

Socio-economic impact of rural farming structure in Rwanda: Case of KOPAKAMA¹ coffee growing cooperative and coffee washing station, Rutsiro District, Western Province.

GISARO M. Ya-BITITI
National University of Rwanda
E-mail: mbgisaro@yahoo.fr.

Abstract

Coffee is the main source of income of the household producers of this crop in Rwanda. It contributes significantly to the inflows of foreigner currencies to the national economy. Although it is grown on only 6.3% of the total cultivated areas, it is the main activity of 500.000² coffee growers households at countrywide³. Since its introduction in the country in 1904, coffee has always been operated by individual producers⁴ isolated in their villages. After the liberalization of the coffee sector in Rwanda in 1998, the quantity produced has steadily decreased and the quality deteriorated. This affects the price and income of coffee growers. To address this issue, the Government of Rwanda sensitized coffee growers countrywide to operate into cooperatives and set up coffee washing stations (CWS). The objective was to improve the quality and export fully washed coffee that is better sold on international markets. Coffee washing stations are then considered as mean for producing high quality of coffee, they are mainly run by cooperatives, which are structural elements in the rural areas. Through these structures, such us cooperatives and coffee washing stations in rural

¹ KOPAKAMA: *Koperativey'Abahinziba Kawaba Mabanza* = (Co-operative of coffee growers of Mabanza).

² Within households in Rwanda, all assets are held by the coffee growing activity including children who exercise some activities at the farm level (Explanation given by the General Director of OCIR-Café at the Conference on the development of the coffee sector in Rwanda, on 13th march 2011).

³ OCIR-Café, Report, 2011, Kigali.

⁴ Guichaoua A. (1989). *Destins paysans et politiques agraires en Afrique centrale, l'ordre paysan des hautes terres centrales du Burundi et du Rwanda*. Paris : L'Harmattan.

areas of Rwanda, jobs are created for coffee producers, loans are granted, farmers are motivated due to the increase of income, the market is guaranteed and the prices become attractive for the members. Thus the socio-economic welfare of producers is improved which reduce poverty among coffee growers households. This study focuses on the analysis of the impact of this structure on the socio-economic development of producers and the rural surrounding environment of Mushubati sector.

Keywords: *Coffee, growers, Kopakama cooperative, coffee washing station (CWS), income, farming, socio-economic development.*

I. Introduction

The Rwandan economy is based mainly on agriculture. This sector employs 87.3% of the working population against 2.6% in industry and 10.1% services⁵. The agricultural sector in Rwanda contributes to 36% of the GDP, compared to 14% for industry and 44% for the services respectively, at constant prices of 2006⁶. Agriculture provides more than 61% of exports including coffee, tea and pyrethrum represent more than 73% of total exports⁷, Rwanda's economy significantly depends on the agricultural sector, particularly agricultural exports. This provides currency essential to the development of the country and remunerative prices for producers. The number of coffee trees is estimated at about 800 million feet. Since its introduction in the country in 1904 by German Missionaries⁸, coffee has been operated by individual producers generally poor and isolated in the coffee growing areas of the country.

In 1998, the Government of Rwanda initiated the liberalization of the coffee sector; this policy had three immediate consequences⁹: (i) It exposed local producers to world market price fluctuations. (ii) Farmers were forced to start relying on private input and output markets. (iii) It released coffee producers from the obligation to produce coffee. By 2000, the Government of Rwanda seemed trapped in a “poor quality-low productivity paradigm of coffee sector” with most coffee sold at prices below the international

⁵ Ministry of Finance and Economic Planning (MINECOFIN), Kigali, 2012.

⁶ Adjustments are 6% in constant 2006 prices.

⁷ NBR: National Bank of Rwanda, Report 2012, Kigali.

⁸ OCIR-Café, *op-cit*, 2011.

⁹ Verpoten M. et al. (2012). The rwandan coffee sector: out of the ordinary, in Reyntjens F., Vandeginste S. & Verpoorten M. (éds.). *L'Afrique des grands lacs*. Annuaire 2011-2012. Paris : L'Harmattan, 397-426.

reference price for mild coffee. In that context, the Government of Rwanda, invested in the quality of coffee and promoted coffee growers cooperatives in rural areas of Rwanda. Farmers formed cooperatives to produce and market a good quality coffee that can secure better prices on international markets. The purpose of this structure was the isolation and speculation trader's intermediaries in order to fight against poverty gnawed most producing households living in rural areas. Among the concrete policies pursued, the focus lies on crop intensification, increased commercialization of agriculture, farm wage employment and agro-business activity. Besides their high value-to-weight, another advantage of high-value crops is that they are less prone to downward price trend that characterizes many of the traditional export crops (Verpotenet *al.*, 2012). It is in this context that coffee farmers of Mushubati sector formed KOPAKAMA coffee growers and built the coffee washing station (CWS) that wash and export fully washed coffee to increase their socio-economic development and reduce poverty for the coffee producers.

A cooperative is collectively owned firm, established to support the economic performance of its members (Harper, 2001). It generally means a group of individuals bound together to achieve a common goal. Cooperative is structured around the coffee washing station which is means, techniques and processing methods available to the cooperative to produce fully washed coffee. This transformation is justified for socio-economic benefits and techniques offered by the coffee washing station especially in rural Rwanda. Indeed, the structure of farming in coffee-growing cooperatives and CWS stimulates income to improve living conditions of producers: price increase, extension, jobs created, health, nutrition, children education, housing, credit, market and other services and socio-economic benefits to members... Coffee cooperatives in Rwanda have emerged with many purposes: (i) Production of high quality coffee through washing station. (ii) There are involved in the provision of services to growers. (iii) Improvement of farmers' participation in the coffee sector. Coffee is the "beans" obtained from the groups a small evergreen tree of genus coffee while farmers are the individuals whose primary job function involves livestock and or agriculture, with the goals of earning high price for their produce and ultimately improve their income and livelihoods (OCIR-Café, 2008).

The coffee farming in Rwanda has passed through a difficult period over the last decade, with sharp decline in both production and quality. The general situation is fairly well known and documented (MINAGRI, 2010). The main causes of this decline are for instance due to: delays in

transformation, notably related to Rwanda's geographical position (a landlocked country), where coffee producers face high transport costs, moving coffee cherries quickly over Rwandan roads is one concern, moving processed beans out of the country in a timely and cost effective way is a second concern. Other concerns are related to the costs in the industry and financing, the farmers were unable to pay cost of coffee processing, the intensive cultivation, prices fluctuation of coffee on international market (Wanyama *et al.*, 2009). Due to the Genocide of 1994 in Rwanda, many coffee farmers in Mabanza lives without children or parents, this cost producers in terms of manpower during harvesting coffee period for example.

In the case of Mushubati sector, before the existence of KOPAKAMA cooperative, there were many problems and the following are some of them: (i) Poor agricultural methods like mixed cropping, poor methods of punning and lack of washing station that result into poor quality of products. (ii) There was a lack of proper storage facilities and this made coffee farmers vulnerable to vagaries of weather affecting what they produce before they are sent to market. (iii) Coffee was not catered, for farmers could see coffee as useless. As time goes on, they come to know the role of coffee. (iv) There was poor quality coffee due to poor technology, where people could harvest coffee and expose it to the sun where sometimes the thieves could steal it but now the situation has changed (KOPAKAMA, 2011).

To eradicate these problems abovementioned, the Government of Rwanda adopted the agricultural policy in which the main attention must be drawn to traditional export crops, especially coffee (MINAGRI, 2010). Although, the Rwandan coffee is a traditional export crop for which prices heavily fluctuate subject to international markets conditional, there exist high-value niches for specialty coffee that fetch a high and more stable price on international markets. Since Rwanda has excellent grow conditions for specialty coffee, the coffee sector is identified as an obvious candidate for a turnaround program. The first Rwandan Poverty Reduction Strategy Paper states that "although coffee production in Rwanda has been stagnant at a low level for the last teenager, the sub-sector has great potential, through replanting for the existing old bushes with new high-yielding varieties, and the construction and operation of washing stations in rural areas to produce fully washed coffee". The report envisaged that a turnaround of the sector could help reduce Rwandan's structural trade deficit and have considerable effects on rural income, employment and poverty reduction as the sector is dominated by small-scale farmers (Verpoten *et al.*, 2012). The export of

coffee cannot succeed without improvement of coffee processing and modernization on CWS which increase revenue of farmers and therefore improve their socio-economic welfare (OCIR-Café, 2011).

It is in this framework that the Government of Rwanda makes efforts in order to increase the value of exported coffee. International donors provided funding, technical assistance and training, launching programs like the Sustaining Partnerships to Enhance Rural Enterprise and Agribusiness Development (SPREAD). It is in that way concrete policy measures were taken included installing coffee washing stations to produce high quality fully washed and a successful marketing campaign abroad (MINAGRI,2011). Although the Government makes all effort for increasing value of exported coffee, the contribution of KOPAKAMA cooperative on socio-economic development of farmers is not well known.

In Mushubati sector, people engage themselves in many economic activities. Among them: agriculture, livestock, forestry activities, honey production, trading, cooperatives. The economic activity is mainly based on crop production which is mostly used for feeding families. Therefore, coffee farming was adopted to increase savings and income, develop families and economic situation as well. Today production of coffee is being enjoyed by big number of Mushubati population where the majority is participating in such production of fully washed coffee through coffee washing station and farmers cooperatives. These structures are aimed to produce high quality coffee which increases price and income for producers. The demand for coffee remains very high because it's source of income for the households (Rutsiro District monograph, 2007).

KOPAKAMA is an abbreviation of "*Koperative y'Abahinziba Kawaba Mabanza*", which means "Coffee growers cooperative of Mabanza". It was founded by small scale coffee growers of Ex-Mabanza commune now located in Rutsiro District, Western Province. The KOPAKAMA coffee cooperative was created on October 15th 1998 in its first General Assembly which took place in Rubengera sector. It took legal personality in 2006 while before KOPAKAMA worked as an association, with a trading Licence N^o RCA/1032/2009 of July 27th 2009. The KOPAKAMA is spread across the length mountain of the Western Province of Rwanda, a very rooftop of Africa, the watershed between two great rivers: Nile and Congo extending from the natural forests like Gishwati, Mukura and Nyungwe in South to the volcanoes in North. To reach its objectives KOPAKAMA built in 2010 a coffee washing station at Mushubati from a long term credit in order to produce a fully washed coffee which is high evaluated on international markets. Good prices motivate farmers and promote coffee

quality in Mushubati. It is a member of Misozi coffee company which has a certified Licence by Fair Trade (KOPAKAMA report, 2010).

The research questions that this study will attempt to answer are: (1) what are the main activities of Kopakama cooperative? (2) Does Kopakama contribute to socio-economic development of farmers? (3) How Kopakama cooperative and its coffee washing station contribute to increase income and employment opportunities of members? (4) How Kopakama assist members to access to coffee credit in improve their coffee production? To respond to these questions, the following assumptions have been given in the research: (i) Through the activities realized in the coffee washing station and the cooperative, members income is increasing and the employment opportunities are provided during the harvesting and the treatment of coffee berries. (ii) The Kopakama contribute to social-economic development of the farmers of Mushubati sector in general and its members in particular. (iii) Through the activities of coffee washing stations and the Kopakama cooperative, the socio-economic development the members have improved very significantly. (iv) The Kopakama cooperative provides grants and loans to its members to assist them to satisfy some of their needs.

II. Objectives of the study

This paper aims to examine the rural farming structure through the tripartite relationship between Coffee farmers, KOPAKAMA and CSW. The overall objective of the study is to analyze the structure of the farming in Rwanda through the CWS and coffee growing of Kopakama cooperative. The analysis focused on assessing the socio-economic dynamics of peasant through the station and coffee-growing cooperative in improving the living conditions of farmers. Specifically, the study would like: (i) To analyze the impact of the presence of CWS and coffee-growing cooperative in the process of structuring the peasantry in Mushubati sector. (ii) To examine how the CWS and Kopakama cooperative stimulate the participation of coffee-growers to take part in the activities and initiatives of promoting their CWS and cooperative. (iii). Assessing the socio-economic effects of CWS and Kopakama on the welfare of members to make suggestions to enhance the dynamic peasant. Because of their presence in rural areas, these structures allow the structuring of the rural world. In terms of profits and benefits and improve the living conditions of coffee farmers socio-economic.

III. Materials and methods

The research was carried out on Kopakama coffee cooperative in Mushubati sector, Rutsiro District, Western Province of Rwanda. The parts of the Western province are found in a region covered by a chain of mountains with a multitude of rivers snaking between them that produce attractive scenery. Farming and livestock are the dominant sectors in the Western Province of Rwanda largely due to high soils fertility. On numerous hills and valleys found in the province a multitude of crops are grown. These include food crops and cash crops (coffee and tea) of which there are respectively washing stations, factories and drying grounds (MINAGRI, 2010). The methodology is based on observations and participation of coffee growers in the collection and interpretation of field data to analyze the impact momentum provided by Kopakama and coffee washing station (CWS) in improving the socio-economic welfare of producers, development from this structure for members and the rural environment. The analysis of household-use coffee growing relations: CWS-Producer's-cooperative, operating the treatment and marketing involves the use of a systems approach for analyzing the relationship between the various components of the system. The comparative study between members and non-members and evaluates the socio-economic advantages provided by the CWS and Kopakama cooperative to coffee farmers of Mushubati sector. The study is based on empirical and inductive approach of primary and secondary data from direct observations. The methodological approach is hinged on interviews, literature review with a questionnaire addressed to coffee farmers.

Multi-stage sampling technique was employed in the selection of farmers and respondents. In the first stage, we selected members of Kopakama who was chosen purposively for this study due to the nature of their activities with the CWS and the Kopakama. The rational choice is needed on the farm, because the systems are interdependent and mutually reinforcing. A snowball sampling was performed to find non-members: members indicated some of their neighbors who are not members and in turn, during their interviews, these would name non-members. The aim was to make a socio-economic comparison between growers. Producers were selected a reasoned guided by a number of predefined criteria: (i) Be growers with at least 150 trees of coffee, with an experience of over 5 years in the coffee growing operations. (ii) Members of a cooperative for over three years at least. (iii) A household of at least 3 people. (iv) An active involvement with the cooperative. Households to be surveyed were identified through lists, reports and statistics of CWS and cooperative for the period.

Data was therefore essentially sourced from members and leaders of Kopakama, and its CWS. As the study is comparative between members and non-members, we surveyed producers which are not members of the cooperative, in order to understand their motivations to be not members, and measure the income and benefits from this cooperative group. Secondary information through documentation research, various documents, books, and annual reports and other information from the records kept by the cooperative viewed to assemble relevant information. This was important because in evaluating the contribution of Kopakama in socio-economic development of farmers. The first step was to look at the flow of funds through Kopakama cooperative in general and CWS in particular improve the socio-economic development of farmers. Data were analyzed using descriptive statistics to realize the objectives. Specifically the socio-economic profile was analyzed in the assessment of factors that influence coffee grower's attitude towards the CWS and Kopakama. Last July 2012 members of Kopakama were 610 (253 women and 357 men). Analyses were made to determine the sample size, incorporating the additional data under observation and interviews with various stakeholders in the coffee sector.

According to surveys conducted by OCIR-Café (2008) and NIRS (2010) three categories of coffee farmers coexist in Rwanda in general and Mushubati sector in particular:

- Category A: 50 % of growers have 150-500 coffee trees;
- Category B: 40% have between 500 and 1000 coffee feets;
- Category C: Only 10% of producers have over 1000 coffee trees.

Survey was conducted during the coffee-campaign 2012 in all 5 zones covered by KOPAKAMA coffee-growing cooperative and CWS study. The numbers of farmers and their respective zones are: Mageragere (138), Sure (126), Gitwa (116), Bumba (117) and Cyarusera (113). Due to inadequate resources, it was difficult to investigate the whole population, a sample of 10% for each zone members was therefore deemed necessary. The sample size was 61 cooperative members (45 males and 16 females). In order to make a comparison 15 non-members were also interviewed, 3 by zone, with a total of 76 farmers.

Table 1 : Categories and sample considering by coffee cooperative

| Members of KOPAKAMA cooperative | | | | Non-members of KOPAKAMA | | |
|---------------------------------|--------------|-------------------|-----------|-------------------------|-------------------|----------|
| Zone | Category (%) | Number of farmers | | Category (%) | Number of farmers | |
| | | Male | Female | | Male | Female |
| Zone. A | 50% x 61 | 23 | 8 | 50% x 15 | 5 | 2 |
| Zone. B | 40% x 61 | 18 | 6 | 40% x 15 | 4 | 2 |
| Zone C | 10% x 61 | 4 | 2 | 10% x 15 | 1 | 1 |
| Total | | 45 | 16 | | 10 | 5 |

Source: Our survey, July 2012.

In search of the information regarding the current management of the CWS of Kopakama, interviews and discussions were conducted with some key resource persons responsible of the daily management of these organizations. It includes: 1 Technical manager of CWS, 1 Executive Secretary of the cooperative, the President of Kopakama, 1 member of the Board of Directors (BoD), the Chief accountant, 1 member of the committee of supervisory board, 1 Agronomist, the Head of the cooperatives in Mushubati. In order to have the needed information 5 leaders in charge of monitoring and supervision of growers 1 by each coffee zone was also interviewed. The survey was administrated on a sample of 76 coffee growers in Mushubati sector (61members of Kopakama and 15 non-members). Farmers were considered as target group of our research, whose answers was necessary to compare the results of members and non-members. A structure survey instrument was developed and pre-tested in a pilot survey/focus-group discussion of 24 farmers (3 members and 1 non-member by each zone, plus 4 monitors). This was to help validate the questions and check the information to be supplied later by the individual's farmers. A farmer to farmer visit was next undertaken to collect data, which include farmer's opinion on the trend of social and economic changes since they become members of the KOPAKAMA.

IV. Results and discussion

1. The socio-economic impact of the rural farming structure

The economic impact of the CWS on producers is substantial. With the coffee washing station of Mabanza, coffee growers received the equivalent of 3 times the price of coffee in the local market. This allowed the growth of additional income in the households of the producers, a significant contribution and outstanding. The average price of coffee on the

international market is three times better than those prevailing locally. From 2002 to 2010 period, the arithmetic average price of 2.71 times the local prices, with two extreme prices upward and downward, respectively 2006 prices 3.84 times (from RwF 527 to 2.022) and 2005 a favorable year in terms of local prices compared deemed best for others¹⁰ The price of 2005 was evaluated at 902 to RwF 1.910 against the external market or 2.11times the local market prices. These prices increase the income among three years where in 2009 the total income was RwF 19,400,000, RwF 25,530,000 (2010), while in 2011 the total income of coffee was RwF 25,750, 000. This increase of income is due to the rising of coffee price where in year of 2009-2010 price raises from 200 up to RwF 230/kg and in 2010-2011 price rises from 230 up to RwF 300/kg (KOPAKAMA, 2011). However, the biennial cycle of Arabica coffee, with an alternation of high and low production years, contributes further to the volatility (World Bank, 2011). Even though the coffee production presented the fluctuation, the income raised due to the rising of coffee price as show in Figure 1.

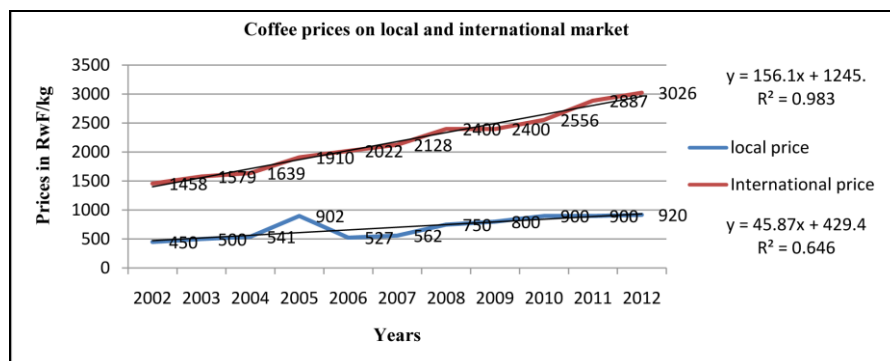


Figure 3: Evolution of coffee prices on local and international markets (2002-2012).

The reading of the Figure 1 points out that foreign markets of Kopakama coffee production experiencing extraordinary growth and get good prices valued at \$4/kg of green coffee against \$0.2 to 0.3/kg on the local market in Mushubati. International prices are attractive to commercial coffee producers and members, especially since they are three times far higher than the local ones. The fully washed coffee of Kopakama costs RwF 2.400 to 2.556 (\$4.4) against RwF 800-900 (\$1.5) for the ordinary coffee sold at local market in Mushubati (July 2012).

¹⁰ Calculations through our survey and KOPAKAMA Report, 2012.

The contribution of coffee washing station and KOPAKAMA on socio-economic development of farmers is very relevant. The social impacts of the cooperative and CWS as confirmed by the respondents are the following: 78.1% of members are buying food in order to improve their health conditions, 68.2% are having clothes in order to change their style of wearing. The cooperative facilitates them also to pay school fees for their children (87.8%) against 56.1% for non-members, the cooperative pay for medical insurance of the family members (93.6%), 57.8% for non-members. The cooperative assist farmers to acquire and develop their skills through trainings on coffee production, harvesting, management of cooperative, income generating (73.8%). Due the presence of cooperative and CWS in rural areas, the non-members shared experiences from members. The economic impacts are seen through the Kopakama and CWS activities: purchasing cherries, transport and treatment (93.1%), employment opportunities during the harvesting and treatment of coffee (97.6%) where they work in coffee transportation, washing, sorting and drying (Wintgens, 2009). According to the responses given by non-members, during the harvesting period, they lose a lot of money for treatment, transport and looking for local buyers whom impose them the price of the parchment coffee (89.7%). We observe that the quality of parchment coffee produced manually by non-members is bad, which decrease the price of coffee sold at local market (RwF 900 against 1500 given to members).

When members are working together it leads to social cohesion between them and it enhances partnership as underlined by respondents (100%). This is not relevant for non-members whom are working alone. Members recognize that saving is also an important benefit provided by their cooperative (85.4%), because all payments are done through the Popular bank, the Umurenge SACCO¹¹ where some amounts are saved by beneficiaries at the monthly interest of 1.5%¹². The non-members has to look for the loan from the commercial banks, given with many conditions, with annual interest evaluated between 14 and 18% as responded by 87,1%. Members agree that modern houses were built and have been repaired

¹¹SACCO: *Saving and Credit Cooperative*. Through the cooperative saving become a culture for every member so as to enhance the development, no country can develop without saving and no individual either, every farm work with the sole purpose of improving his social welfare and the only way to achieve this is through savings.

¹²In others financial institutions the rates of interest are between 2 and 2.5% a month.

(39.7%) against 5.9% for non-members. Members got more advantages through trainings, workshops and visits of technicians. 2.4% of farmers participate in buying and repairing machines used in agriculture like mills, sprayers and hand chaff cutters and others, 36.6% bought domestic animals especially cows for providing milk and organic manure against 9,3% of non-members (our survey, July 2012).

The above results show that Kopakama and CWS are a great pillar in socio-economic development of farmers in Mushubati sector. Jobs are provided and the better price of coffee are given where the farmers find the money of buying the many things they need in order to ameliorate their life conditions and make saving and investment for the future (Verpoten *et al.*, 2012). The impact of Kopakama in the community of Mushubati sector is very significant. It helped a big number of the population (79%) to access safe water and electricity energy (34%) where in manner of searching water of using in CWS in its processing by the cooperative immediately it facilitates those people the find that easily (67%) (KOPAKAMA report, 2011).

2. CWS: Stimulation of the activities of micro-finance in Mushubati

In Rwanda, rural area and coffee activity have not been attractive for a long time by financial institutions due to the lack of guarantee. The CWS and Kopakama coffee cooperative have accelerated the emergence of micro-finance programs in rural areas by acting as technical and organizational actors in the mobilization of saving money at the Umurenge SACCO or the popular bank. When producers sell their coffee berries some of them act in the tontine where farmers support pay the same amount of money and make a rotation through solidarity of a group. A tontine allows members to save very small amounts of money and at a pre-established rhythm, it is a rotating savings and credit association. The Kopakama creates an environment conducive to social entrepreneurship. This activity supports the small projects which generate incomes for the members, with small amounts of money. By the fact that members know each other, confidence is total guarantee to get a credit. A group of 7 to 15 farmers are created, each contribute RwF 1,000 and ask a small grant according to his saving. These groups are created within the members not for non-members of the Kopakama. According to the answers of respondents “Now, I pay school fees for my children, clothes, and medical insurance, because of the money given by my Tontine, said Mr Turatsinze Bosco one of members of Kopakama...”

3. The CWS: Factor of technological transfer in rural area

The setting up of coffee washing station through Kopakama has introduced new technologies and other facilities have been created for the exploitation of mini-hydroelectric station available in the rural area of Mushubati. The activities of a CWS help the community to have access to new up-to-dated communication (phone, internet, radio, computer training...). This mode facilitates the surround community to find markets for its coffee, computer training course, internet café and others trainings organized by the Kopakama. The power energy and good quality of water have been operating since the CWS is present, which can help people to purchase what they need. There is a projection film relating to domestic agriculture, market gardening, follow-up and coffee farming, family planning, hygiene, public and common health, first-aid, basic elimination of illiteracy, environment protection and safeguarding of it to promote lasting development, balanced diet, fight against the HIV/AIDS, fight against ethnic discrimination, prevention and management of conflicts, unity and reconciliation, community works (*Umuganda*) are more of the missions and activities offered by CWS. The woman rights to inheritance that girls and women have not enjoyed for a long time (Kopakama report, 2011).

4. The contribution of the CWS to the balance of payment

The positive contribution of the CWS and the Kopakama cooperative to the balance of payments formation increases with the positioning on top-of-fang markets. Activities of rural structures, to be specific, the CWS and cooperative set up in rural areas have brought to the country foreign currency through the exporters of a fully washed coffee. The penetration of foreign markets is strongly remunerative and the contribution to the balance of trade, the strong dependence on a semi-washed single product. All exports pass through the Central Bank of Rwanda, which make control of the exchange generated. However, some are not traced in the revenue generated by coffee sold locally or exported (RNB, 2012).

5. The CWS and its effects on environment

The establishment and operating of a CWS improve or destroy the environmental conditions of the area. Coffee farming contributes to preserve and fight against erosion and bring oxygen. However, coffee pulp and water from coffee fermentation are the main source of pollution. Investment in the construction of a CWS has necessary to plan specific systems for controlling efficiently the pollution by burying coffee pulps. Schedule organic fertilizers made of coffee pulps are stored in a pit.

Experiences have shown that after decomposition, pulps serve as fertilizers rich in mineral salts. On CWS and Kopakama, waste water and pulps from the station are not treated, recycled and put in the appropriate pits. They pollute the environment of the population who lives near by the river and the food-producing crops. Kopakama could look for the solution of pollution, and use the coffee pulps as organic products for coffee and crop plants.

6. Effects of setting up a coffee washing station (CWS)

One of the major effects of coffee-growers cooperative is the production of good coffee in order to improve socio-economic welfare of the farmers, to monetize rural economy as well as technological transfer. Coffee washing station of Mushubati benefits from the differentiation due to coffee improved quality and competitive prices. For the market to prosper really, agricultural farming in general and coffee farming in particular have to get equal income in order to maintain a synergy between the production and coffee market. Others advantages of coffee washing station concern: (i) Exemption tedious work of processing coffee and non-exploitation of middlemen (ii) Guaranteed market share bonus after sales (iii) Easiness of coffee transformation works for vulnerable people especially orphans, children, widows, old persons (iv) Intensification of competition in coffee sector which is to bring a high productivity and an improvement of the quality (v) Agricultural infrastructure structuring coffee cooperative and lastly (vi) Facilitating in access to the credits in rural area as shown in Figures 2 and 3.

7. Kopakama Cooperative: A tool of access to the credit

More than 92.6% of our respondents emphasize on bank credit like one among solution to improve coffee production because different activities to manage coffee plantation cannot be done only by farm owner, 90.2% consider the land use consolidation as well. Kopakama has become a way for farmers to access the credit. Usually farmers need to borrow money from bank to increase the coffee production. The credit constitutes an advantage for the members what an individual cannot pretend to get by himself. Our surveys reveal that 87% of coffee-growers like borrowing money from banks while 13% do not for fearing to be unable to repay. 91% of them prefer credit in liquid assets, 2% like it in agricultural kits and 7% in plant-care products. 92.5% of coffee-growers from the area of our study argued to have borrowed sum of money which have been useful to cover the needs related to coffee. As Kopakama has a Fair Trade certification assists farmers by providing seeds, fertilizer, pesticide and technical

assistance for cheap prices. For non-members, these advantages are not provided. They have to look for their own means of getting or paying these services (91.7%). Growers made part of the key decisions adopted by the Kopakama through their participation in cherries delivery at the CWS during the harvesting. The cycle of demand and supply of credit for members can be presented as shown in Figure 2.

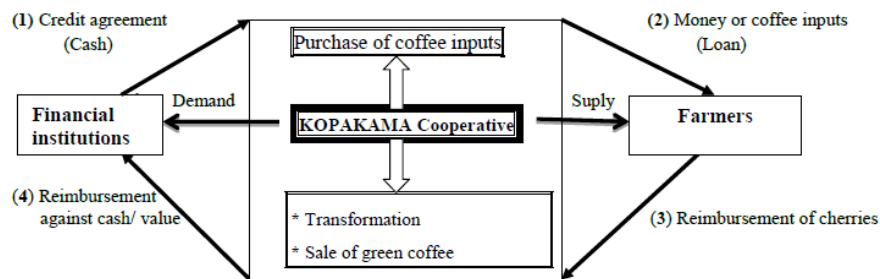


Figure 4 : Cycle of the demand and the repayment of credit through KOPAKAMA.

Coffee seems to be a catalyst in the financing of investment projects of the family. The project changes from one family to another based on the constraints and opportunities for farming. Coffee becomes a visa to access credit from the cooperative or the bank. The KOPAKAMA provides seasonal loan for inputs and advances for labor during harvest. Inputs are given to the members; advances to pay labor (*Picking advance*) are paid at the end of each week of harvest depending on the quantities delivered to the CWS. The delivery of inputs, advances and final payment are three events spread over the year, to balance the cash peasant producer. The presence of a CWS in the rural area has negative effects on the environment when the pulp of coffee are not inserted in appropriate zone with a degradation of the environment. The managers should take advantage of using wastes to fertilize crops. The prices of fertilizers in Mushubati sector can be represented in Table 2.

Table 2 : Price of fertilizers in Mushubati sector in July 2012 (in Rwandan francs: RwF)

| Produit | Nombre of growers | Quantity (Kg) | Farmers (%) | Average price/Kg | Total cost (RwF) |
|-------------------|-------------------|---------------|-------------|------------------|------------------|
| Urea | 7 | 60 | 9.22 | 490 | 29.400 |
| DAP ¹³ | 4 | 36 | 5.26 | 600 | 21.600 |
| NPK202010 | 65 | 1.119 | 85.52 | 440 | 492.360 |
| Organ.Fertil | 76 | 984.727 | 100 | - | - |
| Total | 76 | | 100 | | 543.360 |

Source: Our survey, July 2012.

During the coffee production, members received the fertilizers from the Kopakama as loan to be paid at RwF 56 by each coffee tree during the harvesting period (March-July). Chemical fertilizers have a positive impact on crop planted with coffee trees. Members of Kopakama are totally secured from intermediaries who sell the inputs on the big prices in rural area. They receive products and agricultural materials from the cooperative. This guaranty and advantages are not given to non-members may look alone their own means to purchase coffee inputs and agricultural materials by contracting a credit from the bank with high costs.

Coffee berries supply to the coffee washing station (CWS)

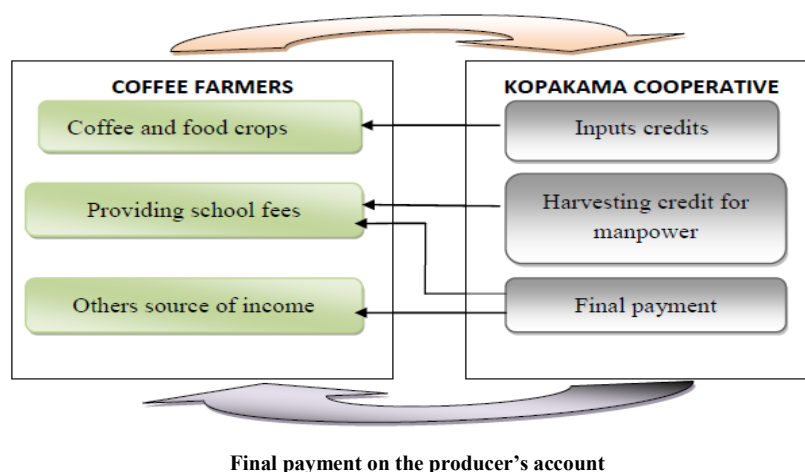


Figure 5: Coffee credit process through the KOPAKAMA. Mushubati, July 2012.

¹³ DAP: Di-Ammonium Phosphate (in English) ou Phosphate diammonique (in French)

As shown in Figure 4 coffee growers sell their cherries on the nearest coffee washing station, which treat the berries into parchment then green coffee to be exported. Producers are paid by Kopakama within 14 days after delivery of cherries through the nearest popular bank of Rwanda (PBR), the Umurenge SACCO or others microfinance institutions based in surround rural area of Mushubati sector. This shows how the CWS affect the quality of coffee, which increases the price, a sign of encouragement for coffee producers. When prices increase, coffee growers are motivated and invest themselves in the coffee promoting activities. Farmers are getting incentives to produce good quality coffee beans. This implies not only more effort in providing extension services and facilitating transport of cherries to the CWS, but above all paying a better price for good quality of coffee through the cup of excellence started in 2008, 2010 in Rwanda. In the Cup of Excellence competition 2012, Kopakama won the 26th position with 88.50% score with 66 lots. The award was bought on internet auction at \$4 per one kilogram with a total of \$17.460 whom motivated members to increase quality of coffee (Kopakama, 2012). Coffee farmers were excited because of the cash prizes and certificates received and they promised to improve in the future Cup of Excellence competitions. Awards was given to the best lots, members received cows as sign of motivation. The production cycle of coffee product in Mushubati through Kopakama sales and transfers funds can be represented in Figure 4:

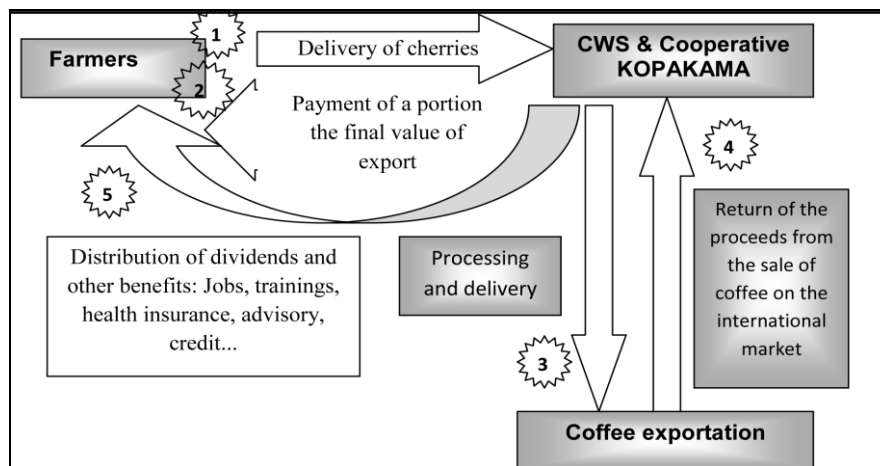


Figure 6: Process of sale and refund coffee through the KOPAKAMA Cooperative (2012).

The Kopakama serves as an intermediary between growers and the bank granting the credit (Figures 2 and 3). It acts as guarantor in favor of members and refunds are done through cherries during the harvesting

period. Members repay debt (either in coffee inputs or cash) during the coffee harvesting period. After processing and sales of parchment coffee, Kopakama does the same for the amount borrowed to the nearest People's bank or Umurenge SACCO both of Mushubati. All these benefits and advantages of access to the credit are not given to non-members growers. Application procedures and granting of credit with the People's bank are binding to growers isolated simpler and less harsh for the members of Kopakama grouped in a collective organization. Most often the credit applications are endorsed by the coffee national development Board (OCIR-Café) a public organization in charge of monitoring and promotion of coffee in Rwanda. After selling the green coffee, farmers also get the bonus given by the cooperative which was evaluated at RwF 15Rw/kg in July 2012.

The CWS and Kopakama cooperative bring very significant benefits for members. They have created a very strong social ties, social capital very important for members. These links create a style of social cohesion within members: mutual health, initiatives of courage, resilience and self-confidence after the Genocide, skills training, entrepreneurship, self-creation... Membership in the cooperative helped the development of members by giving them the opportunity to share, to have a place of value in society and their responsibilities. Often actors undertake joint activities of a social or economic outside the scope of the cooperative. Friendships are created and become a force to operate between members within the village: *Ibimina* (Tontine). Kopakama structure can strengthen the bonds of mutual aid and solidarity often involving other family members (86.9%). It strengthens unity and reconciliation of their members regardless of gender, ethnicity, origin or religion... KOPAKAMA cooperative assists widows and orphans of the Genocide against Tutsi in 1994 have not means to meet their needs. Since its inception, the cooperative assist poor persons to resolve the problems and pay for the scholar of their children. It is also involved in surround community: education of orphans of the Genocide, fight against HIV-AIDS, assistance to child-headed households and the poor, elderly and other vulnerable (ILO, 2001). Through these cross actions, Kopakama organize training sessions related to development of coffee, literacy, fight against malnutrition, body hygiene and housing, family farming, market gardening, non-violence, small income-generating projects for members...

IV. Conclusion and recommendations

The purpose of this study was to analyze the socio-economic impact of the rural farming structuring through coffee washing station and the Kopakama coffee cooperative, Rutsiro District, Western Province of Rwanda. During

this study, we carried out surveys preceded by a questionnaire completed by observations and interviews with 76 coffee-growers (members and non-members) in Mushubati sector. Results allow us to argue that coffee farming through CWS and Kopakama facilities set up in rural areas, allows growers to earn best prices thanks to fully washed coffee. The findings of the study clearly reveal that the Kopakama and coffee washing station have improved the socio-economic development of farmers of Mushubati sector. When observing the whole data the members of cooperative have come out of their problems and traditional bound. Self-help groups created in Kopakama have paved way to bring the rural people in the main stream of social and economic progress of the community. Kopakama has contributed to change on economic conditions, social status, decision making and increases women in outdoor activities. It plays a very important role in social change of the farmers in general. We argue that coffee farming in rural organizations and facilities set up in rural areas, allows producers to earn best prices thanks to the fully washed coffee. The acquaintance on farming techniques by the famers, the income increases due to jobs created in rural areas have allowed to meet different needs of growers. New jobs created by CWS and Kopakama have reduced unemployment in the region; allowed to fight against poverty and rural exodus of young. The presence of coffee washing station, the Kopakama in rural area have help vulnerable people and others to promote gender through the channel of its activities. Economies of scale are created, allowing growers to be stable in their farms and be attached and motivated by their coffee, which are generated in rural area of Mushubati sector in Rutsiro District. However, KOPAKAMA should make sensitization to coffee growers who are not in cooperative to join the cooperative. It will respect the time and rules of coffee processing for good quality. To protect environment by managing directly water from the CWS. The cooperative should improve the kind of management, use a good way of financial and accounting in order to show an accountability of the income. It should pay on time the bonus for all farmers; members and non-members in order to motivate them. Farmers must participate in the management of their cooperative in order to be a part of it in controlling their activities.

V. References

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