Microfinance Development:
Can Impact on Poverty and Food In-Security be Improved Upon?

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SUMMARY

Various development strategies aimed at eradicating poverty are now invariably incorporating microfinance as one of the key sectors in their programmes. Thanks to the increased attention given to the sector, and the resources being devoted to it, outreach is indeed expanding very rapidly, notwithstanding the fact that existing services are still largely using a one-fits-all modality across all areas and economic situations. Practice strongly suggests that the sector indeed has such a potential to be one of the key instruments to fight poverty in its every aspect by positively affecting the house-hold economic portfolio. For the poor, it can expand opportunities for enhancing income, improve capabilities in terms of human capital, improve the coping mechanism against vulnerability in its various features, as well as empower the disadvantaged; and the impact can occur at enterprise, individual, household and even community level, much of which being a result of enterprise profitability. Yet, the available evidence suggests little progress in this regard. Microfinance is still largely financing agricultural activities, little served with modern technology, and very few non-agricultural activities. Individual enterprises are expanding very slowly, if at all. After being long time clients to the MFI, and after taking 8-9 consecutive loan cycles, the absorptive capacity, and the loan size taken, by an individual enterprise, is hardly different from what it was when clients joined the MFI afresh eight-nine years back. Whatever enterprise and household income increment is attained, there is no guarantee that it goes to meeting such basic needs as food security to the household and its members in the context of the region where such services are so poorly provided. Micro-saving, which is proving elsewhere to be as important, if not more important, as microcredit service in terms of guarding the poor against vulnerability, to the extent of playing the role of children born as an old-age security, seems to be given little accord, even by the microfinance service providers themselves. Women are not enjoying the full benefit out of the service though it primarily targets them. Clearly, microfinance is not the only instrument for improving the poverty situation of the poor in areas like that of the Amhara region. For it to be effective, the marketing situation, the infrastructure, particularly the road net-work, the skill and risk aversion behaviour, particularly that of women, and integration of the whole service with other sectors requires immediate attention.
Outline

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ACCRONYMS

ACSI: Amhara Credit and Saving Institution
AIMS: Assessing Impact of Microenterprise Services
BDS: Business Development Services
GGLM: Group Guarantee Lending Model
HHEP: Household Economic Portfolio Model
IFAD: International Fund for Agricultural Development
MFIs: Microfinance Institutions
MGD: Millennium Development Goals
NGOs: Non Governmental Organizations
REMSEDA: Regional Micro and Small Enterprises Development
SACCOs: Saving and Credit Cooperatives
SIDA: Sweden International Development Agency
WDR: World Development Report
1. Introduction

The definition of poverty has become ever controversial. Some would like to argue that poverty, like beauty, is in the eyes of the beholder. The recent definition of poverty by the World Bank (World Development Report, 2000/2001) extended the conceptual dimension beyond the conventionally held ideas of permanent income/consumption to a more comprehensive notion of lack of opportunities, capabilities, sense of voicelessness and vulnerability to external shocks. Thus anti-poverty strategies aimed at meeting the Millennium Development Goals (MDG) not only need to create income-earning opportunities, but also must ensure improved capabilities, empowerment of the poor in the sphere of state/social institutions, and security against variety of shocks.

The Federal Government of Ethiopia has taken several economic reform measures to address poverty in its every aspect. Thus, while on the one hand trying to fulfill the basic needs of the population, it also embarks upon economic reform measures conducive for free market competition and employment creation which includes the promotion of policies that will encourage savings, private investment, increasing income earning opportunities and promotion of small-scale industries in the informal sector among others. The Rural Development Strategy emphasizes, among others, credit as a means to increase smallholder production.

In line with this, financial markets are considered by the Amhara Regional Government as a good entry point in achieving food security objectives as this will allow rural households in both food secure and insecure areas to explore their "comparative advantages" in the market place and to create possibilities for exchange between factor markets. However, even if policies aimed at changing the regulatory environment were expected to pave the way for increased flows of resources to the rural and informal sectors, microfinancial services are very inadequate still. Efforts by ACSI and other smaller MFIs resulted in reaching only 10-12% of estimated demand for microfinance.

No serious attempt has been made to evaluate the impact of such services on the lives of the poor in the region. This paper tries to highlight on some of the achievements of microfinance programmes, on the four poverty dimensions: Opportunity, Capability, Vulnerability and Empowerment that occur at Household, Enterprise, Individual level as well as community level. The paper focuses on ACSI's experience in the Amhara Region. Due to data limitations, the analysis will focus on a before/after situation of the microfinance client. Thus, first it briefly describes the hypotheses that microfinance is expected to impact on poverty. This would be followed by the real achievements so far. Conclusions would be drawn at the end.

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The Millennium Development Goals are: (1) eradicate extreme poverty and hunger; (2) achieve universal primary education; (3) promote gender equality and empowerment of women; (4) reduce child mortality; (5) improve maternal health; (6) combat HIV/AIDS, malaria and other diseases; (7) ensure environmental sustainability; and (8) develop a global partnership for development. [Focus 24]
2. The Potential Impacts of Microfinance

“…Microcredit views each person as a potential entrepreneur, and turns on the tiny economic engines of a rejected portion of a society.”

(M. Yunus, November 1999. The Grameen Bank, Scientific American. 281 (5)).

The next sections lists microfinance impact hypotheses based on a conceptualized Household Economic Portfolio (HHEP) model (Chen and Dunn, 1996). The Conceptual Model of the Household Economic Portfolio is annexed. The household economic portfolio can be defined as a) the set of household resources, b) the set of household activities, and c) the circular flow of interaction between household resources and household activities. Household resources are the set of human, physical, and financial resources available for use by the household in a given period of time. Household activities are the set of consumption, production, and investment activities that the members of the household undertake in a given period of time.

The household economic portfolio model is particularly useful in addressing the issue of attribution and fungibility (AIMS Team, 2001). Credit is fungible within the household economic portfolio in the sense that it is interchangeable with other monetary units and difficult to trace. The model recognizes that loan funds, like any of the household resources, can be allocated to any activity in the household economic portfolio. The microenterprise is embedded in the household economy and represents only one of the household’s production, consumption, and investment activities. By treating the microenterprise as part of the larger household economy, the model deals with the problems of fungibility.³

The model also helps to build the case for attribution (a basic challenge in impact evaluation in social sciences) by providing an internally consistent conceptual framework.

³ The AIMS conceptual framework departs from the conventional approach in that it starts with the household rather than the enterprise. Traditionally, evaluations of small-enterprise credit programs typically focused on enterprise returns and employment creation or hired labor. This is because historically the target clientele was of a higher socioeconomic status and was typically engaged on a full-time basis in a single enterprise activity that used hired labor. … Microfinance programs with a poverty alleviation focus aim to serve relatively poorer clientele. The vast majority of their client households do not have a single source of livelihood support, but rather pursue a mix of activities depending on seasons and market opportunities, among other factors. The clientele of poverty-lending microfinance is also less likely to make a distinction between household and enterprise funds. The AIMS conceptual framework recognizes that decisions about microenterprises can be understood more clearly when considered in relation to the overall household economic strategies. It clarifies how microenterprise interventions can contribute to household security, enterprise stability and growth, individual well-being and the economic development of communities. (See Barbara MckNelly and Mona McCord (2002): Credit with Education Impact Review No. 2: Economic Capacity and Security. Freedom from Hunger.

⁴ Literally, to “attribute” means to regard something as belonging to, caused by or produced by somebody or something. In the impact analysis terminology, exercising attribution of some positive/negative impacts on the livelihoods of the target population as “caused” (or accounted for) by some development interventions rather than the other requires careful analysis in order not to over/under estimate it by misallocating results.
that can be used to link the micentreprise intervention to the impact in a plausible cause-and-effect relationships. The magnitude of the impact are, of course, conditional on the level or degree of the microentreprise service received. Various hypotheses are drawn to measure impact of a micro-enterprise service like micro-finance can generate at the enterprise, household, individual and community levels.

**Impacts at the enterprise level:** Microenterprise services, particularly credit, are hypothesized to have positive impacts on enterprise revenue, fixed assets, employment, and transaction relationships, thus providing great opportunities for escaping poverty. The causal paths of these impacts include: an increase in microenterprise revenue, an increase in enterprise fixed assets, especially among repeat borrowers, an increase in the paid and unpaid employment generated by the enterprise, as well as improvements in the transaction relationships of the enterprise.

**Impacts at the household level:** Microenterprise services are also hypothesized to have positive impacts on household-level variables: household income, income diversification, household assets, education, nutrition, and coping strategies. Many of these impacts are hypothesized to be the indirect results of increases in household income generated by microenterprises. However, microfinance services, such as credit and savings, may also have direct impacts on variables such as income diversification, asset accumulation, education expenditures, food expenditures, and coping strategies. Thus, at the household level, microentreprise services can both expand opportunities for escaping poverty, enhance capability (raise human capital) as well as help guard against vulnerability.

**Impacts at the individual level:** In addition to changes at the household or enterprise level, which should not be assumed to affect all household members equally, the direct program participation of the client may result in specific impacts at the individual level: control over resources and income, savings, self-esteem and respect from others, and future orientation, thus ensuring empowerment. Microenterprise services may have both direct and indirect effects on these individual-level variables. The causal models for several individual level impacts exhibit bi-directional relationships between savings and control over resources and between self-esteem and control over resources\(^5\).

Moreover, microfinance services are also expected to have positive impact at the community level at large. This can be particularly through increasing employment opportunities, reducing child labour, enhancing forward and backward linkages, etc.

Thus the impacts hypotheses are set with reference to the four poverty dimensions that are identified in the World Bank's World Development Report 2000/1: Attacking Poverty (AIMS, 2002). For example, expansion of opportunities may include greater improvements on household income, assets, sources of income, housing tenure, enterprise growth, and employment generation through which people can obtain their

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\(^5\) The pathways through which impacts at the individual level can be tracked can be classified as material, cognitive, perceptual, and relational. Changes in the level of control that clients have over income, savings, and other and resources represent both material and relational changes. Changes in self-esteem and self-confidence are considered perceptual changes. Changes in the way that clients view the future combine elements of all of the pathways of change.
material requirements. Improved capabilities implies improving human capital that enables people to maintain/raise living standard. Reducing vulnerability refers to improving the capacity of an individual/household to deal with a risky event. Likewise, the main items in empowerment dimension refers to control over resources and income, savings, self-esteem, respect from others, and future orientation by an individual, especially women.

3. Impact Evidence: The Case of ACSI

There is no detailed and systematic study to register impact of the microfinance service on the lives of the poor. But some attempts revealed that there are some positive impacts upon the lives of the poor, including poor women, which need to be improved. The following provides some evidence from some studies with-in the institution on the impact of ACSI’s microfinance service on the living conditions of the poor in terms of the four poverty dimensions: 1) expand opportunities, 2) improve capabilities, 3) reduce vulnerability, and 4) empower individuals. As indicated above, the analysis follows a before/after comparison.

3.1 Expanding opportunities

Access to credit and other microenterprise services are hypothesized to expand opportunities at both household and enterprise level through increased household/enterprise income, increased fixed assets, diversifying income sources, enhancing employment opportunities (both paid and unpaid) etc. But the evidence suggest only few results in these regards. There is no clear register of increased income/profit on the part of the client, to start with. Some indications are that assets creations were possible (additional oxen, house construction/maintenance, etc). Diversification of income sources, another source for expanded opportunity, has also been dictated by the absence of Business Development Service (BDS) opportunities, the risk-averse behaviour of the poor, cultural bias against some non-traditional activities, etc. For the microfinance programme to be able to expand opportunities for the poor, there are many practical problems: including low outreach, the problem of group lending, the one-size-fits-all terms and conditions, clients’ low absorptive capacity, poor market infrastructure and road network, etc. We will discuss each in the following paragraphs.

In terms of Outreach, a total of over 476000 poor people have been reached so far with regular credit alone. Currently, there are about 287000 credit clients, with an active credit balance, and another 80000 voluntary savers (See Annex). But, given the number of economically active people outside of the reach of the conventional financial service, estimated at over 2.88 Mill, the outreach is clearly minimal. It is only 10-12% of demand.

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7 Outreach here refers only to Breadth. But it can also include wider aspects like: Worth of outreach to clients (value to clients that commands their willingness to pay); Cost of Outreach to clients: price costs and transaction costs; Depth of Outreach: level of relative poverty of clients; Length of Outreach: sustainability of the service; and Scope of Outreach: diversity of services provided.
taking only the number of the very poor. Presently, ACSI is operating in all Woredas of the Region, and has covered about 1990 (some 65% of total) Kebeles. There are many economically active poor people still un-reached. Given the very poor infrastructure in the region, attending all such clients would undoubtedly increase operation cost, which cannot be covered from such operations because of the low (subsidized) interest rate.

For the given level of outreach, the group lending methodology has been a great opportunity for the majority poor as it removes the main entry barrier for those with no collateral, limited literacy, weak technical knowledge and narrow prior money management experience. It has advantages for MFIs in terms of screening those who are not credit worthy. Yet, the methodology is not without problems. The advantages of peer monitoring over traditional practices lies in its social connectedness, as local knowledge about others' assets, capabilities, and characters is used to sort and select.

In theory, the dynamics of joint liability implies that groups screen and self-select their own members to form relatively homogeneous groups; i.e. the members share very similar probability of defaulting a loan. It is assumed that social solidarity and mutual support will ensure that the successful members cover for the defaulters. This increases the likelihood that the poorer and more vulnerable will be excluded, since a partially formed peer group looking for more reliable members with whom to share risk is more likely to reject candidates they consider most risky, namely the very poor. Furthermore, the community "representatives," who may latter on be involved in guaranteeing repayment process, also tend to focus on the less poor, thus endangering the very objective of serving the very poorest section of the population.

Not only is outreach low, but also the terms and conditions of the service need revisiting. The very poor requires diversified/flexible loan terms/conditions: diversified loan size,

8 There seems to be a growing concensus that subsidizing the interest hurts the poor. True, that interest rate restriction results in some "income transfer" to loan recipients. But then, such rates would induce excess demand from all types of applicants, poor and non-poor. Influence and patronage and better connections inevitably bias the distribution of the "subsidized" credit in favour of the better off -- more so when the local targeting mechanism is lax. Then the share of lending to the target group would decline, and there would be large unfulfilled demand, which will be transferred to the informal money lender, thus pushing informal market rates higher. The poor is thus hurt by "subsidized", low interest rate. (See also Braverman and Guasch, 1993, p55, 64; Micro-credit Summit 1999 report, p.62; Johnson & Rogalley 1997; p.52)

9 Research on Grameen Bank clearly pointed out the great significance of the group in screening out the non-credit worthy in the localities: "Women who are really disorganized and cannot 'manage' their households, women who are considered foolish or lacking in common sense, women who are "belligerent" and cannot get along with others, women with many small children, with husbands who are "lazy" and gamble and waste money or are "bad", are generally considered "high risk". It is felt that these women will be unable to use loans "wisely"; they would be unable to save and invest and increase incomes. These women, even if provided with membership, would drop out and would have negative influence on others." (See Syed M. Hashemi (1997); p.115)

10 In terms of ensuring repayments, group lending can have both positive and negative effects. It increases loan repayment because successful borrowers may help repay loans of less successful borrowers unable to repay. Group lending may also reduce the repayment rate if the "entire" group defaults (i.e. when some borrowers who would have paid default because other group members have done so). (See Khandker, Shahidure 1998:p.15).

11 Johnson & Rogelly, (1997) p.12; reported similar serious "targeting errors" or "leakages" for the big micro-finance Institutions in Bangladesh, which in principle target loans away from the better-off, but the poorest, who are often landless (where the "poverty line" is .5 acre), are in fact left-out.
flexible repayment period, repayment frequency, availability of loan on time, lower transaction costs, diversified collateral, etc. Apparently, much remains to be done on this.

The **loan size** has been limited (until recently) to a maximum of Br. 5000, with a view to limiting it to the requirements of the poor. But some, having been clients to MFIs and having developed business skill, require loan size beyond this limit. There are policy revision in this regard currently. But on the other hand, it would be administratively too costly to retail very small loan sizes which might of course be welcome by the very poor. There are, for example, those very poor entrepreneurs who require very small loans (as small as Br. 100, 75, … or even below), for such activities as spinning, weaving, etc.

Likewise the **loan term** also used to be limited to a maximum of one year. This has been one of the main obstacles limiting the efficacy of the microfinance service on the poor who are largely engaged in agriculture and live-stock sector which need more time than one year to produce any result. This has been recently revised to two years (up to five years to some clients). But again, it would be clear that the poor who need short-maturing small loans (one month, two month) would not be well served by institutional lending.

Moreover, since frequently settling part of the borrowed money reduces the risk of repayment both for the client as well as for the lender, installment based repayments are encouraged. More efforts and **flexibility** are, however, needed to suit the **repayment rhythms** with the needs and income flows of the poor. For example, while setting repayment rhythms, it is clear that no serious attempt has been made to establish it on a detailed investigation of households’ income or cash flow using PRA tools like Seasonal Calendar, etc. Rigid repayment schedules do not necessarily correspond to cash availability at the poor household.

On the clients end, the most practical problem faced by MFIs is the very **low absorptive capacity** of the majority poor in rural areas, greatly constraining the potential positive impacts of access to microfinance programmes. Many rightly argue that credit alone, without the necessary infrastructure to enhance the skill capacity of the potential borrower, would often end up without achieving the intended goal of enabling the poor get out of poverty. This might sound more true given the objective reality in the rural areas of the region. In the case of very poor economies with poor infrastructural facilities of all kinds, two relevant issues emerge:

- a) Credit **alone** tends to be used to increase the **scale** of existing activities rather than to move into new, more sophisticated or higher value added areas. It was unusual for credit to trigger a continuous increase in technical sophistication, output or employment: it was much commoner for each of these variables to reach a plateau after one or two loans and remain in a **steady state**. Having been in operation for the last 8 years, and with a clear

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policy of loan size progression (+100%, 75%, 50%, 25% additions from the 2nd loan cycle onwards), the average loan size still stagnates at Br. 838 (See Annex).

b) One of the principal reasons for the lack of innovation and sustained growth among the clients of minimalist (credit-only) credit schemes is that producers are often poorly represented among them. Commonly, lenders’ portfolios are dominated by those involved in trade and in simple food-production and -processing activities, where the scope for innovation and qualitative improvements in techniques is limited. Over 58% and 35% of ACSI portfolio are invested in agriculture (mainly purchase of oxen, traditional sheep rearing and other livestock) and petty trade, respectively.

Currently, there is apparently almost no institution giving such BDS services to a sufficient scale that can respond to all the demands of the poor. New institutions destined to address such demands as Regional Micro and Small Enterprise Development Agency (REMSEDA), etc are just getting established. The early establishments, like the agricultural extension scheme, cover only a small portion of the total farmers in the region. The supply side arrangement is not so strong so far. On the demand side, many clients, as can be expected, are very much risk-averse that even with the availability of credit and BDS service, they do not like to venture into activities other than those inherited from their fathers or for-fathers. In a recent interview of about 300 clients, over 78% responded that they only want to be engaged in activities that they know something about previously. Similar responses have been obtained from micro-finance clients in Tigray region, Adigudom (See Fiona, 2001).

There is also the problem of cultural bias towards some activities. The tendency (and the attendant competition for resources) is often to get on with such activities as agriculture, trade, etc, which are somehow free from cultural taboos. Some non-traditional activities which could provide alternative employment opportunities (like blacksmithing, weaving, tannery, pottery, embroidery, other handicrafts, etc…) are rather frowned at, and not easily taken up by clients. Experience suggests that they offer many advantages: they employ indigenous technology/local input, they are not land-based and are environmentally friendly. They enjoy less competition and are otherwise much more rewarding -- the data indicates that there is a statistically significant difference in profitability between these activities than traditional ones like agriculture. Yet, as indicated above, the total loan that went to finance such activities is less than 5%.

Moreover, the market infrastructure is generally poor. The income level, and therefore the purchasing power in rural areas is very low. Production does not always cater specifically to what this small market demands. The business and marketing skill is non-existent on the part of the client. Due to underdeveloped market information services (through Cooperatives…. production usually focus on traditional few activities. Covariant as well as idiosyncratic risks therefore abound, both for the institution as well as for the clients themselves. Similar products are offered on the small market, which easily saturates. Access to the nearest other market is blocked due to the very poor infrastructure, particularly the road network. Many of the rural areas are inaccessible in the rainy season, making development of internal markets very difficult.
In sum, while outreach is still very limited, operational modalities as well as external infrastructure constrain the programme to achieve the goal of expanding opportunities.

### 3.2 Improving capabilities

One of the objectives of microfinance is to help the target household to improve capability, enhancing the "human capital" within the household through better nutrition, education, skill acquisition, health improvement, etc. The previous surveys suggest that clients were to some extent able to increase their food security situation, and send their children to school. Yet, the microfinance service, as undertaken by ACSI and other MFIs, leaves much to be desired to be effective in improving human capital that enables people to maintain and raise their living standard, as reflected in the impacts related to the education of children and expenditure on food, health, etc.

When examining the income impacts of Microfinance programmes, it is important to recognize that there is a significant difference between "increasing income" and "reducing poverty". Despite the prevalent emphasis on raising incomes as the central objective of development programmes, the two are not synonymous. Clearly, the "use" to which income is put is as important in determining poverty and welfare as the level of income itself -- increased income can be (and often is) gambled away. The assumption of a "rational consumer" is often unattainable. Indications are that a good deal of clients enjoyed improved food security (See Annex). Yet, no one can tell whether such a food is nutritious (with nutrients, protein, iodine,...contents), for the child, mother and other household members. Apparently, the majority poor being served by microfinance has little access to such information on nutrition.

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14 A World Bank study conducted in the early 1990's based on an intensive survey found that it takes about five years for Grameen Bank programme participants to rise above the poverty line income level and about eight years to reach a situation where they do not require loans from targeted credit programme. (See Hashemi 1997, p.113).


17 The Conventional measure of poverty is based on the FGT (1984) model given by:

\[
P_a = \frac{1}{n} \sum_{i=1}^{q} \left( \frac{z - y_i}{z} \right)^{\alpha} \quad \text{where } \alpha \geq 0; \quad z = \text{Total Poverty Line}; \quad y_i = \text{Per capita consumption of household } i ; \quad q = \text{number of people below the poverty line}; \quad n = \text{total population.}
\]

The issue is that the level of income attained by the household that can cover the cost indicated by the “Total Poverty line” or the “Food Poverty Line” simply doesn’t guarantee that the income goes to the purchase of food (and nutritious food) or other basic need items to the household and its members, unless additional information is provided. Indeed the “Capability Poverty Measure” (CPM) developed on the basis of the work of the economist, Amartya Sen, stresses that “Income and commodities were important only in as much as they contributed to people’s capabilities to achieve the lives they wanted (“functioning achievements”). The UNDP (1997) defines “functionings” as referring to the “valuable things that a person can do or be”, such as being well-nourished, having long life-expectancy, and being fully integrated and active member of one’s community. In turn, the “capability” of a person “stands for the different combinations of functionings the person can achieve”, and their freedom to achieve various functionings. (See Sylvia Chant (2003: 16): *New Contributions to the analysis of poverty: methodological and conceptual challenges to understanding poverty from a gender perspective*, United Nations, Women and Development Unit, Santiago, Chile).
Likewise, only few clients manage to send their children to school, indicating yet another sign for low impact on (future) capability. In fact, the fact that only few send children to school could not be wholly attributable to poor performance of the microfinance programme. The education system's in-ability to equip children with marketable skill apparently provide little incentive for parents to send children to school, forgoing their contribution in household enterprise. For parents, the opportunity cost of children at school may indeed be very high. In rural areas, moreover, access to such schools and skill training is very little, to start with.

Moreover, the low health provision and the low purchasing power by poor people, particularly those in rural areas, meant that a good deal of their labour time is liable to be spent attending to health hazards. The HIV/AIDS case is reaching a frustrating scale in rural areas. The ability by the poor to undertake labourious tasks like agricultural and other activities is limited. Poor people therefore may not be able to make effective use of whatever opportunities (skill development, credit, employment, etc…) are opened to them through government or other agencies. Previous survey revealed that some 11% of the dropout from ACSI credit service is caused by ill health on the part of the client. The low level capability issue also relates to the absence of self-esteem, confidence, motivation particularly among women in rural areas. Women, for whom access to such vital resource as finance has been created are not using it fully themselves (more on this below).

These facts strongly suggest that the delivery of credit and other microfinance services in isolation leads to no where in terms of helping the poor improve the human capital.

### 3.3 Reducing Vulnerability

Microfinance can potentially reduce vulnerability by helping microentrepreneurs diversify their sources of household income, increase their savings, expand their options for credit, and improve household money management. It also plays a protective role by helping to accumulate physical assets, increase expenditures on housing, and strengthen women’s role in collaborative economic decision making. The positive protective role of microfinance is related to the fungibility of credit within households and the common use of credit beyond the enterprise. The achievements so far are not so laudable.

As stated earlier, the potential for the microfinance service to enable the client to *diversify microenterprise* activities has been very limited. The survey for the Strategic Business Plan indicates that more than 78% of the clients actually are engaged in activities they already know. As indicated above, several factors dictate this very outcome. First and foremost, the opportunity to be engaged in other alternative employment is very much limited, simply because the BDS service is non-existent. The client, still very much risk-averse, do not want to be engaged in new activities with which they are not very familiar, even with the existence of the credit facility. Non-traditional activities that could provide such alternative are frowned upon, for cultural reasons.
Microfinance can also play a big role in reducing vulnerability of the poor by availing suitable saving products, and enhancing self-insurance. The need to save in cash for the poor is indeed very high for spending requirements related not just for emergencies but also to: life cycle needs, and economic opportunities. Thus, poor people, living in straw hut in a village or in an urban slum, run into problems with money management, and finding a safe place to store savings. The physical risks are the least of the problem. Much tougher is keeping the cash safe from the many claims on it - claims by relatives who have fallen on hard times, by importunate neighbors, by hungry or sick children or alcoholic husbands, and by creditors and beggars. Finally, even when one does have a little cash left over at the day’s end, if one doesn't have somewhere safe to put it he/she will most probably spend it in some trivial way.

Indeed, the poor can save, do save, and want to save money. Only those so poor that they have left the cash economy altogether - the elderly, the disabled..., for example, who live by begging food from neighbours - cannot save money. The recent ACSI survey of 600 potential credit/saving clients indicates that some 79.2% actually have some kind of savings, which they hold either in cash (57.9%) or in kind. Often, it is when saving "in cash" is not convenient that the poor resort to saving in real asset. The achievements in saving mobilization, however, leaves much to be desired, given the potential in the region. So far the number of voluntary savers is not more than 80000. This is a very small achievement in a region with over 16 Mill population, about 3 Mill. households (over 90% living in rural areas with very little access to formal bank). Problems are multidimensional, yet the absence of aggressive promotional work is believed to be the key.

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18 Details are very well narrated in Stuart Rutherford (1999): The Poor and Their Money, Institute of Development Policy & Management, University of Manchester. For the different kinds of savings: “Saving Up”, “Saving Down”, and “Saving Through”, see in Stuart Rutherford (2002?): The Economics of Poverty: How Poor People Manage Their Money, SafeSave, Bangladesh.

19 Some argue that saving facilities for the poor serve very important social objective. According to the “Security Theory” children in developing countries are produced partly to provide informal social security. In situations with overcrowding and in cases in which parents do not take into account the negative externalities imposed by their children (through congestion, and environmental degradation, for instance), social welfare may be enhanced by shifting to alternative social security programmes. For example, establishing secure, convenient savings programmes may allow households to reduce the number of children they have without undermining their ability to cope with less income in old age and can provide a second round of benefits to the community through reductions in negative population-related externalities. (See: Jonathan Morduch (1999): Between the State and the Market: Can Informal Insurance Patch the Safety Net? The World Bank Research Observer, Volume 14, No. 2.

20 The form of holding wealth or capital formation which a rural economic unit chooses depends on the return, the risk, the convenience and the flexibility or liquidity of the alternative investment opportunities. When saving "in cash" is not convenient, the poor resort to saving in real asset (crops put into storage, a house constructed, a pig fattened -- hence the idea of "piggy bank" -- a tree planted, or children raised (and educated) as an investment in human capital, helping one's neighbours and putting on a feast to raise claim for future assistance (social capital). But the return on such investments are not always very large since investments are made in order to save, and not vice versa, when other saving opportunities are unavailable (Schimdt and Kropp, 1987: 26). … The assumptions in the new paradigm in micro-saving is based on: massive demand exists for institutional voluntary savings among the poor; the poor do not need to be taught to save - they already save in a variety of forms. Moreover, in a stable economy with adequate infrastructure, other forms of savings will often be inferior to financial savings. (See Jonathan Morduch and Barbara Haley (2002): Analysis of the Effects of Microfinance on Poverty Reduction, NYU Wagner Working Paper No. 1014, p.65)
Like micro-saving, micro-insurance is a powerful poverty/vulnerability reducing tool, as well as a means for the institution to reduce risk. In the Ethiopian case, since the loan are agricultural loans affected by drought, there is higher risk both for the clients and the institutions. The Ethiopian MFIs do not offer insurance services be it life, disability, health, crop damage insurance to their clients. The poor in Ethiopia are left out of the formal insurance market. However, as an MFI matures and the average loan size increases, providing loans become increasingly risky. Thus, developing insurance products will help address institutional long term profitability issues and provide protection for members against large and more destabilizing shocks. Insurance provision helps to minimize the risks associated with lending money to the poor.

Emergency Loans also provide solutions of last resort for the poor in extreme difficult circumstances. Just because a loan is used for emergencies (e.g consumption) purposes does not necessarily imply that repayment will falter. A significant number of poor households experience real constraints in the financial markets in the sense that they are unable to borrow as much as they would like at the prevailing transaction terms. Given that most of the poor attempt to borrow in order to finance consumption of food and other basic goods that enhance health and labour productivity, such constraints may force poor households to eat less food or cheaper foods with lower nutritional value. Also, when consumption levels are already precariously low, they may be forced to cancel or postpone profitable investments or sell assets -- sometimes at a substantial loss -- to meet irreducible consumption needs. This may lead to greater impoverishment in the long run. Such loans are so far no part of ACSI's microfinance programmes.

One risk associated with taking a loan is that if household income flows are interrupted, a client may have to sell off productive assets to make loan repayment. There was some evidence that poor borrowers were forced into this negative coping strategy when hit by repeated shocks. MFIs might consider policies that allow poor households to reschedule loans when they are hit by sudden and devastating financial shocks. This could help clients protect their productive assets, avoid default, and remains in programs. It could also help reduce the risk to the MFI’s portfolio. Evidence suggests that some 3.7% of the interviewed clients have in fact been more indebted because of taking loan. The skill and expertise is lacking on the part of field staff to accommodate all such demands of clients who might go to negative coping strategies. But more effort needs to be made to this end.

3.4 Empowering individuals

Empowerment is related primarily to women, who comprise a majority of clients in many MFIs. Currently, over 40% of ACSI clients are women, struggling to sustain their family’s livelihood.21 Microfinance plays an important role in empowering women,

21 It is now believed that about 40% of the households in Ethiopia are headed by women (IFAD 2001). Thus, as employment and traditional livelihood strategies for men disappear, poor women in increasing numbers have had to make their ways into the informal sector, primarily in low paying and often menial work -- piece work, vending, petty trading, agricultural labour, collecting garbage, cleaning toilets, and factory employment. In almost every country in the study, both men and women reported women's greater ability to accommodate, bury their pride and do whatever job was available to earn the money to feed the family. This sometimes include prostitution. (World Bank Group, p.50)
primarily by supporting their economic participation. A basic premise is that economic participation is a foundation for other dimensions of empowerment.

The role microfinance plays in-terms of empowering individuals with respect to increasing control over resources, increasing saving, self-esteem, orientation towards the future, etc. leaves much to be desired. Generally, empowerment as a development strategy approach for women involves two levels: intrinsic and extrinsic. The extrinsic level refers to gaining greater access and control over resources. On the other hand, the intrinsic level involves changes from within, such as the rise in self-confidence, consciousness and motivation. It recognizes women's triple roles (i.e., as wife, mother as well as businesswoman) and seeks to meet strategic gender needs through bottom-up participation on resources and development issues that concern the life of women.

Credit and saving programmes in particular are geared towards the promotion of off-farm activities by rural women. These programmes are implicitly or explicitly based on the assumption that rural women are conversant with non-farm income generating activities, have sufficient time and labour to expand traditional, or start new, income generating activities. As suggested above, one of the important issues relevant for gender-focused policy interventions is the question of how rural women manage to actively engage in off-farm activities on top of their demanding roles in agricultural production and domestic labour. Here in lies the appropriate channel to identify the potentials and constraints rural women face regarding gender-focused rural intervention, especially those relating to saving and credit schemes. There are practical problems in this regard.

We can discuss some important issues related to shortage of time women face. Generally, most domestic tasks such as grinding grain and food processing, water and fuel wood collection are known to be highly arduous, labour-intensive and time-consuming. And this applies to many women in developing countries in general. The burden of women in Ethiopia is compounded by the fact that labour saving "appropriate" technology is largely unknown even by the standards of developing countries. Access to clean water, grain mills, roads, energy saving devices, etc., is extremely limited. Some Ethiopian authors take the issue a bit further to argue the burden on women as relating to some cultural factors. Dejene (2000), for one, noted that Ethiopian rural women face significantly higher domestic labour burden (especially in the areas of food processing and cooking) than their counterparts in most of sub-Saharan Africa.22

As we have outlined above, there is also a serious problem of marketable skill in rural areas. There are no institutions providing such opportunities of skill development for the needy. Those that exist tend to concentrate in semi-urban areas, and often such opportunities are snatched by men. Thus, when it comes to skill acquisition, women are more ill-equipped than their male counterparts. The survey indicated that women

---

22 Dejene hypothesizes that this is partly due to the sophisticated and labour intensive nature of domestic production arising from Ethiopian Highland culinary culture. For example, teff (the favorite food grain in Northern highlands) is not only labour intensive in its cultivation but also the preparation of injera out of teff is an equally labour and energy (fuel) intensive process. The preparation of home made spices (e.g., red pepper) is similarly a labour intensive task.
generally took smaller loans, and their profit margin is much lower. Women have to go a long way to be able to be good business managers themselves.

Yet, not all loan destined to women is utilized by themselves. To encourage more women participation in business, ACSI has a target of delivering at least 50% of the credit service to women, which seems to have been attained. However, whether they are actually making use of the loan themselves, thereby improving their business skill and their breakdown position\(^{23}\) is an issue requiring closer scrutiny. In fact, an additional area of concern, in terms of the impact of loans of the poorest, concerns men's usurpation of loans targeted specifically to women\(^{24}\). In a recent survey, the above issue has been directly posed to married women respondents. It is interesting to note that only less than 40% said that they themselves manage the loan, the rest either used it "jointly" with or totally hand it over to their male counterparts.\(^{25}\) Yet, it seems that the mere fact that they are the sources of the credit access have improved their empowerment at least at the household level.\(^{26}\)

4. Conclusions and Recommendations

Some important conclusions and recommendations can be drawn based on the previous discussion for the micro-finance service to be more effective in achieving its laudable objective of attacking the root causes of poverty:

**Expanding Opportunities**

- **Increase Outreach:** To make advances on both fronts of reducing the *rate* and *depth* of poverty, and positively contribute to meeting the target of reducing

\(^{23}\)Women's relative well-being depends on the relative bargaining power of the spouses. The bargaining power, in turn depends on the individual's breakdown position, which represents the welfare level which individuals (husband or wife) would have to face if this cooperation, or marriage, eventually breakdown (See Lutfun N. Khan Osmani 1998: p.32)

\(^{24}\) As such increased income may come at the cost of depletion of other valued resources such as time, health and general well-being. Moreover, accepting that there may be many positive impacts of increased incidence of earnings among women, such as more autonomy and personal power, not to mention reduced poverty, this does not necessarily apply where women’s wages remain low, or they are pressurized into surrendering their earnings to fathers, husbands, or other relatives. In turn, the market value of women’s work may not be particularly important to women themselves compared with other aspects of their employment which, in a given social and cultural context, may be strongly valued at a personal level, such as modesty, respect, acceptability to husbands and kin, job fulfillment and/or the ability to reconcile paid work with childcare. (See in Sylvia Chant (2003: 27): *New Contributions to the analysis of poverty: methodological and conceptual challenges to understanding poverty from a gender perspective*, United Nations, Women and Development Unit, Santiago, Chile)

\(^{25}\)Similar impact study of credit programmes on women carried out on four credit programmes in Bangladesh: the Grameen Bank, BRAK, a large government scheme (the Rural Poor Programme RD-12), and a small NGO (Thangemare Mahila Senbuj Sengstha) by Goetz and Sen Gupt (1995) suggest that women retained significant control over the use to which the loan was put in 37% of cases; 63% fell into the category of "partial", limited or no control over loan use. Furthermore, women were found to have greater control over small loans made for purposes which did not challenge the existing gender division of labour (See Johnson & Rogaley (1997), p.13

\(^{26}\) Zaman (1995) succinctly summarized studies which indicated that women felt that membership in credit programmes is important from the stand point of reducing their chances of desertion by their husbands. It is the fact that women are viewed as the sources of an important resources that appear to underlay these improvements in their status.
poverty indicated in the Poverty Reduction Strategy Paper (PRSP) as well as the 1995 Copenhagen Social Summit global target of reducing poverty by half by 2015, we need to help the poor come out of poverty. This would mean delivering enough credit to the very poor, in remote rural areas through enhancing outreach.

- **Appropriate Terms and Conditions:** To be well-served by the credit delivery, important demands of the poor need to be met. For the poor require a loan that is flexible enough in terms of repayment period and repayment frequency, reflecting his/her unreliable market or the risky business conditions he/she is involved in, availability of loan on time depending on the seasonality of business, diversified collateral, etc. This calls for effort on the part of microfinance institutions as well as regulators, particularly the NBE. Diversifying the lending methodology away from the current "group methodology" into others like village banking and possibly to individual lending may help, for the group lending on the one hand tends to ignore the very poor, and on the other hand, have no room for those who can borrow on individual bases.

- **Expand BDS service:** Credit must, above all, be accompanied by some kind of marketable skill development, which the poor seriously lack. Credit alone can only increase the "scale" of existing activities rather than enabling the poor to move into new or higher value activities. Some kind of cultural transformation may also be called for at this particular juncture in order to change the attitudes of some otherwise poor people who are reluctant, for cultural reasons, to engage themselves in non-traditional activities which are much more rewarding indeed.

- **Rural infrastructure,** particularly the road net-work needs special attention by government and others for a healthy microfinance operations. Given that the poor are largely involved in few enterprises, the risk is indeed high if similar products cater only for the small market nearby, which easily saturates, diminishing potential profitability. Relevant market information and networks are also vital.

- **Diversify Interest:** Given the very poor infrastructure in the region, attending all such clients would undoubtedly increase operation cost, which cannot be covered from such operations because of the low (subsidized) interest rate. The argument that establishing an interest rate that can cover operational cost hurt the poor has no logical justification: interest is not an important part as an input in the total production function of the poor; and we can not guarantee that the "subsidized" credit actually reach the targeted poor. Continuously revising and diversifying interest toward a level that can cover operational costs of working with the poor is essential, and in the interest of enhancing outreach to remote and difficult areas.

**Improving Capability**

- **Credit with Education:** The delivery of credit and saving services alone cannot be sure way out of poverty for the majority poor. Low level capability, due to low human capital, pose permanent constraint on the poor' effort for improved
livelihood. Thus, initiating strategic alliance between, among others, the mutually supportive but operationally separate activities of micro-finance and health and other education services would allow each to do what it does best, yet benefit from each other's activities.

**Reducing Vulnerability**

- *Micro-saving mobilization*: The poor cannot be served very well by the delivery of credit alone. Saving services constitute an important part of the demand of the poor. Evidence in many cases indicate that most poor people want to save most of the time, while they do not want to borrow at all. More efforts are clearly required in this sector both to help the poor guard against vulnerability, as well as to mobilize enough saving which can be injected back to economic activities.

- *Insurance products*, with due emphasis for the technicalities, would also serve many poor and disadvantaged people. *Emergency loan* is not necessarily a bad proposal. In particularly serious and hard conditions, such arrangements may rescue the poor from eating less or cheaper food with lower nutritional value, cancel or postpone profitable investments or sell valuable assets, at a substantial and permanent lose. The *loan rescheduling* exercise, if carried out in a genuine manner, rescues clients with good loan history from entering into indebtedness.

**Empowering Women**

- *Efforts on Women's attitude, skill, labour-saving technology*: Women are "allocated" some portion of the credit, but a good portion of it is destined to their male counterparts, violating the institutional objective. This partly has to do with the fact that women are still highly handicapped with lack of any business skill, much more than their male counterparts. On the other hand, however, this may have also to do with the "wrong assumptions" that planners of services had on the available time that women have. This calls for a collaborative effort.
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The Household Economic Portfolio Model

A. Inputs & Expenditures

B. Income & Other Additions to Resources

C. Credit Received

D. Debt Repaid

Household Resource
- Human
- Physical
- Financial

Household Activities
- Production
- Consumption
- Investment

Individual Resources

Social Networks

Household Flows
Symbolic Representation of the Household Portfolio Model
(Adopted from Chen and Dunn, 1996)

The household economic portfolio consists of a set of household resources (R), a set of household activities (A), and the circular flow of interaction between household resources and household activities. The resources of the household consist of the human resources (HR), physical resources (PR), and financial resources (FR) available to the household at a given point in time:

\[ R = (HR, PR, FR) \]

In any given period, the resources of the household may be augmented by the receipt of credit, represented by the amount of loan principal received (L).

Household activities consist of a set of production activities (P), consumption activities (C), and investment activities (I):

\[ A = (P, C, I) \]

The specific number, type, and intensity of production, consumption, and investment activities in any given period depend on several factors. First, the household is constrained by the set of resources at its disposal, both in terms of own resources (R) and borrowed resources (L).\(^{28}\) In addition, the selection of household activities in any given period is determined by the set of joint and separate resource allocation decisions (D). Thus, the vector of household activities in the initial period \( A_0 \) is determined by the following function:\(^{29}\)

\[ A_0 = f(\gamma_0 R_0, \mu_0 L_0, D_0), \quad 0 \leq \gamma \leq 1, \quad 0 \leq \mu \leq 1, \]

where

- \( R_0 \) = initial resource allocation of the household (assumed given),
- \( L_0 \) = loan principal received in the initial period,
- \( D_0 \) = set of joint and separate resource allocation decisions,
- \( \gamma_0 \) = proportion of household resources allocated to activities, and
- \( \mu_0 \) = proportion of loan principal allocated to activities,

and the vector of activities \( A_0 \) is positively related to the vector of resources \( R_0 \) and the amount of money borrowed \( L_0 \):

\[ \frac{\partial f}{\partial \gamma_0} R_0 \geq 0, \quad \frac{\partial f}{\partial \mu_0} L_0 \geq 0 \]

The outcome of the resource allocation decision is the amount and type of resources generated and returned back to the set of household resources. This outcome provides the new set of resources available to the household at the beginning of the next period \( R_1 \). The income and resource outcome depends on the set of activities selected by the household in the initial period \( A_0 \), exogenous and random factors that occur during the

\(^{28}\) For simplicity, the possibility of accessing additional resources through social networks is ignored. However, the treatment of socially accessed resources would be somewhat analogous to the use of borrowed resources.

\(^{29}\) The functional mapping from resources to activities corresponds to the upper flow (left to right) in the graphical model of the household economic portfolio.
initial period \((e_0)\), the amount of money borrowed during the initial period \((L_0)\), and the effective interest rate under which the money was borrowed \((r_0)\). Thus, the income and resource outcome can be represented by the following function:

\[
R_I = g(A_0, e_0, L_0, r_0).
\]

The exogenous factors might include changes in wages and prices, changes in laws and regulations, and other contextual or environmental changes considered outside the control of the household. These risk-related changes influence the returns to income generating activities, investment activities, and wage earnings:

\[
\Pi_0 = \Pi(A_0, e_0),
\]

\[
N_0 = N(A_0, e_0),
\]

\[
W_0 = W(A_0, e_0),
\]

where 
\(\Pi_0\) = profits generated by income generating activities in the initial period,
\(N_0\) = investment earnings in the initial period, and
\(W_0\) = wage earnings in the initial period.

More specifically, the resources available to the household at the start of the subsequent period can be represented by the following equation:

\[
R_I = \Pi_0 + N_0 + W_0 + (1- \gamma_0)R_0 + (1- \mu_0) L_0 - (1+ r_0) L_0.
\]

Thus, the resources available at the start of the subsequent period \((R_I)\) equal the sum of profits, investment returns, wages, unused initial resources, and unused loan funds minus the interest payments on any money borrowed. In later sections, it will be convenient to represent the profits, investment earnings, and wages by a single earned income function \((Y)\):

\[
Y = Y(R, L, D, e) = \Pi + N + W.
\]

In evaluating the impact of microenterprise services, we are interested in knowing how the household’s resources are changing over time, as this is an indication of changes in household economic welfare. The change in household resources between the initial period and the subsequent period can be determined by subtracting the set of the initial resources \((R_0)\) from both sides of the above equation. The resulting equation provides a flow measure indicating the change in household economic welfare:

\[
R_I - R_0 = \Pi_0 + N_0 + W_0 - \gamma_0 R_0 - (\mu_0 + r_0) L_0.
\]

Thus, there is a greater gain in household resources across periods when profits, investment returns, and wages are higher, and when the interest rate charged on borrowed funds is lower. While unused initial resources and initial borrowed principal have a direct positive effect on resources available in the subsequent period, the ability to generate earned income is constrained by the type and amount of resources allocated to these activities.

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<td>-</td>
<td>-</td>
<td>-</td>
<td>765</td>
<td>1,259</td>
<td>1,456</td>
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<td>1,990</td>
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<tr>
<td>% of Kebeles covered</td>
<td>-</td>
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<td>25%</td>
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<td>7,799</td>
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<td>68,580</td>
<td>107,143</td>
<td>131,330</td>
<td>152,565</td>
<td>215,970</td>
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<td>% of Females</td>
<td>33%</td>
<td>35%</td>
<td>43%</td>
<td>50%</td>
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<td>206,061</td>
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<td>% of Females</td>
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<td>50%</td>
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<td>46%</td>
<td>43%</td>
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<td>271,590</td>
<td>5,244,296</td>
<td>33,869,507</td>
<td>75,759,799</td>
<td>141,569,332</td>
<td>236,255,858</td>
<td>352,296,755</td>
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<td>9,359</td>
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<td>330,568</td>
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<td>581</td>
<td>614</td>
<td>677</td>
<td>804</td>
<td>724</td>
<td>751</td>
<td>795</td>
<td>838</td>
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## Saving Mobilization

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<td>Br</td>
<td>13,254</td>
<td>536,653</td>
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<td>17,721,796</td>
<td>33,729,344</td>
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<td>98,856,347</td>
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<td>7,799</td>
<td>46,647</td>
<td>64,020</td>
<td>137,928</td>
<td>221,061</td>
<td>315,879</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>6,303</td>
<td>18,298</td>
<td>34,917</td>
<td>51,199</td>
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<td>5</td>
<td>Deposit to loan ratio</td>
<td>Ratio</td>
<td>5%</td>
<td>16%</td>
<td>24%</td>
<td>61%</td>
<td>73%</td>
<td>78%</td>
<td>89%</td>
<td>70%</td>
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## Qualitative Indicators of Well-being

<table>
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<tr>
<th>S.N</th>
<th>Indicators</th>
<th>Interviewee</th>
<th>Freq (Yes)</th>
<th>Percent</th>
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<tbody>
<tr>
<td>1</td>
<td>Improved Food Security?</td>
<td>297</td>
<td>198</td>
<td>66.67%</td>
</tr>
<tr>
<td>2</td>
<td>House Construction or major maintenance?</td>
<td>297</td>
<td>54</td>
<td>18.18%</td>
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<tr>
<td>3</td>
<td>Able to send children to school?</td>
<td>297</td>
<td>116</td>
<td>39.06%</td>
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<tr>
<td>4</td>
<td>Improved health?</td>
<td>297</td>
<td>6</td>
<td>2.02%</td>
</tr>
<tr>
<td>5</td>
<td>Purchase additional oxen?</td>
<td>297</td>
<td>44</td>
<td>14.81%</td>
</tr>
<tr>
<td>6</td>
<td>Other benefit*</td>
<td>297</td>
<td>131</td>
<td>44.11%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>297</td>
<td>276</td>
<td>89.9%</td>
</tr>
</tbody>
</table>
Returns to investment: t-test for difference in profitability between trade and agriculture

Two-sample t test with equal variances

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>mnptt*</td>
<td>139</td>
<td>.3612378</td>
<td>.0334653</td>
<td>.3945498</td>
<td>.2950668 .4274088</td>
</tr>
<tr>
<td>mnpta*</td>
<td>119</td>
<td>.2494502</td>
<td>.0252301</td>
<td>.2752278</td>
<td>.1994877 .2994126</td>
</tr>
<tr>
<td>combined</td>
<td>258</td>
<td>.3096769</td>
<td>.0216998</td>
<td>.3485497</td>
<td>.2669449 .3524088</td>
</tr>
<tr>
<td>diff</td>
<td></td>
<td>.1117876</td>
<td>.0430522</td>
<td>.0270061</td>
<td>.1965692</td>
</tr>
</tbody>
</table>

Degrees of freedom: 256

Ho: mean(mnptt) - mean(mnpta) = diff = 0

<table>
<thead>
<tr>
<th>Ha: diff &lt; 0</th>
<th>Ha: diff ~= 0</th>
<th>Ha: diff &gt; 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>t = 2.5966</td>
<td>t = 2.5966</td>
<td>t = 2.5966</td>
</tr>
<tr>
<td>P &lt; t = 0.9950</td>
<td>P &gt;</td>
<td>t</td>
</tr>
</tbody>
</table>

(*NB: mnptt = mean profitability from "Trade"; mnpta = mean profitability from "Agriculture")

Graph 1: Returns to investment difference in profitability between activities

graph mnpt, bar by (activity) means
Figure 1

The Original *Credit with Education* Design

- Large Scale
- Cost-Effectiveness
- Financial Sustainability
- Self-Reliant Local Institution

Inputs | Benefits | Outcomes
--- | --- | ---
Credit | Income and Savings | Improved Household Food Security
Women's Associations | Self-Confidence and Status | Better Health and Nutrition
Education | Knowledge and Practice | Longer-Term Outcomes

Program Inputs | Intermediate Benefits