

AN APPRAISAL OF THE SUSTAINABILITY OF WOMEN INCOME GENERATING PROJECTS IN POVERTY REDUCTION IN MOSHI RURAL DISTRICT: TANZANIA

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ABSTRACT

This study analyzes the sustainability of women income generating projects in poverty reduction in Tanzania, whereby the study was carried out in Moshi Rural district. Specifically the study aimed to identify the activities initiated by women in the area of study, examine the role of micro finances institutions in facilitating women income generating projects, scrutinize the sustainability of micro projects (enterprises) undertaken by women and determine the challenges facing women micro projects in rural areas. Data were collected from a sample of 55 respondents through various methods such as questionnaires targeting to women who involved in micro enterprises and interview together with personal interviews with key informants, were used as data gathering instruments. The project sustainability was assessed by BCR, NPV, IRR and sensitivity analysis using Microsoft Excel. Selling fruits and banana were the most activities carried by women. However, the enterprises were financially and economically profitable. The projects sustainability was also tested using sensitivity analysis, results indicated that if the price of the products falls by 5% or/and inputs price increases by the same percentage, still the entrepreneurs will get profit. Therefore, Women should also be empowered through education and training, and economic empowerment by way of having access to loans to improve their enterprises in order to reduce poverty at household and community level in the study area.

Keywords: Benefit Cost Ratio, Net Present Value, Internal Rate of Return, Sensitivity Analysis.

INTRODUCTION

Since independence the Tanzanian development had been based on an understanding of development primarily in term of economic growth. The per capita GNP had risen while the health, education and economic status of women have remained worse than men. In response to this, currently women with the help of the government and NGOs have organized themselves to create independent local development projects mobilizing the little resources they own. However, women provide the backbone of the rural economy in much of Sub Saharan Africa. About 80% of the economically active female labour force is employed in agriculture and women comprise about 47% of the total agricultural labour force (Manuh, 1998). As a result they form social and economic groups others have gone one step further and form Saving and Credit Cooperative Societies (SACCOs).

On the other hand the government has been trying to adopt a grass roots approach, where the use of voluntary women's organizations as intermediaries for government funded program providing employment for women in rural areas. Women are also given priority as beneficiaries of government and program in rural areas.

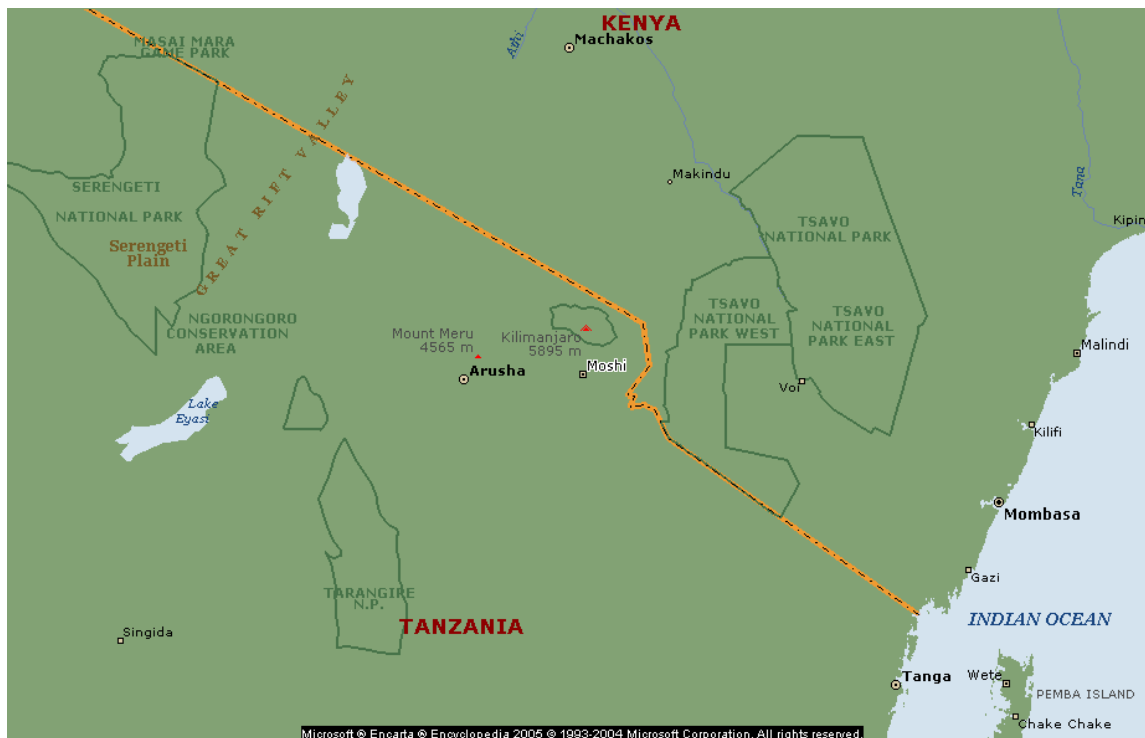
Basing on the above background information, it is clear that women are struggling to emancipate themselves from men's dependence by involving themselves in small businesses (micro enterprises) famous known as entrepreneurship. Entrepreneurship as the engine of economic growth and wheel that pedal the vehicle of economic development has been recognized for its importance in the area of job creation, revenue generation, poverty alleviation and wealth creation. This concept is now identified as the central element in the theory of economic development (Schumpeter, 1934 and Josiane, 1998) and it makes up the largest business sector in economies. It has been recognized as the driver of employment and economic growth (Culkin and Smith 2000; Peacock, 2004; Wang, *et al.*, 2006).

However, studies on the sustainability of their activities in the study area are limited. The introduction of microfinance institutions in Tanzania is seen as the best alternative source of financial services for low income earners in rural areas as the means to raise their income, hence to reduce their poverty level (REPOA, 2006) but to what extent these micro-financial institutions are helpful to women's initiatives in poverty reduction is not well established. Women in rural areas are still considered as not loanable to most of such institutions. For them mobilizing their little resources, forming groups and even forming SACCOs are some of the alternatives. But still women income generating projects do fail to operate in sustainable way. This study seeks to analyse the sustainability of women income generating projects to poverty reduction.

METHODOLOGY

The study was conducted in Moshi rural district, in Kilimanjaro region. According to the 2002 Tanzania National Census, the population of the Moshi Urban District is 402,431. The district is administratively divided into 31 wards (URT, 2002).

A map of Tanzania showing Moshi Rural district



The study sampled 55 community members including women group leaders, members and other business women (not in group), Community Development Workers, Ward and Village Executive Officers, Loan officers and SACCOs leaders. The study used non probability sampling to select one Ward Executive Officer, one Village Executive Officers, eight women group leaders, three loan officers and one SACCOs manager. Also probability sampling technique was employed to select twenty women development group members, and twenty business women (non group members) from the study area.

Data collection methods

The study employed questionnaire that was comprised with both close ended and open ended questions. The method was administered to members of different women development groups, loan officers and leaders of women development groups, where respondents had enough time to provide relevant information about the study. The questionnaire covered information on background information of the respondent, problems facing women in their activities, and roles of SACCOs in facilitating women projects. Also interview and observation methods were applied in order to gather relevant information. Moreover, interview was administered to Ward Executive Officers, Village Executive Officers and those women engaged in groups related to income generating project, business women and SACCOs officials. It helped to gain information about how women projects are sustainable in term of profitability, capital, sales and future expectations of their projects. Also problems facing women projects and roles of SACCOs were collected through interview.

The data collected were edited, summarized and rephrased to provide meaningful and understandable information without changing their meaning and thereafter entered in the Statistical Package for Social Sciences (SPSS) computer Software for analysis.

In order to assess project worthiness, the researcher selected two dominant projects (Banana and unprocessed fruits) run by the sampled women to assess the Net Present Value, Benefit-Cost Ratio and Internal Rate of Returns whereby important information were analyzed using Microsoft Excel 2003. These projects (small business were projected for five years with a discount rate of 19%.

NPV is the different in value today of all present and future costs. If the difference is positive, the project, or enterprises is estimated to earn surplus. This is described as:

$$NPV = \sum_{i=1}^n \frac{B_i - C_i}{(1+r)^i}$$

Where:

NPV= Net Present Value

r = discount rate

n = number of years

B = benefit

C = costs

According to Lotter *et al.* (2003), BCR, is the present worth of the benefit stream divided by the worth of the costs stream. It is perceived that the project with a ratio of greater or equal to 1 is worth.

$$BCR = \frac{\sum_{i=0}^i \frac{Bi}{(1+r)^i}}{\sum_{i=0}^n \frac{Ci}{(1+r)^i}}$$

Where:

BCR = Benefit cost ratio

R = discount rate,

n = number of years,

B = benefits

C = costs

IRR is the discount rate where the net present worth of costs is equal to net present worth of benefits i.e. the NPV equal to zero. IRR is where:

$$IRR = \sum_{i=0}^n \frac{INB_i}{1+r)^i} = 0$$

Where:

IRR= Internal rate of return

INB= Incremental benefit in year 1

r = discount rate

n = planning horizon or life of project

Thus, the project with IRR greater than the cost of capital is worth.

More information on these analyses can be learnt for Senkondo et al. (2004); Commonwealth of Australia (2006) and Dhingra (2008)

RESULTS AND DISCUSSIONS

Socio economic characteristics of the respondents

i) Education level of the respondents

Results from Table 1 reveals that 55% of the sampled respondents are primary education holders, 15% end up in Form II and 28% of respondents achieved Ordinary secondary education. Therefore these information implies that all of the sampled respondents in the study area have successively completed primary and secondary education, hence they can be able a least to do some calculation related to simple business records (Book keeping), compute profits and other.

Table 1 **Education of the respondents**

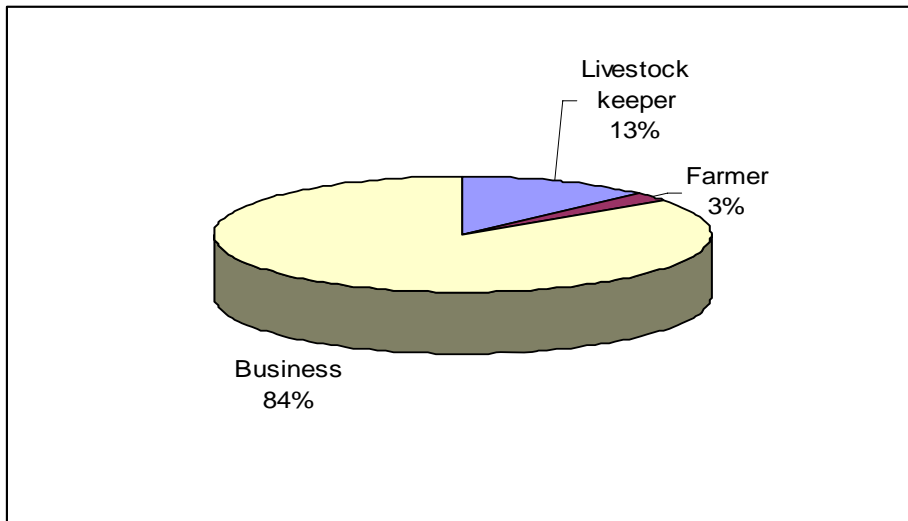
Level of education	Frequency	Percentage
Primary education	21	55
Secondary education	11	28
Form two	6	15
Total	38	100

Source: Field data (2011).

ii) Main occupation

The findings shows the main occupation among all respondents, 85% of the sampled respondent involved in business, 12.5% of respondent engaged in livestock keeping and 2.5% were farmer (Figure 1). This information implies that many respondent in the study area are involved themselves in business more than other occupation. Also researcher found that from sampled respondent most of them engaged in more than one activity in order to earn basic needs like food, education, clothes and others for their family as shown in the table below.

Figure 1: Main occupation of the respondent



Source: Field Data (2011)

iii) Employment

Due to the nature of rural areas respondents employment status show that 97.5% of the sampled respondent employed themselves and 2.5% was employed (Table 2), this findings implies that lack of formal sectors in rural make people to decide to employ themselves in various activity like livestock keeping, farmer and business as it identified above.

Table 2: Respondents’ distribution by employment status

Response	Frequency	Percentage
Yes	39	97.5
No	1	2.5
Total	40	100

Source: Field data (2011).

iv) Experience in business activities

Results from Table 3 indicate that 25.0% had experience of 5 years in business, while 20.8% had experience of 2 years. Findings also revealed that 16.7% of the sampled population had experience of 3 years and 4 years in business. From these findings, it can be deducted that most of the population involved in the study had an experience of two to five years in their respective businesses. This is not a long experience in the activities. This may be due to the fact that as most of the micro entrepreneurs achieve a certain level of success they tend to diversify to another type of business rather than remaining in the same type of business.

Table 3. Experience of the respondent in activity.

Year of Experience in Occupation	Frequency	Percentage
1	1	4.2
2	5	20.8
3	4	16.7
4	4	16.7
5	6	25.0
6	1	4.2
15	1	4.2
20	2	8.3
Total	24	100

Sources: Field data, (2011)

Activities initiated by women in the study area

From the study area the sampled respondents employed themselves in business, others in livestock keeping while others were farmers. Business women initiated activities of buying and selling banana, fruits, cattle feeds, secondary manufactured clothes, pots and milk, for those who was livestock keepers were keeping chickens, cow, pigs and other related animals. Farmers were cultivating vegetable gardening that resulted in selling vegetable project in the area. Also the findings reveal that there were women who initiated small processing units like “Juhudi Batiki” women group in “Uchira” while others involved in diary processing as that of “Fukeni diary” which produced milk, cheese and butter.

In order to break vicious circle of poverty the community (women) in Moshi rural was sensitive to develop various women’s groups with entrepreneurial spirit. This helped them to develop various income generating projects. Most of women groups established aimed to awaken women to fight poverty as the leader of Mkombozi women group says “*our intention is for women to help each other and fight against poverty*”.

Sources of capital

Table 4 shows that 46.2% of the respondents got capital from their own sources, 33.3% were given capital by their relatives meanwhile 20.5% of the sampled respondents borrowed capital from (SACCOs). This implies that majority of the capital for the projects initiated by women in the study area were households based. A little of capital came from the SACCOs.

Table 4. Sources of capital for respondent business

Source of Capital	Frequency	Percentage
Borrowing from SACCOs	8	20.5
Given by relative	13	33.3
From my own source	18	46.2
Total	39	100

Sources: Field data, (2011)

From these findings one can conclude that sources of capital for those activities/projects initiated by women were from their own sources of income and few of them borrowed from financial institutions especially SACCOs that have reasonable interest rates for small entrepreneur in most rural areas.

Starting capital

According to research findings on business starting capital for women reveal that about 45% of the respondents starting capital was between Tshs 10000-50000, 27.5% of respondent starting capital was Tshs 60000-100000, 12.5% of respondents starting capital was between Tshs 110000-150000, 2.5% of respondent starting capital was between Tshs 160000-200000 and 12.5% of respondent starting capital was between Tshs 260000-300000 as tabled below.

Table 5 the business starting capital

Amount of Capital (In Tshs)	Frequency	Percentage
10000 – 50000	18	45
60000 – 100000	11	27.5
110000 – 150000	5	12.5
160000 – 200000	1	2.5
210000 – 250000	0	0
260000 – 300000	5	12.5
Total	40	100

Sources: Field data, (2011)

The table above show that many women started the business with low capital about Tshs 10000 to 50000, this was due lack of information on where to get loans since 55% of respondents were primary leavers.

Role of Microfinance (SACCOs) in facilitating women income generating project

Like any other financial institution, SACCOs played a greater role to improve and promote women income generating projects in Moshi rural. SACCOs provided loans, theoretical training, funds and advices (consultancy). Such services were also accessed from Sokoine University of Agriculture and Land O’Lake organization. Women entrepreneurs in Moshi rural

were given loans (capital) and advice from District council through Women Development Fund (WDF) under the Ministry of Community Development, Gender and Children (MCDGC). WDF helped many women especially those who organized themselves in groups. Moreover, TASAF played role to facilitate women income generating projects since as a social fund had construct markets and rehabilitation of roads that make easy for women to transport and their goods to the market place.

Table 6 Members of SACCOs

Response	Frequency	Percentage
Yes	21	58.3
No	15	41.7
Total	36	100

Sources: Field data, (2011)

The worthiness of the projects

The project financial and economic feasibility values were assessed through discounted measures of project worthiness. The researchers used Benefit-Cost Ratio (BCR), Net Present Worth/Value (NPV) and the Internal Rate of Return (IRR) as discounted measures to assess the projects sustainability. The researchers used the discounted measures of the project worthiness since it takes into account time value of money. IRR is very important parameter in the discounted measure of project worthiness method because is more than BCR and NPV since is the only one which differentiates the project in the external environment as to whether the project is really paying according to the existing business circumstances at the time when the project is about to start. Women in the study area involved in a number of small businesses (projects) but the study sampled only two projects (those who involved in fresh/raw banana and fruits) so as to appraise the sustainability of women's projects, whereby average values in terms of quantity (volume) traded, prices, levy and other expenses were computed and used in these analyses.

i) Fruits project appraisal

a) Benefit –Cost Ratio (BCR)

According to Commonwealth of Australia, (2006) benefit- cost ratio compares the present worth of benefits and the present worth of costs and presses their relationship as a ratio. There are three methods of calculating BCR but the most common used is by taking the discounted gross benefits divide by total discounted gross costs. The decision rule is to accept projects with BCR greater than one and reject projects with BCR less than one. From this project the BCR is 1.37 (Refer Annex I). This was obtained as Benefit-Cost Ratio = (Sum of discounted benefits) divide by (sum of discounted costs). Therefore, **32,621,613/23,738,562** which gives **1.37**. The results indicate that the project BCR is above one, this signifies that this project is viable.

b) The Net Present Value

Net Present Value (NPV) is the difference between the present worth of benefits and the present worth of costs of the project (Dwivedi, 2005) and the decision rule is to accept the project with positive NPV. The fruit project has a positive NPV of 3,755,388.52 which implies that the business is viable (financially and economically profitable) (Annex I)

c) The Internal Rate of Return

The IRR is the rate of interest charged to the project at which the present worth of costs equals present worth of benefits (the sum of the positive net benefits equals the sum of negative net benefits (Webster, 2003). IRR is the only discounted measure compared to BCR and NPV which compares the business with the external business environment. The decision is to choose the project with the highest IRR than bank interest rate. The project has the IRR of 77% which shows that the return on investment and profit of the business is high when you compare with bank interest rate of 19%.The 58% surplus of profit is the one which makes the project survives.

d) Sensitivity Analysis for fruit project.

The sensitivity analysis relates to change in price. In this case, the researchers took 5% of decline and increase in price of price of the fruits and operating expenses respectively. Table 8 indicates that when the price of fruits decline by 5% the NPV diminish from Tshs 3,755,389/= to Tshs 2,756,675/= and IRR falls from 77% to 59%, while an increase in operating expenses by 5% will lead to fall of NPV from Tshs 3,755,389/= to Tshs 3,097,584/= and the IRR falls from 77% to 63%. This implies that the project's revenue will not be affected much by the change in sale price and operating expenses.

Table 8: Sensitivity Analysis

Sensitivity Analysis	% Change	IRR	NPV
Base	0	77%	3,755,389
Decline in sales price	-5%	59%	2,756,675
Increase in operating exp	5%	63%	3,097,584

Sources: Field data, (2011)

ii) Banana project

a) Benefit –Cost Ratio (BCR)

From this project the BCR was 1.24 that is Benefit-Cost Ratio = (Sum of discounted benefits) divide by (sum of discounted costs). Hence $74,666,109 / 60,369,269$ BCR = 1.24. These results signify that banana project was viable (Annex II).

b) The Net Present Value

The banana project has a positive NPV of 4,436,433.45 which implies that the business was viable too (financially and economically profitable). (Annex II)

c) The Internal Rate of Return

The project has the IRR of 43% which shows that the return on investment and profit of the business is high when you compare with bank interest rate of 19%.The 24% surplus of profit is the one which makes the project to survive (Annex II)

d) Sensitivity Analysis for banana project

Table 9 indicates that when the price decline by 5% the NPV falls from Tshs 4,436,433 to 2,114,807 Tshs and IRR falls from 43% to 31%, while an increase in operating expenses by 5% will lead to fall of NPV from Tshs 4,436,433/= to 2,559,407 Tshs and the IRR falls from 43% to 32%. This implies that the project's revenue will not be affected much by the change in sale price and operating expenses of banana.

Table 9: Sensitivity Analysis

Sensitivity Analysis	% Change	IRR	NPV
Base	0	43%	4,436,433
Decline in sales price	-5%	31%	2,114,807
increase in operating exp	5%	32%	2,559,407

Sources: Field data, (2011)

CONCLUSIONS AND RECOMMENDATIONS

The study revealed that women income generating project in the study area can be sustainable if run carefully. Women have been successful to initiate small project such as buying and selling banana, fruits, clothes, eggs and cattle feeds also livestock keeping and farming activities. Moreover SACCOs and religious institutions have tried to promote women through income generating projects by providing entrepreneurial education that enable them (women) to manage their business and revenue (money), provision of loans with favourable interest rates, frequent seminars and theoretical and practical trainings. The BCR, NPV, IRR and sensitivity analysis for the two sampled projects (banana and fruits) indicate that the sampled projects which were project for five years are feasible, worth and sustainable. Women who engaged to income generating activities are capable of paying school fees for their children from primary school to secondary education even to higher learning education. They can supply food, shelter and clothes to the family, even poor family are able to get two to three meals per day.

Due to the conclusion above the study recommends the policy makers to ensure that more emphasis are monitor the implementation of different policies such as SME policy of 2004 and other policies related to women development. Institutions like Moshi University College Cooperatives and Business Studies (MUCOBS) should introduce outreach programmes so as to convey business or entrepreneurial knowledge and skills to women in rural areas.

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Annex I: Fruits Discounted Cash flow

Costs	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Fixed Capital		4,859,377				
Working Capital		4,659,377				
Operating Costs		4,649,377	4,649,377	5,114,315	5,625,746	6,188,321
Financial Costs		448,127	244,741	-	-	-
Total Costs		4,616,258	4,894,118	5,114,315	5,625,746	6,188,321
Discount Factor (19%)	1.00	0.83	0.69	0.58	0.48	0.40
Discounted Costs		12,180,215	3,398,693	2,959,673	2,713,034	2,486,947
Sum (A)		23,738,562				
Benefits						
Revenue		9,937,200	9,937,200	10,930,920	12,024,012	13,226,413
Discounted Revenue		8,281,000	6,900,833	6,325,764	5,798,617	5,315,399
Sum (B)		32,621,613				
BCR		1.37				
Net cash flow		(4,679,058)	5,043,082	5,816,605	6,398,266	7,038,092
Disc Cash outflow		(3,899,215)	3,502,140	3,366,091	3,085,583	2,828,451
NPV		3,755,388.52				
IRR		77%				

Annex II: Banana Discounted Cash flow

Costs	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Fixed Capital		12,095,760				
Working Capital		11,895,760				
Operating Costs		11,888,760	11,888,760	13,077,636	14,385,400	15,823,940
Financial Costs		1,111,816	607,209	-	-	-
Total Costs		36,992,096	12,495,969	13,077,636	14,385,400	15,823,940
Discount Factor (19%)	1.00	0.83	0.69	0.58	0.48	0.40
Discounted Costs		30,826,747	8,677,756	7,568,076	6,937,403	6,359,286
Sum (A)		0,369,269				
Benefits						
Revenue		22,744,800	22,744,800	25,019,280	27,521,208	30,273,329
Discounted Revenue		18,954,000	15,795,000	14,478,750	13,272,188	12,166,172
Sum (B)		74,666,109				
BCR		1.24				
Net cash flow		(14,247,296)	10,248,831	11,941,644	13,135,808	14,449,389
Disc Cash outflow		(11,872,747)	7,117,244	6,910,674	6,334,784	5,806,885
NPV		4,436,433.45				
IRR		43%				