors: Asian Female Entrepreneurs and Women in Business*. Women's Studies International Forum. Centre for Asian Entrepreneurial Research (CAER). London: Roehampton Institute.

Environment and Development Activities (ENDA) 2001. *Enhancing Sustainable Livelihoods in Drought-Prone Areas, NGO Initiatives in Risk Reduction: Case Study No. 15.* Zimbabwe and International Institute for Sustainable Development (IISD). Winnipeg, Canada: International Institute for Sustainable Development (IISD).

Farm Africa 2009. *Listening to the Rural Women in Sub-Saharan Africa*. London: Farm Africa.

Food and Agriculture Organization (FAO) 2008. *The State of Food Insecurity in the World: High Food Prices and Food Security Threats and Opportunities.* Viale delle Terme di Caracalla. Rome: FAO.

Gahakwa D, Asiimwe T, Nabahungu NL, Mutimura M, Isibo T, Mutaganda A, Ngaboyisonga C 2014. *A Decade of Agricultural Research in Rwanda: Achievements and the Way Forward.* Switzerland: Springer International Publishing.

Gapusi R, Isibo T, Nyirigira RA, Gashamura RF, Sirikari S, Uwimana J, Byamushana C, Bizeye B, Hakizimana P 2013. *The State of Plant Genetic Resources for Food and Agriculture in Rwanda.* Kigali: Rwanda Agricultural Board.

GENDERNET 2011. DAC Network on Gender Equality. Women's Economic Empowerment, Issues Paper. *Paper presented by the DAC Network on Gender Equality (GENDERNET) at DAC Network on Poverty Reduction's Task Team on Empowerment.* France, April 1.

Government of Rwanda 2003. *The Constitution of the Republic of Rwanda.* Kigali: Government of Rwanda.

Government of Rwanda 2009. *National Evaluation Report on Implementation of the Beijing Declaration and Platform for Action (1995) and the Outcome of the Twenty-Third Special Session of the General Assembly*. Kigali: Government of Rwanda.

Iiyama M 2006. Livelihoods Diversification Patterns Among Households and Their Implications on Poverty and Resource Use: A Case Study from a Kerio River Basin Community. *The Land Use Change, Impacts and Dynamics (LUCID) Project Working Paper Series*, No. 51 Nairobi: International Livestock Research Institute.

International Horticultural Congress 2014. *Promoting the Future of Indigenous Vegetables Worldwide.* Brisbane: *ISHS Section Vegetables, Working Group Underutilized Plants and the Commission Plant Genetic Resources.*

Kimiywe J, Waudo J, Mbithe D, Maundu P 2007. Utilization and medicinal value of indigenous leafy vegetables consumed in urban and peri-urban Nairobi. *African Journal of Food, Agriculture, Nutrition and Development Rural Outreach Program*, 7(3 and 4): 27- 32.

Ministry of Finance and Economic Planning 2000. *Vision 2020, July 2000.* Kigali: Ministry of Finance and Economic Planning.

Ministry of Finance and Economic Planning 2007. *Economic Development and Economic Reduction Strategy 2008-2012*. Kigali: Ministry of Finance and Economic Planning.

National Institute of Statistics of Rwanda 2006. *Integrated Living Conditions Survey 2005/2006.* Kigali: National Institute of Statistics of Rwanda.

Pasquini M, Young E 2007. Networking to Promote the Sustainable Production and Marketing of In-

digenous Vegetables through Urban and Peri-urban Agriculture in Sub-Saharan Africa (IndigenoVeg). *Proceedings of the International Conference on Indigenous Vegetables and Legumes.* Prospectus for Fighting Poverty, Hunger and Malnutrition Hosted by KU Leuven ISHS *Acta Horticulturae* 752: 10.17660/ActaHortic.2007.752.3. London, Sterling.

Rubaihayo PR 2002. *The Contribution of Indigenous Vegetables to Household Food Security in Uganda*. Washington DC: World Bank Group.

Rwanda Agricultural Board 2013. *Girinka Program: A Success Story.* Kigali: Rwanda Agricultural Board.

Schippers RR 2002. *African Indigenous Vegetables, an Overview of the Cultivated Species 2002-Revised Version on the CD-ROM*. Aylesford, UK: Natural Resources International Limited.

The Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) 2014. *Empowering Rural Women with Knowledge in Ensuring Food Security.* Wageningen: The Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA).

Whitehead A, Kabeer N 2001. Living with Uncertainty: Gender, Livelihood and Pro-poor Growth in the Rural Sub-Saharan Africa. *Working Paper* 134. Sussex, Brighton: Institute of Development Studies.