

A Study of RDP Loans and the Investment Costs of some IGAs

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ব্র্যাকের অন্যতম প্রোগ্রাম রুরাল উন্নয়ন কর্মসূচির (আরডিপি) মাধ্যমে ব্র্যাক প্রথম থেকে দুঃস্থ মহিলাদের ঋণ প্রদান করে আসছে। যদিও ঋণ কর্মসংস্থান বৃদ্ধিতে সার্থক হয়েছে, তথাপি অপরিষ্কৃত পরিমাণ ঋণ যে কোন প্রজেক্টের কার্যকারীতাকে ব্যাঘাত করতে পারে। সুতরাং ঋণের পরিমাণ যেন ঠিক থাকে, সেইদিকে লক্ষ্য রাখতে হবে যেহেতু উৎপাদনশীলতা, রুরাল আয় এবং প্রোজেক্ট Sustainability উপর প্রভাব ফেলে।

এই সমীক্ষার লক্ষ্য ছিল আরডিপির কিছু আয়মূলক কাজের ঋণের পরিমাণ নির্ধারণ করা। কুমিল্লা, মানিকগঞ্জ, রংপুর এবং নীলফামারীতে চারটি গ্রাম সংগঠন বাছাই করে এই সমীক্ষা পরিচালিত হয়। যে সমস্ত প্রকল্প বাছাই করা হয়, তা হলো, ক্ষুদ্র ব্যবসা, ধান ভান্ডা, সবজি চাষ, রিক্সা, একদিনের মুরগীর বাচ্চা পালন এবং দুগ্ধ গাভী পালন প্রকল্প।

গবেষণায় দেখা যায় যে, যে সমস্ত প্রকল্পে বিনিয়োগের সাথে সাথে আয় আসে না, যেমন, গাভী (দুগ্ধজাত) এবং মুরগীর বাচ্চা পালন, ঋণের পরিমাণ মোট উৎপাদন ব্যয়কে Cover করতে অক্ষম/ব্যর্থ হয়েছে। এছাড়া যে সমস্ত প্রকল্পে কোন gestation gap নাই, যেমন ব্যবসা এবং ধান ভান্ডা সেখানে যে প্রাথমিক invest cost নির্ভর করে শুধু মাত্র ব্যবসায়িক scale এর উপর নয়, বরং অন্যান্য বিষয়ের উপর যেমন মহিলা কতদিন ধরে সংগঠনে সদস্য এবং সে কতদিন ধরে তার এই ব্যবসার সাথে জড়িত। মুনাফা তুলনা করলে দেখা যায় যে, রিক্সা সব থেকে বেশি মুনাফা লাভ করতে সক্ষম, এবং এর পরপরই হলো ক্ষুদ্র ব্যবসা এবং ধান ভান্ডা। মুরগীর বাচ্চা পালন সবচেয়ে কম লাভজনক (মুরগীর অসুখ এবং মৃত্যু এই দুইটির ঝুঁকি সবসময়ই থাকে)

কিছু সুপারিশমালাঃ

১) যে সমস্ত প্রকল্পে gestation period বেশি, সে সমস্ত প্রকল্পে অন্তত প্রত্যক্ষ খরচকে মিটানোর জন্য ঋণের পরিমাণ বাড়ানো উচিত। এছাড়াও প্রকল্পের scasonality-র দিকও বিবেচনা করা উচিত।

Abstract

This paper is a cost study of the six most commonly performed micro-enterprises in four village organizations. It is an investigation to see whether loans for these micro enterprises restrict borrower's ability to meet the purchase cost of working capital and thus sustain themselves. Fixed and variable costs were estimated to calculate total investment cost. Project viability was assessed by calculating the return on investment in terms of the return on investment. Out of a total sample of 114 respondents, the key findings show that for IGAs with no gestation gaps, namely trading and paddy husking, loans were on the whole sufficient to cover investment cost. However, investment costs in these cases are also a function of factors such as the scale of operation and prior involvement with the activity. For IGAs with gestation gaps, namely vegetable cultivation, milch cow and chick rearing, it is recommended that loan sizes may be increased due to large initial investment outlays.

1. INTRODUCTION

1.1 Context of the study

Micro-finance over the past decade has been successful in raising the socio-economic status of the rural poor. Although income generating activities (IGAs) create little fixed capital leading to relatively small growth potential, rural credit helps in primarily reducing underemployment in the rural sector by raising household productivity. However, insufficient credit may stifle client graduation and project sustainability. It is, therefore, vital to determine appropriate loan sizes for particular enterprises as this will have implications on their productivity, income and sustainability. If the finances required for a programme are not sufficient to cover the cost, then the programme's effectiveness may be jeopardized.

BRAC provides micro-finance through its Rural Development Programme (RDP). Credit is disbursed either for 'sector programmes' or as general loans. In the former case loans are invested in particular micro-enterprises for which BRAC provides training, inputs and logistic support. Loan sizes in these cases are predetermined. In the case of general loans, no extension services are provided and, therefore, the loan size is determined after field staff have evaluated particular applications.

A previous study by Zaman et al(1995) on the profitability of BRAC-financed projects commented that credit disbursement was too focused on "achieving targets as opposed to ensuring that the loans make a significant contribution to household income."¹ Although this is not a study purely on the profitability of IGAs, it is an investigation to see if loans for particular micro-enterprises enable the borrower to meet the cost of working capital to sustain themselves throughout the growth cycle of the micro-enterprise.

¹ Zaman, H. et al., "Profitability of BRAC-financed Projects: a study of seven microenterprises in Matlab", BRAC-ICDDR,B Joint Research Project - Working Paper No.7 (1995)

1.2 Objective

The study's main objective was to calculate the initial investment cost of some of the most common micro-enterprises to determine whether the loans disbursed were sufficient to finance them. The initial investment cost referred broadly to those costs incurred in the period before the income start accruing. This will be outlined in more detail for each activity below.

Another objective was to look at the gross return per taka invested/return on investment² of the enterprise wherever applicable. This would help the members to determine the profitability of the enterprise. In cases where the ROI had a value greater than the cost of capital, the enterprise was regarded to be a profitable enterprise.

Factors such as differing abilities to meet cost and fluctuating market prices prevent determining particular loan sizes but findings of the study may give an indication on the funds required to run a programme.

1.3 Methodology

The cost information of six most common micro-enterprises was collected from the members of four Village Organisations (VOs) administered under four different Area Offices (AOs).

The initial investment cost in this context mainly focused on the variable costs and the depreciation value of the fixed assets (mainly equipments). Depreciation was calculated not for their entire expected lifespan but for the period for which cost had been estimated.

1. Fixed costs: costs incurred in obtaining tangible assets for running the business and does not vary with the level of output.

² *ROI = Gross revenue - interest / investment

2. Variable costs: costs of goods which have to be purchased on a regular basis i.e. costs that vary with the level of output (operation and maintenance cost). Theory dictates that to remain in business in the short run, one will have to cover at least the variable costs.

Some points further need to be clarified for subsequent calculation. Loan size referred to the amount of loan received after deduction of compulsory savings.

The problem of determining the cost for home supplied inputs was overcome by employing the opportunity cost doctrine. Opportunity cost of an input was defined as the income which an input was capable of earning in alternative employment in the firm or outside the firm.

Interest on loan which had to be repaid in instalments was another form of cost borne by the borrowers and was used in the present context to estimate the investment cost. It referred to the borrowing rate, i.e., the effective interest rate payable to BRAC for the project to be financed.

Labour forms an important component of total cost. Usually the price of labour is determined by how much the labour would have earned in alternative employment. However, in this case opportunity cost of labour had been excluded for two reasons. First of all, women regarded their business primarily as a means of supplementing household income as IGAs fit around household responsibilities and were thus not considered as full time occupation. Secondly, the opportunity cost of the borrowers may be assumed to be close to zero particularly when considering their occupation alternative to BRAC membership was almost nil.

In cases where the husband of the borrower was involved in the enterprise (partly or wholly), as in vegetable cultivation and rickshaw, the opportunity cost of labour had been estimated on the assumption that his next best alternative occupation was day labour.

Inflationary adjustment has not been made on the assumption that the inflationary changes in benefit will compensate for similar changes in costs.

Sample Area and Sample Size

This report is an extension of an earlier report on the "Sources of Weekly Instalment Payments". An attempt was made here to estimate the initial investment costs of some of the most common enterprises found in four Village Organizations in four regions namely Comilla and Manikgonj (two better off areas in terms of economic activities) and Rangpur and Nilphamari (two relatively depressed areas). Areas were purposively selected and so were the activities and members. Area Offices (AO) were chosen on the basis of diversified activities. Data collection was carried out from mid-October to mid-November, 1997. All 110 respondents had to fill a structured questionnaire about the initial investment cost of their project. Field visits were undertaken in Gazipur and Matlab by the researchers as preliminary preparations to conduct the study.

Limitations:

1. Due to the limited size of the sample, the study may not be a true representative of the entire programme. Findings may help to give a general indication but results should be interpreted with caution.
2. Transaction costs have been excluded - going to the office for receiving the loan, going to weekly meetings (all these incur implicit cost in terms of foregone work).
3. Due to a lack of basic accountancy and literacy skills it is difficult to obtain very accurate information on revenue from the borrowers. It is probable that the costs are overstated. Moreover the recall method questions the reliability of the cost information.
4. Distortions in market prices may also affect the cost information.

Findings and Discussion

The most common loan uses were found to be in trade, paddy husking, rickshaw, vegetable cultivation, chick rearing and milch cow. Table 1 summarizes the investment cost of each type of activity and their revenue.

Table 1: Average Investment Costs and Loan Sizes (Tk.)

IGA	Sample size(n)	Loan size (TK)	Invest. cost (TK)	Duration (TK)	Total rev. (TK)	Net income
Trade ¹	8(7)					
-rice	4	7125	1393	1 week	2116	723
-fish	4	3325	1175	" "	1450	35
Paddy husk ²	24(22)	5344	389	" "	409	20
Rickshaw ³	16(14)	4275	14361	50 "	27450	9089
Veg. cult ⁴	24(22)	3325	2781	12 "	2465	-
Chick rear	4(4)	5700	8150	8 "	-	-
Chick rear	4(4)	7600	10497	" "	10.880	383
Milch cow	30(27)	4788	9499	50 "	-	-

Figures in parenthesis indicate percentages

For activities like paddy husking, where items may be stored and traded on the buffer stock principle, cost and revenue per unit had been calculated as weekly figures (for costs and revenue) would otherwise give a distorted picture. In such cases profitability was determined by the following equation which had also been used by Miah (1990).

$$\Pi = P_s \cdot Q_s - \sum P_b$$

Π =profit

P_s =per unit price of output sold

Q_s =quantity of the output sold

$\sum P_b$ =summation of per unit price of input

¹ Weekly cost and revenue is shown

² Cost per md has been derived as paddy can be stored

³ Yearly estimates are given

⁴ Cost for three months is estimated

⁵ Cost for a lot, i.e., for eight weeks is considered

i. Petty trading

Only seven percent of the members were involved in trading activities (though there were other activities for which costs were not estimated). It must be mentioned that petty trading was not a uniform category. In our sample, trading did not involve the purchase of any fixed capital. Investment costs only comprised operating costs such as the purchase of goods to be traded, electricity/lighting facilities and transport. Members had been found to carry on this activity with a sum as low as Tk.800 or as high as Tk.4000 depending on the scale of operation. Average gross revenue varied accordingly from Tk.500 to Tk.4400.

Fish and paddy were found to be the most common goods being traded in our sample though the investment sum differed between the two, for fish ranging from Tk.1800 to Tk.2000, but the range was much larger for paddy (Tk. 1875 to Tk. 10,125). Scale of operation for fish was low due to the perishable nature of fish as it had to be sold immediately. In both the cases, the value of the inventory had been added to the revenue for which reason, the total revenue showed such a high figure and as a result, profit higher amounting to Tk.7604. In few instances, members' involvement in trading acted as a subsidiary activity to some other micro-enterprise. Often the latter were projects with gestation lags so that the income from trading could be used to support household expenses.

ii. Paddy husking

Cost of paddy per unit (maund) had been considered as different amounts of paddy were bought and then sold despite the loan size being the same which is mainly due to people having different perceptions. The average loan size was Tk.5344 and only 55% of it was invested. Total paddy bought was above seven maunds which came to six maund of rice after processing and out of this, only four maund of rice was sold in the market. The rest one and a half maund was held as inventory³.

³ Value of inventory was not estimated for measuring the unit cost

The variable costs constituted the largest portion of the expenditure which was due to the high purchase price of paddy amounting to 63% of the total cost. The total revenue was Tk. 409.17 per md and the net income⁹ per maund was Tk.20.

Table 2 : Investment cost of paddy husking

Cost (per md.)	Investment (Tk.)	% of Total Cost
Fixed Cost ¹⁰	312	-
After depreciation		
Fixed Cost	7	1.8
Variable Cost	355	91.3
- Purchase of rice	243	63
- Equipments & misc.	112	29
Cost of capital ¹¹	27	7
Total Cost	389	100

Estimates of weekly net income came to Tk.95.

iii. Vegetable cultivation

The programme participants constituted primarily women who were given three day training for this activity. Although each member was expected to cultivate about 33 decimals of land, the average landholding of the members in the study was found to be roughly 25 decimals; however, the study may involve a selection bias.

The cost and benefits of vegetable cultivation per season, i.e., three months is summarized in Table 3.

Cost of labour had been calculated in this instance referring mainly to the labour of the member's husband required for preparing the land for cultivation. Wage labour referred to the payment made on the hired labour on daily basis. Human labour constituted the most important input used in land preparation, weeding,

⁹ TR - VC - depreciation - cost of capital; or, Tk.409 - Tk.389 - 7 = 27

¹⁰ Depreciation (100% of holding pan at Tk.312) = 50

¹¹ Interest on capital (25% of Tk.5500) = 2 weeks

and harvesting. Use of insecticide was quite low in all the study areas. Members were found to use both home supplied and purchased seedlings.

Table 3 : Investment cost of vegetable cultivation

Cost	Investment (Tk.)	% of Total Cost
Fixed Cost	125	4.5
- Land rent ¹²	125	4.5
Variable Cost	2404	86
- Seeds	413	15
- Tiller	256	9
- Chemical fertilizer	274	10
- Pesticide	69	2.5
- Irrigation	462	17
- Fence	190	7
- Misc	20	0.7
- Labour (own)	303	11
- Labour (wage)	417	15
- Service charge	45	1.6
Cost of capital¹³	207	7.4
Total cost	2781	100

Seedlings when purchased were valued at the prevailing market rate in the study area. The cost of home supplied seedlings were determined by the expenses incurred in the process of producing those seedlings. Home produced manure was also used and the cost of the manure was charged on the basis of the prevailing local rate. 83% of the loan has been invested in vegetable cultivation.

Profitability in agricultural cultivation is more a function of the season rather than the initial investment outlay i.e., a question of catching the market at the right time. Consequently profitability is also affected by factors such as input supply, marketing facility, irrigation and output prices. The total revenue per season (three months) on 25 decimals of land had been found to be Tk.2465. However, most of the cultivators in our sample used the produce for own consumption for which monetary value had been estimated by equating the approximate amount consumed with market value.

¹² Tk.500 yearly, so for three months, it is Tk.125
¹³ (25% of Tk.8325) i.e. Tk.207

iv. Rickshaws

In this case, investment cost comprised of the depreciation value of the purchase cost of rickshaw and the license fee, both of which on average accounted for 7% of the total investment cost. Other costs mainly included the repairing cost, regular maintenance cost, which took up only 2% of the total cost.

Table 4 : Investment cost of a rickshaw

Cost	Invested (TK.)	Total Cost (%)
Fixed Cost (Purchase cost)	3738	
- Licence:	58	0.4
<i>After depreciation</i>		
- Purchase cost ¹⁴	935	6.5
Fixed cost	993	7
Variable cost	243	1.7
- Maintenance:	89	0.6
- Repairing cost ¹⁵	154	1.1
Cost of labour ¹⁶	12000	84
Interest on capital ¹⁷	1125	8
Total Cost	14361	100

Major proportion of the cost was the opportunity cost of the rickshaw puller (the member's husband) which was calculated in this context on the assumption that his next best alternative would be day labour.

Average loan size was found to be Tk.4275. Rickshaws generated an average weekly revenue of Tk.549 on the assumption that a rickshaw puller was able to drive a total of 50 weeks. Out of a sample of 16 rickshaw pullers, only five could not meet fixed costs. Average net income per annum was Tk.9089 (Tk.27450-Tk.1236-Tk.12000-Tk.1125)

v. Milch Cow

Model/milch cow is one of the components of the livestock programme. Interested members are provided relevant training for rearing the milch cow whose optimum

¹⁴ 25% of Tk.3738) or Tk.935 on the assumption that it will last for 4 years

¹⁵ 25% of Tk.616) or Tk.154

(Tk.40 X 6 days X 50 weeks) or Tk.1200

¹⁷ 25% of Tk.4500) 50 weeks) or Tk.23

Table 6 : Investment cost of a chick rearing unit

Investment Cost	TK.	% of Total Cost
Fixed cost	3336	-
- Shelter	2862	-
- Feeders	289	-
- Drinker	117	-
- Brooder	68	-
<i>After depreciation</i>		
Fixed Cost	163	1.6
- Shelter ²¹	115	1
- Feeders ²²	30	0.3
- Drinkers ²³	11	0.1
- Brooder ²⁴	7	0.1
Variable cost	10094	96
- Purchase cost:	4500	43
- Feed:	4890	47
- Medicine:	423	4
- Litter:	75	0.7
- Electricity:	153	1.5
- Misc:	53	0.5
Interest on capital²⁵	240	2.3
Total Cost	10,497	100

Chicks supplied by the Government farm

Unit capacity:	325
Duration:	8 weeks
No. of lot:	5 lots per year
Price:	Tk.11
Loan size:	Tk.5700

Fixed cost accounted for 2% and the variable cost almost 95% of the total cost respectively. The revenue from this type could not be ascertained due to the unavailability of data.

²¹ (20% of Tk.2862) or Tk.115

²² (50% of Tk.289) or Tk.30

²³ (50% of Tk.117) or Tk.11

²⁴ (50% of Tk.68) or Tk.7

²⁵ (15% of Tk.8000) or

Table 7 : Investment cost of a chick rearing unit

Cost	Investment (Tk.)	% of Total Cost
Fixed cost	3232	-
- Shelter	2875	-
- Feeder	162	-
- Drinker	171	-
- Brooder	24	-
<i>After depreciation</i>		
Fixed cost	150	1.8
- Shelter ²⁶	115	1.4
- Feeder ²⁷	16	0.2
- Drinker ²⁸	17	0.2
- Brooder ²⁹	2	0.03
Variable cost	7700	94.5
Purchase cost:	3600	44
Feed:	3600	44
Medicine:	193	2.4
Litter:	50	0.6
Electricity:	227	2.8
Misc:	30	0.4
Cost of capital³⁰	300	3.7
Total Cost	8150	100

In both type of chick rearing sample, 71% of the costs of the inputs had been covered by credit.

Conclusion

The findings revealed that in all the cases except for chick, milch cow rearing, and rickshaw pulling, loan sizes on average seemed quite adequate to meet the total expenditure of the project. In the case of milch cow especially, where an additional 58% of funds had to be pooled from different sources before income started flowing implies that loan disbursed was not quite compatible with the investment cost. Similar case applied for chick rearing unit where the shortfall occurred due to high variable cost which may be attributed to a longer gestation period. For activities like trading and paddy husking, an optimum loan size could not be

²⁶ Depreciation value (20% of Tk. 2875)/5 or, Tk. 115
²⁷ .. (50% of Tk. 162)/5 or, Tk. 16
²⁸ .. (50% of Tk. 171)/5 or, Tk. 17
²⁹ .. (50% of Tk. 24)/5 or, Tk. 2
³⁰ (25% of Tk. 6000)/5 or, Tk. 300

determined by unit cost alone as these IGAs were conditioned by other factors such as number of years the member had been involved with the IGA, actual item being traded, price fluctuation of the item and so forth. On the other hand, the returns of both the agricultural and non-agricultural activities may be affected by a variety of economic as well as non-economic factors which should not be ignored while selecting any microenterprise.

Return on investment for different projects had been estimated to find out the benefits incurred for one taka invested. It was calculated by dividing the gross revenue with investment. It is important as it informs the borrowers of choices among the alternative enterprises. This was used to determine the cost-effectiveness of each enterprise. Hence, the higher the return, the more effective the activity.

The following table will show a comparative analysis on the relative performance of each enterprise on a weekly basis.

Table 8 : Comparative analysis of different enterprises

IGA	Loan size	Weekly cost	Total revenue	Net income	ROI (gross)	ROI (net)
Trade						
- rice	7125	1393	2116	723	1.51	0.51
- fish	3325	1175	1450	35	1.23	0.03
Paddy husk	5344	1847	2455	608	1.33	0.36
Rickshaw	4275	276	549	273	1.99	0.99
Veg. cultiv. ¹	3325	231	205	-26	0.88	-0.11
Chick rear	7600	1312	1360	48	1.04	0.04
Milch cow	-	-	-	-	-	-

Figures in parenthesis indicate percentages

The above table suggests that those involved in rickshaw pulling earn the highest rate of return from their investment followed by traders. This may explain the reason as to why so many borrowers preferred to go into activities such as rickshawpulling or trading. Even in case of ricksnaws, if the opportunity cost of

¹ Revenue may seem low either due to low market prices or due to under-reporting

labour was considered to be equal to zero, then the gross return or the net return per taka invested would still have been the highest among all the projects considered, i.e., 2.3 and 1.15 respectively. Paddy husking had also been found to be quite promising. It should be mentioned here that in trade and paddy husking, which are indeed profitable ventures, entire amount of loan does not have to be invested. Substantial return could be earned without having to spend the entire loan amount. Due to lack of information revenue from milch cow could not be estimated/ascertained but is hoped that once the cow starts producing milk high return can be obtained by selling milk. The return figure of vegetable cultivation was so astonishingly low as many factors could be held responsible for affecting the profitability in such a short span of time. The worst picture emerged in the case of chick rearing where the loan size not only matched the investment cost but also generated insufficient income to the members. It is pertinent to point out here that except for trading and agricultural activities, investment cost of the enterprises had far exceeded the average loan size.

Policy Implications:

1. Loan size needs to be increased in enterprises with a gestation period as it proved insufficient to cover the variable cost. In addition, the seasonality of the project must also be considered in trying to match the loan size with the project.