

Sector Scan of TUP Enterprises: Identifying Determinants of Sustainability

Safeena Alarakhia
Proloy Barua

March 2005

BRAC Research Report



BRAC Research and Evaluation Division
BRAC Centre, 75 Mohakhali, Dhaka 1212, Bangladesh
E-mail: research@brac.net, Fax: 880-2-8823542, 8823614
Telephone: 9881265, 8824051, 8824180-87

Sector Scan of TUP Enterprises: Identifying Determinants of Sustainability

Safeena Alarakhia and Proloy Barua

March 2005

Research and Evaluation Division
BRAC Centre, 75 Mohakhali, Dhaka 1212, Bangladesh
E-mail: research@brac.net, Fax: 880-2-8823542, 8823614
Telephone: 9881265, 8824051, 8824180-87

For more details about the report please contact: salarakhia@yahoo.com, pbarua_2004@yahoo.com

ACKNOWLEDGEMENTS

In preparing this report, there are several people who contributed their time and knowledge, who deserve special mention. We wish to especially thank Ms. Rabeya Yesmin, Mr. Saleh Ahmed and Mr. Hafizur Rahman for sharing their knowledge, experience and learning from the TUP programme and for their valuable support in providing programme related data and information. We are also thankful to Dr. Imran Matin for his guidance in developing this report. We are very grateful to the BRAC field officers working directly with the TUP programme for generously giving their time to answer our numerous questions and for logistical support while conducting fieldwork. Finally, a special thanks to all of the TUP members who participated in focus groups discussions for their valuable time and insights, that are the foundation of this study.

List of Abbreviations

| | |
|--------------|---|
| AO | Area Office |
| BDP | BRAC Development Programme |
| EPO | Enterprise Programme Organizer |
| FGD | Focus Group Discussion |
| GSC | Gram Shayak Committee |
| HO | Head Office |
| IGA | Income Generating Activity |
| IGVGD | Income Generation for Vulnerable Group Development |
| PO | Programme Organizer |
| RO | Regional Office |
| RM | Regional Manager |
| SD PO | Social Development Programme Organizer |
| SIP | Special Investment Programme |
| STUP | Specially Targeted Ultra Poor |
| TPO | Technical Programme Organizer |
| VO | Village Organization |

EXECUTIVE SUMMARY

A key objective of the CFPR-TUP programme to assist the ultra poor is the development of sustainable livelihoods, through the transfer of assets and skills to specially targeted ultra poor members for income generation. During the pilot phase of the programme between 2002-03, six enterprises were selected to offer to TUP members – cage rearing of poultry, dairy cow rearing, goat rearing, vegetable cultivation, horticulture nursery and non-farm enterprises. The sector scan of TUP enterprises is a comprehensive study comparing and evaluating the selected TUP enterprises on key criteria that relate to enterprise sustainability – the likelihood that TUP members will continue operating the enterprise after the withdrawal of BRAC programme support.

The range of enterprises offered to TUP members differ in some important ways. These differences affect the ability of TUP members to sustain the enterprises, based on their individual, household and social circumstances. Enterprise specific characteristics such as risk and investment needs, and to a lesser extent time, skill and labour requirements are principle factors determining the likelihood of TUP members continuing with a given enterprise over the long term. Specifically, enterprises with combined characteristics of high risk and high investment costs, such as cage rearing of poultry and vegetable cultivation, were found to be sustainable by only a small percentage of TUP members who were initially allocated these enterprises. On the other hand, low risk enterprises, low cash investment enterprises such as cow rearing for which the main investment was time and labour, rather than cash, were found to be highly sustainable.

Risk was found to be a key factor determining enterprise profitability. Projected enterprise economics, detailing expected costs and revenues and hence income available for consumption generated by TUP enterprises, typically overestimated profitability. The difference appears to be explained largely by enterprise related risks that occur in practice as TUP members operate their respective enterprises, and reduce profitability. External risks, outside the control of TUP members, such as weather and local market conditions, were found to be key risks in the agriculture based enterprises. In the case of livestock enterprises, internal risks, stemming from TUP actions, were found to be of primary importance. For example, a key factor constraining profits from cow and goat rearing was the inability of TUP to properly feed livestock due to a lack of access to grazing land reducing their value and output. Factoring in these risks changes the picture of the income TUP enterprises are likely to generate and their relative attractiveness as ongoing sources of income

While profitability and risk, are important determinants of TUP enterprise sustainability, individual TUP members' household and social circumstances, are equally important determinants. Positive support from family members, neighbours and employers are critical for ultra poor members to achieve sustainable livelihoods. TUP programme POs who work closely with TUP members throughout the first 18 months of operating their enterprises further play a key role in promoting the sustainability of TUP enterprises. During the cycle of support, POs have a duty to transfer necessary knowledge and skills to TUP members for sustaining their enterprises. Encouraging participation in all enterprise related decision-making including the choice of asset and purchase and sale of inputs, which TUP members may initially lack experience and expertise for, can increase the likelihood that at the completion of the support cycle, TUP members will have the confidence and skill necessary to fully take over responsibility for managing their enterprises as they see fit, to improve their household welfare.

Learning from experience to date is evident in changes observed in the policy and practice of transferring assets to TUP member over the two pilot years of the programme. Less sustainable enterprises such as poultry rearing, vegetable cultivation and horticulture nursery have been displaced by lower investment, lower risk assets such as cows and goats, and non-farm enterprises. Allocations of the more complex and risky enterprises has been more limited, and narrowly targeted. Furthermore experience gained by POs working with TUP members over consecutive cycles has improved their ability to screen TUP members prior to allocating assets to better assess their suitability for a given enterprise, and to identify and pre-empt problems that may be faced by TUP members in operating their enterprises.

INTRODUCTION

Challenging the Frontiers of Poverty Reduction-Targeting the Ultra Poor (CFPR-TUP) is a programme initiated by BRAC, to assist the extreme poor in Bangladesh to achieve sustainable livelihoods. CFPR-TUP aims to “*push down*” poverty reduction initiatives to reach the poorest of the poor with new instruments of assistance, and to “*push out*” the frontiers of traditional welfare support, developing socio-political institutions for the ultra poor. CFPR-TUP covers three distinct groups of ultra poor members – ultra poor members of BRAC’s Development Programme (BDP), member selected into the existing Income Generation for Vulnerable Group Development (IGVGD) programme, and specially Targeted Ultra Poor (TUP) members. While BDP and IGVGD programme assist this target group by focussing on providing microfinance and microfinance combined with food support respectively, the TUP group comprises the most rigorously targeted ultra poor members, who are selected for intensive and broad based support in economic, health and social development.

A distinct component of the programme of support for TUP members is the Special Investment Programme (SIP) focussing on economic development. SIP includes the transfer of productive assets, valued on average Tk. 9,600 and stipend support of Tk. 70 per week over one year for TUP members. Over an 18-month cycle, TUP members further receive enterprise specific training, and ongoing 1-on-1 technical support from Technical Programme Organizers (TPOs) at their homestead, through the supporting Employment and Enterprise Development component of the programme. During the pilot phase of the programme, between 2002-03, 10,000 TUP members were given assets and inputs for operating one of six selected enterprises—cage rearing of poultry, rearing of dairy cows, goat rearing, vegetable cultivation, horticulture nursery or non-farm enterprises.

This sector scan focuses on the experience of the pilot phase of the SIP and Employment and Enterprise Development programme towards promoting sustainable enterprises for TUP members. The study is a comparative analysis of the experience and performance of TUP members across the different enterprises offered through the SIP. The aim is to identify key determinants of enterprise sustainability – the likelihood of TUP members sustaining their initial enterprise as an ongoing source of income after the withdrawal of BRAC programme support. Sustainability in this sense includes:

- TUP members’ ability to refinance and maintain/expand the activity after the withdrawal of BRA support;
- TUP members’ capacity (non-financial) to operate the IGA profitably.

In addition to enterprise specific sustainability criteria, the study further considers sustainability of enterprises for the ultra poor on a more holistic level, identifying forms of support from BRAC and other local institutions, and characteristics of individual TUP members and their social environment that affect enterprise sustainability.

The report is organized into four sections. Section I presents a framework for comparing TUP enterprises, identifying and explaining key criteria for comparison and evaluation. Section II examines the experience of TUP members in each of the six selected enterprises and re-evaluates enterprise economics for each, focusing on the relationship between profitability and risk. In this section, enterprise specific risks are identified and factored into enterprise economics of TUP enterprises, based on the reported experiences of TUP members. The adjusted estimates of expected profitability of TUP enterprises give a changed picture of the net and relative income TUP members can be expected to earn from each of the selected

enterprises. Section III presents an evaluation and ranking of the six enterprises based on both TUP and PO experience. Section IV identifies determinants of enterprise sustainability based on enterprise characteristics, characteristics unique to individual TUP members, and BRAC policy and the role of POs. Finally, Section V identifies programme learning that has emerged from the pilot phase of the TUP programme in selecting and targeting enterprises to TUP members to promote sustainability.

The findings presented in this report may be useful in guiding BRAC CFPR-TUP policy towards better targeting, or matching of assets/IGAs for TUP members based on their poverty characteristics and existing skills and resources. Furthermore, the findings of this report should assist BRAC in identifying which types of enterprises that may be more appropriate choices for targeting asset transfers and other forms of assistance, as the TUP programme scales up and expands to new regions. In identifying the common problems TUP members are facing with each enterprise that affect sustainability, this study can also provide direction in how TUP members in each enterprise can be better supported by BRAC or institutions developed through the TUP programme, towards achieving sustainable livelihoods.

METHODOLOGY

Data was collected through a combination of enterprise specific Focus Group Discussion (FGDs) with TUP members and structured group discussions with Technical and SD POs. In total 36 FGDs were conducted covering all seven TUP districts with each enterprise selected in at least four districts.¹ Summary of FGDs is presented in figure 1 and table 1. During the discussions, TUP members were asked to relate their experience with their given enterprise – including daily or seasonal routines, time spent on enterprise activities, costs incurred, patterns of income, and problems faced. Both qualitative and numerical data was collected through the FGDs for comparative analysis. Additionally, 12 PO discussions were conducted across the areas studied to supplement data from FGDs. Part of these discussions was a ranking exercise in which POs were asked to compare each enterprise offered in their respective areas on a set of objective criteria related to enterprise sustainability.²

Figure 1. Flow chart of focus group discussions

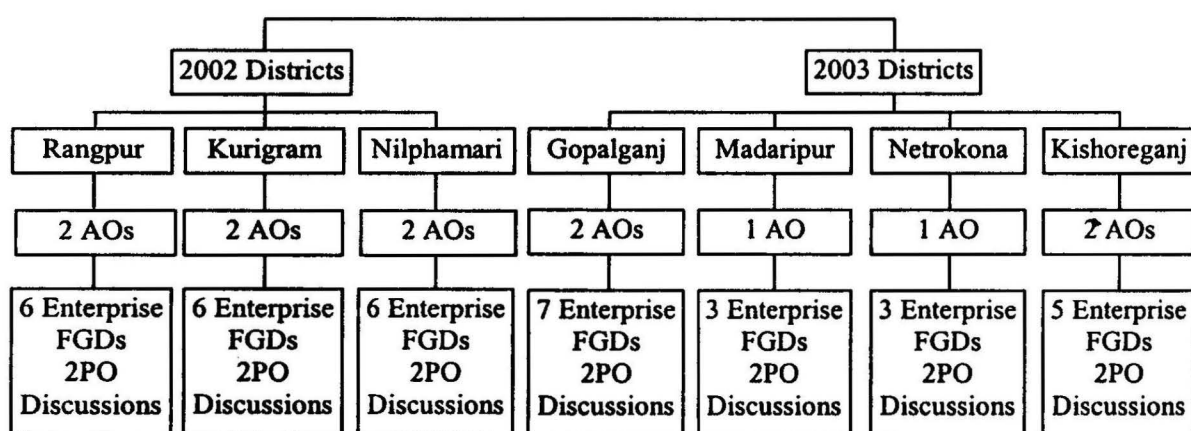


Table 1. Summary breakdown of focus group discussions by enterprise

| | Poultry | Cow | Goat | Vegetable | Horticulture | Non-farm |
|-----------------------|----------|----------|----------|-----------|--------------|----------|
| <i>2002 Districts</i> | | | | | | |
| Rangpur | 1 | 1 | 1 | 1 | 1 | 1 |
| Kurigram | 1 | 1 | 1 | 1 | 1 | 1 |
| Nilphamari | 1 | 1 | 1 | 1 | 1 | 1 |
| <i>2003 Districts</i> | | | | | | |
| Gopalganj | 2 | 2 | 1 | - | - | 2 |
| Madaripur | - | 1 | 1 | - | - | 1 |
| Netrokona | - | 1 | 1 | - | - | 1 |
| Kishoreganj | - | 1 | 1 | 2 | - | 1 |
| Total | 5 | 8 | 7 | 5 | 3 | 8 |

¹ Horticulture nursery was only available in 3 districts - Rangpur, Nilphamari and Kurigram - and was selected in all three districts.

² See Appendix A for detailed breakdown of field visits, and Appendix B for enterprise distribution in areas visited.

Section I

COMPARING TUP ENTERPRISES: A FRAMEWORK

In the pilot phase of the TUP programme, TUP members were offered a choice of six enterprises for which appropriate assets and inputs were transferred. The six selected enterprises were cage rearing of poultry, dairy cow rearing, goat rearing vegetable cultivation, horticulture nursery and non-farm enterprises³. Table 1.1 summarises the inputs transferred to TUP members for each enterprise offered through the SIP.

The six selected TUP enterprises vary along dimensions of profitability, risk, pattern of income, capital investment requirements, level of skill, time and labour intensity, and social problems faced, with implications for enterprise sustainability. This section outlines a framework for comparing TUP enterprise, identifying and describing a set of key criteria related to enterprise sustainability.

FRAMEWORK FOR COMPARING TUP ENTERPRISES

To sustain a given enterprise, TUP members must invest a combination of their time, labour and capital. Each enterprise is exposed to a set of risks both within and beyond the control of TUP members. Depending on the level of skill of a given TUP member and the occurrence of risks, she can expect to earn a pattern of income and level of profit from her investment. Based on the outcome of experience in consecutive cycles of investment in the enterprise, TUP members determine whether they are willing or able to reinvest in another cycle. Success in sustaining an enterprise is encouraged by a combination of favourable enterprise specific characteristics and an enabling environment consisting of positive institutional and social support.

In conducting FGDs with 2002-03 TUP members across the six selected enterprises, experiences were compared according to the following criteria.

Profitability

In evaluating profitability, we looked at three characteristics of the income earned by TUP members in each enterprise. Firstly, we considered the reported *net* income from each enterprise over one and two years (where applicable). An estimate of the costs was made from information gathered by TUP members, who were continuing a second un-subsidized cycle of operating their enterprise, and confirmed by PO reports of average investment/operating costs for each enterprise.

Profitability is ranked as follows:

- *Highly profitable*: Profit more than Tk. 6,000 per year
- *Medium profitability*: Profit between Tk. 3,000-6,000 per year
- *Low profitability*: Profit less than Tk. 3,000 per year

³ Non-farm enterprises include mobile vending, paddy processing, small shops, handicrafts, etc.; allocation of non-farm enterprises is based on previous experience of TUP with the given enterprise. For a detailed breakdown of the assets transferred for each enterprise see Appendix E.

In assessing profitability, both potential profitability, assuming members experience few problems in operating the enterprise, as well as expected profitability that factors in the occurrence of enterprise related risks is considered. The occurrence of problems and risks further leads to variability in profits between TUP members operating a given enterprise. Based on information gathered in discussions with TUP members and POs, we also considered observed variability of profitability.

Lastly we considered the time horizon of income generation whether there is a difference in profitability (potential) over the short, medium and long term. Short-term refers to 1 year, medium term refers to 2-3 years and long-term more than 3 years, in this case.

Risk

Enterprises were compared according to the nature and level of risk faced. TUP enterprises were found to face two types of risk – external and internal that directly affect their profitability. Enterprises faced other types of problems, which may influence sustainability, but not profitability directly. These are discussed further, separately.

External risks are outside the control of TUP members, and thus not dependent on a member's ability or behaviour in operating a given enterprise. Such risks include climatic conditions, local market conditions, quality of available inputs, etc. Internal risks, by contrast, are considered as factors related to TUP members' ability to manage their enterprises. Internal risks include lack of attention to feeding and caring for poultry/livestock and physical inability to perform required tasks. Classifications of risk were based on the number of risks (internal and external) associated with an enterprise, the likelihood of these risks occurring and the impact on profitability. Thus, high-risk enterprises would face many risks, which are commonly realized and significantly affect profitability. Low risk enterprises, on the other hand, would face few or mostly uncommon risks that have little impact on profits.

Patterns of income

Income patterns of each enterprise were classified based on both the flow of income normally earned – daily, weekly or irregular/intermittent as well as the level of earnings. Level of earnings – small, moderate or large in turn, were viewed according to the frequency at which they occur. For example, Tk. 50 per day would be classified as “high” daily income, whereas Tk 100 per week would be considered “low” weekly income.

Investment needs

The amount of cash investment (either from savings or other sources) needed on hand to re-finance a cycle of each enterprise's production was compared across enterprises. Investment needs are ranked as follows:

- *High investment:* More than Tk. 6,000
- *Moderate investment:* Tk. 2,000-6,000
- *Low investment:* Tk. 1,000-2,000
- *Very low investment:* Less than Tk. 1,000

Level of skill

Enterprises were compared on level of technical difficulty and thus skill required of TUP members to successfully operate the enterprise and realize optimal profits. Classifications of skill were based on complexity of managing the enterprise and the likelihood of lack of skill affecting profitability. In assessing skill requirements we relied primarily on PO reports of

interaction with TUP members while providing ongoing technical assistance and the frequency with which POs were needed to provide such support for each enterprise. Also factored in is the number and complexity of tasks associated with operating each enterprise.

Time and labour intensity

Enterprises were compared by the amount of TUP members' time taken up in running the enterprise and labour requirements. Time consuming enterprises, leave little time for other income generating activities by TUP members, which affects overall household profit due to higher opportunity costs. Thus in evaluating time, we considered not only the net time or hours per day needed to operate each enterprise, but also the scheduling of enterprise activities, which may constrain TUP members ability to participate in other income generating activities. Labour or manpower requirements were compared by whether helping hands were needed, or if the enterprise could be successfully managed by a single TUP member alone. Physical difficulty of labour was also noted for enterprises where it was a key factor in TUP members ability to sustain the enterprise.

Social externalities and other problems

Other problems particular to each enterprise were highlighted, in the case that they were common problems faced, that affect TUP members' interest or ability to continue with the enterprise successfully. These include social problems that may arise in operating a given enterprise such as affects on relations with neighbours or others. Problems that may constrain enterprise growth in future were also considered alongside sustainability concerns.

An overall attempt at assessing the sustainability of each enterprise is finally made, based on TUP members' reported experience and observed changes in each enterprise, and by incorporating the likely combined affect of each of the criteria listed above on enterprise sustainability. However, in order to make such an assessment it is first necessary to consider and evaluate the relative importance of each of these enterprise characteristics as a determinant of enterprise sustainability.

Profitability is invariably a key outcome to be considered. Profitability however, is determined by factoring in both inputs by TUP members (which in turn determine internal risks) and the occurrence of external risks, as illustrated in Figure 1.1. The following section focuses on profitability and risks and explores the relationship between these two important determinants of enterprise sustainability.

Table 1.1. Summary of TUP enterprise investment and subsidy costs in Tk.

| Inputs | Poultry cage rearing ⁴ | | Dairy cow rearing | | Goat rearing | | Vegetable cultivation | | Horticulture nursery | | Non-farm enterprises | |
|----------------------------|-----------------------------------|---------------------|-------------------|-------------------|--------------------|--------------------|-----------------------|--------------------|----------------------|------|----------------------|-------|
| | 2002 | 2003 | 2002 | 2003 | 2002 | 2003 | 2002 | 2003 | 2002 | 2003 | 2002 | 2003 |
| <i>Long-term assets</i> | | | | | | | | | | | | |
| Livestock | - | - | 2 cows (8,000) | 2 cows (8,000) | 5 goats (4,500) | 5 goats (4,500) | - | - | - | - | - | - |
| House extension/shed | 400 | 600 | 550 | 550 | 550 | 550 | - | - | - | - | - | - |
| Cages/hurricane (lighting) | 2,600 | 3,600 | - | - | - | - | - | - | - | - | - | - |
| Irrigation – peddle pump | - | - | - | - | - | - | 300 | - | 300 | - | - | - |
| Tools and equipment | - | - | - | - | - | - | 350 | - | 350 | - | 1,000 | 1,000 |
| <i>Short-term assets</i> | | | | | | | | | | | | |
| Farm assets | 36 birds (1,800) | 54 birds (2,700) | - | - | - | - | - | - | - | - | - | - |
| Land lease | - | - | - | - | - | - | 33 dec. (2,500) | 33 dec. (2,500) | 10 dec. (1,000) | - | - | - |
| Inventories/ raw materials | - | - | - | - | - | - | - | - | - | - | 2,500 ⁵ | 2,500 |
| <i>Operating inputs</i> | | | | | | | | | | | | |
| Feed | 16,500 (9,000) | 24,750 (12,000) | 500 (0) | 500 (0) | 1,000 (250) | 1,000 (250) | - | - | - | - | - | - |

(Contd.....)

⁴ Investment cost and subsidy for poultry cage rearing is complex. Where applicable, the calculations presented in the table show actual costs and costs subsidized by BRAC (in brackets, below) where these costs are different. To determine the total reinvestment capital required by TUP to operate a second cycle of poultry rearing includes initial cost of poultry birds and operating costs for 4 months, while birds remain unproductive. After this time, ongoing costs are expected to be covered by revenue from egg sales.

⁵ Non-farm enterprise inputs varied between Tk. 2,000 to 5,000, depending on the enterprise. The figure is an average.

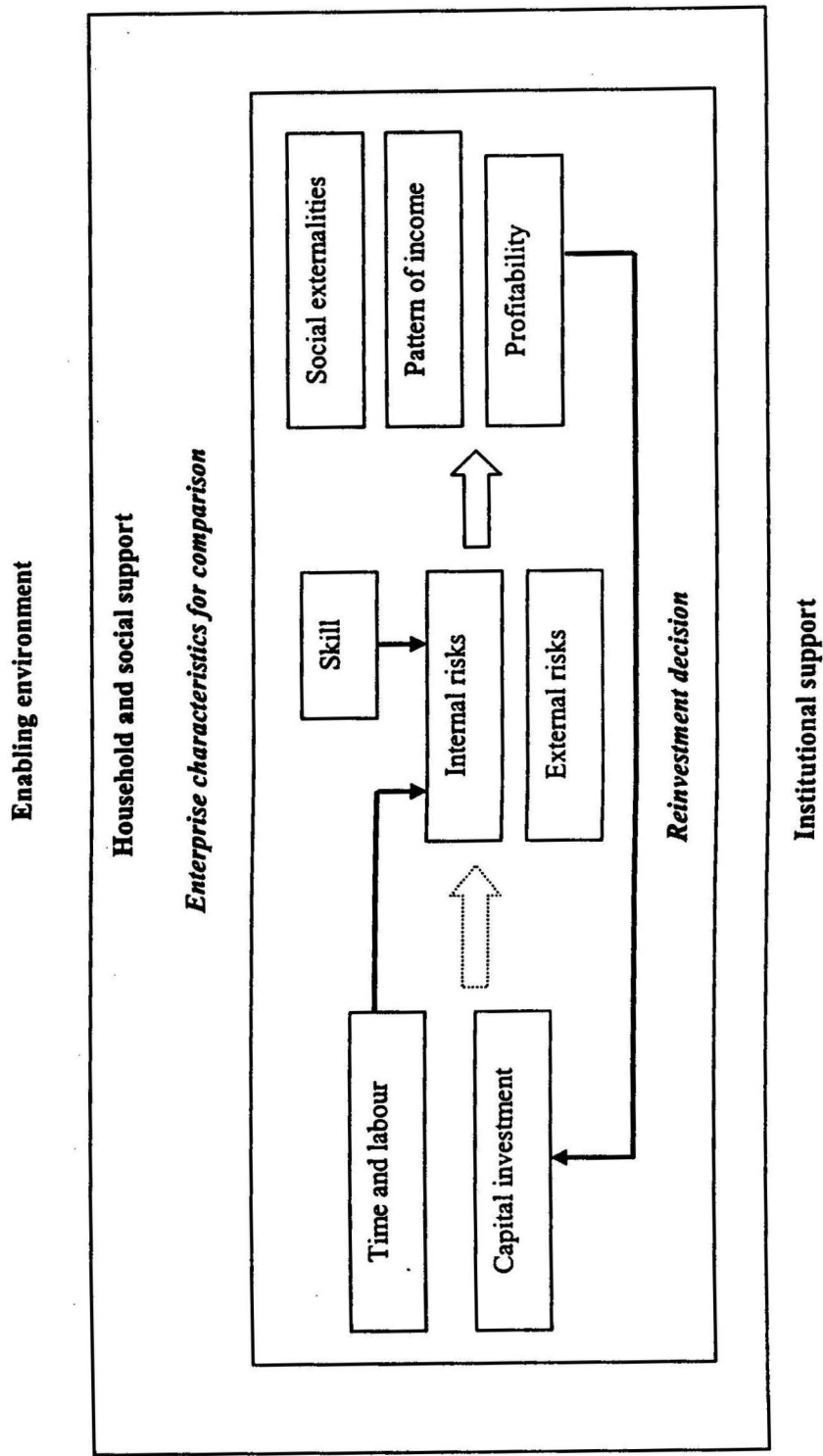
(Table 1.1 contd.....)

| | Poultry Cage Rearing | | Dairy Cow Rearing | | Goat Rearing | | Vegetable Cultivation | | Horticulture Nursery | | Non-Farm Enterprises | |
|--|----------------------|--------------|-------------------|----------|--------------|----------|--------------------------|--------------|--------------------------|--------------|----------------------|--------------|
| | 2002 | 2003 | 2002 | 2003 | 2002 | 2003 | 2002 | 2003 | 2002 | 2003 | 2002 | 2003 |
| Inputs | | | | | | | | | | | | |
| Medicines/ vaccines | 500 | 500 | 250 | 250 | 200 | 200 | - | - | - | - | - | - |
| | (250) | (250) | | | | | | | | | | |
| Land preparation/ fencing | - | - | - | - | - | - | 500 | 500 | 700 | 700 | - | - |
| Seeds | - | - | - | - | - | - | 1,200 | 1,200 | 1,200 | 1,200 | - | - |
| Fertilizer/ pesticide | - | - | - | - | - | - | 2,200 | 2,200 | 900 | 900 | - | - |
| Miscellaneous (fuel, transport, packaging, etc...) | 900 | 900 | - | - | - | - | 1,000 | 1,000 | 1,200 | 1,200 | - | - |
| | (350) | (350) | | | | | | | | | | |
| <i>Supporting assets</i> | | | | | | | | | | | | |
| 1 Small Cow + shed | - | - | - | - | - | - | 3,000 | 3,000 | 3,000 | 3,000 | - | 3,000 |
| 3 Goats + shed | 2,600 | - | - | - | - | - | - | - | - | - | - | - |
| Total costs | 25,300 | 33,050 | 9,300 | 9,300 | 6,250 | 6,250 | 11,150 | 11,150 | 8,650 | 8,650 | - | 6,500 |
| <i>Total subsidy in first cycle</i> | 17,000 | 19,500 | 8,800 | 8,800 | 5,500 | 5,500 | 11,150 | 11,150 | 8,650 | 8,650 | - | 6,500 |
| Total reinvestment costs for next cycle | 19,700 | 28,850 | 750 | 750 | 1,200 | 1,200 | 7,400 | 7,400 | 4,900 | 4,900 | - | 2,500 |
| Total investment capital required by TUP | 6,600 | 9,000 | 0 | 0 | 0 | 0 | 4,485⁶ | 4,485 | 4,000⁷ | 4,000 | - | 2,500 |

⁶ In the case of vegetable cultivation, all TUP were found to reduced their size of their land plot from 33 to 20 decimals in the second (unsubsidized) cycle, thereby reducing their operating costs proportionately.

⁷ In practice, TUP involved in horticulture nursery manage to save on seed and fertilizer costs when operating the business on their own.

Figure 1.1. Framework for comparing enterprise sustainability



Section II

ENTERPRISE ECONOMICS: FACTORING IN RISKS

An analysis of enterprise economics for proposed TUP enterprise offerings through the Special Investment Programme (SIP) component of the TUP project is provided in the TUP programme proposal, Vol. 2 (Appendix E). The enterprise economics analysis estimates the likely profitability of each enterprise, in terms of income available for consumption that each enterprise can be expected to generate over one year, net of reinvestment costs. During programme implementation, actual enterprise economics have been monitored and updated, revealing often significant differences between projected and actual profitability of the selected TUP enterprises. In carrying out enterprise based FGD's with TUP in the seven 2002-03 districts, we found that the original projections of enterprise profitability, represent what can be considered a "best case scenario", assuming that TUP members face few or no risks in running these enterprises that will lower profits if they occur. In reality, as identified briefly in the previous section, all TUP enterprises face several risks. The nature and extent of risk varies across enterprises, as does the frequency of problems occurring. This section aims to factor in enterprise related risks to the original enterprise economics and to quantify their effect on profitability of TUP enterprises.

ENTERPRISE-WISE ANALYSIS OF RISK

Table 2.1 summarizes the key problems or risks that affect profitability of each TUP enterprise and estimates the frequency of their occurrence. The problems and estimates of occurrence are based on information gathered from TUP members during FGDs, as well as from PO discussions. These problems/risks are classified into three types. External factors are beyond the control of TUP members, and thus cannot be influenced by the behaviour of TUP members. Internal factors, in contrast, are controlled by TUP members and refer to problems that stem from TUP members behaviour in running the enterprise. Both external and internal factors affect TUP enterprise profitability. General problems are a third category, which are problems that do not directly affect profitability of TUP enterprises, but may influence enterprise sustainability or growth. Problems that were mentioned by many TUP members, at most of the locations visited for FGDs were classified as high occurrence; problems mentioned by some members at multiple locations were classified as medium occurrence and those mentioned by only a few members, though at multiple locations were classified as low occurrence. Whether problems were specific to particular areas was also noted.

Table 2.1. Profile of enterprise related risks

| Enterprise | Key Problems | Frequency |
|--|---|----------------------|
| Poultry cage rearing | <i>External factors:</i> | |
| | • Lack of supply of inputs (pullet, feed) | Low-Area specific |
| | • Cold temperatures in winter, result in high feed consumption and low egg yield. | Medium-Area specific |
| | • High cost of feed | High |
| | • Low egg price (seasonal, bird flu crisis) | Low |
| | • Low quality supply of layer birds (second cycle), resulting in low egg yield | Medium-Area specific |
| | • High price of laying birds | Low-Area specific |
| | • Birds dying from disease, laying | Low |
| | <i>Internal factors:</i> | |
| | • Irregular laying by birds due to improper management by TUP, resulting in lower average egg yield | Medium |
| <i>General problems:</i> | | |
| Problems tolerating smell of poultry | Low | |
| Cow rearing | <i>External factors:</i> | |
| | • Scarcity of grass/straw (rainy season), contributing to low milk yield | High |
| | • Lack of grazing land | High |
| | • Low milk price | Medium-Area specific |
| | • Disease in cows | Low |
| | • Theft of cow | Low |
| | <i>Internal factors:</i> | |
| | • Inadequate feeding of cows by TUP, resulting in lower milk yield (e.g. TUP do not purchase sufficient concentrate to feed cows) | High |
| <i>General problems:</i> | | |
| • As cows multiply, TUP are constrained for space and may face social tensions in the case that they live in others houses. | Medium | |
| Goat rearing | <i>External factors:</i> | |
| | • Lack of grazing land, resulting in poorly fed goats | High |
| | • Vulnerability of goats to disease and cold | High |
| | <i>Internal factors:</i> | |
| • Destruction of others' property when goats are left unattended, resulting in social tensions and goats getting sent to "khowar". | Medium | |

[contd.....]

Table 2.1 [contd.....]

| Enterprise | Key Problems | Frequency |
|------------------------------|--|----------------------|
| | <ul style="list-style-type: none"> Lack of feeding (TUP don't purchase enough concentrate in rainy season and pregnancy), resulting in malnourished goats and kids, who are more likely to die or be sold at low price. | High |
| | <i>General problems:</i> | |
| | <ul style="list-style-type: none"> As goats multiply, TUP face problems in managing a larger herd and may be constrained for space. More goats may lead to increasing tensions with neighbours. | Medium |
| Vegetable cultivation | <i>External factors:</i> | |
| | <ul style="list-style-type: none"> Damage to profitable early variety crops from flooding and heavy rains | High-Area specific |
| | <ul style="list-style-type: none"> Over supply of seasonal vegetables, resulting in lower price, as TUP lack cold storage facilities | High |
| | <ul style="list-style-type: none"> Lack of local market for organic vegetables | Low-Area specific |
| | <ul style="list-style-type: none"> Land renewal problems (higher renewal prices, unwillingness of landlords to renew) | Medium-Area specific |
| | <ul style="list-style-type: none"> Scarcity of suitable land (leading to poor vegetable yields) | Medium-Area specific |
| | <i>Internal factors:</i> | |
| | <ul style="list-style-type: none"> Lack of physical ability and/or helping hands to grow vegetables successfully | Low |
| | <ul style="list-style-type: none"> Problems with applying fertilizer and pesticide properly | Low |
| Horticulture nursery | <i>External factors:</i> | |
| | <ul style="list-style-type: none"> Higher prices demanded at time of land renewal, which are forced to accept as they have plants growing on the land. | Medium |
| | <ul style="list-style-type: none"> Lack of local market for nursery plants | High-Area specific |
| | <ul style="list-style-type: none"> Over supply of plants by TUP, resulting in lower prices | Medium |
| | <i>Internal factors:</i> | |
| | Lack of physical ability and/or helping hands to cultivate plants successfully | Medium |
| Non-farm enterprises | <i>External factors:</i> | |
| | <ul style="list-style-type: none"> Low potential for TUP to purchase inputs, process products and sell products during rainy season (prolonged periods of heavy rain). | Medium |
| | <ul style="list-style-type: none"> Low demand for products during crisis season | High |
| | <i>Internal factors:</i> | |
| | <ul style="list-style-type: none"> Lack of business accounting skills, particularly in dealing with credit sales. | Medium |
| | <ul style="list-style-type: none"> Physical inability of TUP to spend long days working and travelling due to old age, poor health. | Low |

The observed occurrence of problems for each enterprise is next factored into the original enterprise economics analysis of costs and revenues to compile a revised set of costs and revenue projections, which consider the risks inherent to each enterprise. Estimates are based on information collected from TUP members about actual costs and revenue patterns experienced since receiving assets from BRAC. The numerical data is supplemented with qualitative data from the FGDs explaining the reasons for higher or lower costs and revenues than expected.

Applying the external and internal risks identified above to the respective enterprises, the costs and to a much larger extent – the revenues for each enterprise were found to be generally lower than what had been projected, and in some cases highly variable, depending on the “riskiness” of each enterprise. Based on information from TUP members participating in each enterprise, we found that original estimates of profitability overestimate actual profitability by 30 to 60%, depending on the enterprise. Table 2.2 provides a summary of the original profit estimates and our revised risk – adjusted estimates.⁸

Table 2.2. Risk adjusted estimates of enterprise profitability

| Enterprise | Average profit expected over one year | | |
|-----------------------|---------------------------------------|--------------------|------------------------|
| | Original proposal | Programme estimate | Risk adjusted estimate |
| Poultry cage rearing | 6,639 | 3,324 | 3,613 |
| Cow rearing | 11,469 | 6,738 | 6,375 |
| Goat rearing | 5,219 | 5,425 | 2,785 |
| Vegetable cultivation | 8,570 | 10,319 | 4,350 |
| Horticulture nursery | 8,150 | 17,427 | 5,325 |

The following analysis by enterprise provides a detailed breakdown of costs and revenues for each TUP enterprise, factoring in relevant risks that affect these variables, to calculate revised enterprise economics projecting average profitability.

POULTRY CAGE REARING

Estimated costs

According to the original enterprise economics analysis the main costs in poultry cage rearing are the initial cost of pullet and ongoing feed costs. The cost of pullet was originally estimated at Tk. 50 per bird. However, we found that many TUP members were actually paying Tk. 55-60 per bird. The original estimate of Tk. 11-12 per kg for feed was found to actually vary between Tk. 11-13 per kg. In the second cycle of poultry rearing in particular, many TUP members complained that they had to pay Tk. 13 per kg for feed. These costs further exclude transportation costs. Thus, Tk. 12-13 per kg as the cost of feed we believe is a more accurate estimation. Furthermore, the pattern of feeding differed from the original analysis, in practice. TUP members were found to feed birds less in both the growing and laying period than what was projected. Feed is very costly. Weekly feed expenditures are sometimes more than what TUP members may spend on feeding their own households. Thus, attempts to minimize feed costs are understandable. The projected feed requirement for 36 birds was 20 kg and 30 kg per week during the growing and laying period respectively. In practice TUP members were found on average to only feed birds 12 kg and 25 kg per week during the growing and laying periods respectively. The lower investment on feed is likely an important factor in the lower actual egg yields observed.

⁸ Non-farm enterprises are discussed separately at the end of this section. Due to the diversity of non farm enterprises taken up by STUP, it is difficult to generalize about profitability.

Estimated revenues

Revenues from cage rearing come from the sale of eggs while birds are laying, and at the end of the cycle, when birds are sold. The original estimates of egg revenues fail to consider variation in egg yield over the laying cycle or problems with irregular laying by birds. Irregular laying of eggs by poultry was a common problem experienced by TUP members, and may be explained by several reasons. The most common cause reported by POs was underfeeding of poultry birds, as previously mentioned, to reduce costs. A second cause is the complex management of poultry birds – which required regular feeding at fixed intervals, and proper lighting and temperature to lay eggs.

The original estimates assume that all birds will lay close to 1 egg per day throughout the laying period (estimated at 45 weeks). However, egg yield varies over the laying cycle, with birds laying on average 1 egg per day only during the peak period, which lasts on average 3-4 months. Egg yields are considerably lower and more variable over the rest of the laying period. Thus the estimate that each bird will lay 275 eggs per cycle (with the assumption that one bird will die) is high. We found that on average, each bird will lay approximately 250 eggs per year. This is due to irregular laying by some birds, and prolonged periods of reduced laying during cold weather and at the start and end of the laying period.

We further found that TUP lost on average 4-5 birds during the cycle. Finally, the original estimated sale price of culled birds at the end of the poultry cycle was also found to be high. TUP members we talked to were able to sell their birds at an average price of Tk. 70, rather than the projected Tk. 90 per bird.

Variations

The above estimates are averages. The occurrence of risks affecting profitability varied considerably among TUP members. Thus some TUP members were able to do better than the revised estimated average, however some performed worse. An important factor influencing profitability actually achieved an accounting for much of the variation in profitability between TUP members appears to be the quality of birds purchased in the second cycle.

Some TUP members chose to purchase birds that were already laying at a price of Tk. 150-160 per bird. This saved on the initial investment needed, by cutting down feed cost during the growing period, however, laying birds were found to be of poorer quality. Some TUP who purchased 2-month old pullet and reared them themselves also faced problems of poor quality birds. Some TUP reported several birds dying, which further reduced profitability.

Many TUP members also reported variation in egg price. Most of the year, egg price is around Tk. 12 per *hali*. However, during the summer season, and during crisis, like the recent bird flu scare, the price of eggs could be as low as Tk. 7-9 per *hali*. Such seasonal and shock variation in egg prices, however, did not appear to be a significant risk, in that low prices did not generally last long.

Finally, in some areas, particularly new 2003 TUP districts, there were problems in supplying pullet and feed to TUP members. Lack of local production for these inputs, resulted in unavailability and higher costs, which made it impossible for some TUP members to continue with the enterprise.

Table 2.3. Enterprise economics: cage rearing of poultry (36 birds)

| Original proposal | Y0 | Y1 | Programme estimates | Y0 | Y1 | Revised estimates (Ours) | Y0 | Y1 |
|----------------------------------|------------------|------------------|---------------------------------|------|------------------|------------------------------------|------|------------------|
| <i>Fixed costs</i> | | | <i>Fixed costs</i> | | | <i>Fixed costs</i> | | |
| Shed | | | Shed | 500 | | Shed | 400 | |
| Cages | | | Cages | 2400 | | Cages | 2600 | |
| Hurricane | | | Hurricane | 125 | | Hurricane | 125 | |
| <i>Operating costs</i> | | | <i>Operating costs</i> | | | <i>Operating costs</i> | | |
| Pullet (36 birds@50tk) | 1800 | 1800 | Pullet (36 birds@50tk) | | 1800 | Pullet (36 birds@55tk) | | 1980 |
| Feed (growing period) | 4320 | 4320 | Feed (growing period) | | 2784 | Feed (growing period) | | 2592 |
| (20kg/week@12tk/kg, 18 weeks) | | | (Total cost over 12 weeks) | | | (ave. 18kg/week@12tk/kg, 12 weeks) | | |
| Feed (laying period) | 15048 | 15048 | Feed (laying period) | | 17796 | Feed (laying period) | | 13800 |
| (30kg/week@11tk/kg, 46 weeks) | | | (28.5kg/week@12tk/kg, 52 weeks) | | | (25kg/week@12tk/kg, 46 weeks) | | |
| Med/vaccine | 152 | 152 | Med/vaccine | | 950 | Med/vaccine | | 152 |
| Kerosene | 0 | 0 | Kerosene | | 825 | Kerosene | | 825 |
| Transport | 0 | 0 | Transport | | 375 | Transport | | 375 |
| Total operating costs | 21320 | 21320 | Total operating costs | | 24530 | Total operating costs | | 19724 |
| <i>Revenues</i> | | | <i>Revenues</i> | | | <i>Revenues</i> | | |
| Sale of eggs | | 26469 | Sale of eggs | | 25185 | Sale of eggs | | 22000 |
| (35 birds, 275 eggs/bird@2.75tk) | | | (36 birds, 280 eggs/bird@2.5tk) | | | (32 birds, 250 eggs/bird@2.75tk) | | |
| Sale of birds(35 birds@90tk) | 3150 | 3150 | Sale of birds(35 birds@100tk) | | 3500 | Sale of birds(32 birds@70tk) | | 2240 |
| Total revenues | 29619 | 29619 | Total revenues | | 28285 | Total revenues | | 24240 |
| Total profits | 8299 | 8299 | Total profits | | 4155 | Total profits | | 4516 |
| Cycle | 15 months | 15 months | Cycle | | 15 months | Cycle | | 15 months |
| Total profit/cycle | 8299 | 8299 | Total profit/cycle | | 4155 | Total profit/cycle | | 4516 |
| Ave. profit/year | 6639 | 6639 | Ave. profit/year | | 3324 | Ave. profit/year | | 3613 |

COW REARING

Costs

The main cash costs of cow rearing are purchased feed and vaccination/medicine. The projected expenditure on concentrated feed, such as paddy husk, bran and salt was Tk. 1,000 per year. In practice, we found most TUP to rarely purchase feed, only in case of severe scarcity of straw and grass, due to flooding or heavy rain. Thus we would reduce the actual cash feed cost to Tk. 600, on average. Cash expenses for cow rearing are generally low. The main costs of cow rearing are in time and labour needed to collect feed. On average TUP members were found to spend 2 hours per day on this activity. TUP effort and care in feeding cows is a key determinant of their profitability.

Revenues

Dairy cows provide three main sources of revenue – sale of milk, sale of dung and sale of calves. With regard to milk sales, the original projections assume that each cow will produce 2 kg of milk per day for approximately 11 months over a two-year period. Both the quantity of milk production and duration of milk production were found to be overestimated. These estimates seem to be based on yields by “healthy” cows, and implicitly assume TUP cows will be well grazed/fed on a daily basis, and regularly fed concentrate in times of scarcity. In reality, we found milk yields to be considerably lower. Milk yields are not constant throughout the milking period, however on average, TUP cows give 1.25 kg of milk per day, over an average of 8 months.

Another source of revenue for TUP is from the sale of cow dung, which is not included in the original enterprise economics analysis, but has been included in updated programme estimates. We found that many TUP use dung to meet their own fuel needs, thereby saving on fuel costs. Some also manage to sell dung, either by forming sticks or by piling and selling to local farmers for fertilizer. TUP can make approximately Tk.300 per year through the sale of cow dung, from one cow.

Lastly, the original projections expected TUP members to be able to sell their calves at a price of Tk. 4,000 after one year. In our FGDs, most TUP planned to wait 2-3 years before selling calves, and only wanted to sell male calves. Even after this length of time, TUP and POs estimated that the calves could be sold for average Tk. 3,000 The reason for the low price of TUP members calves is again that TUP members cows are generally small and weaker than cows that are able to graze freely all day and are regularly fed concentrate.

Variations

There was some variation in milk production and sale price of calves among TUP members. Milk price also varied considerably, seasonally and between areas, ranging from Tk. 10-20 per kg. An average milk price of Tk.14 per kg, as estimated in the original proposal seems appropriate. There was also variation in when TUP members cows gave birth, with some TUP members cows having given birth 3-4 months after TUP members received the cow and others over one year later. Though the performance of individual TUP members varied, due to the low investment cost, all TUP members were able to sustain the cows and earn income from cow rearing. Enterprise economics of cow rearing is presented in Table 2.4.

Table 2.4. Enterprise economics: cow rearing

| Original proposal | Y0 | Y1 | Y2 | Programme estimate | Y0 | Y1 | Y2 | Revised estimate (Ours) | Y0 | Y1 | Y2 |
|---------------------------------------|-------------|--------------|----|--|-------------|--------------|-------------|---------------------------------|-------------|-------------|------------|
| <i>Fixed costs</i> | | | | | | | | | | | |
| 1 cow | 6000 | | | 2 cows | 8000 | | | 1 cow | 4000 | | |
| Shed | 0 | | | Shed | 500 | | | Shed | 500 | | |
| <i>Operating costs</i> | | | | | | | | | | | |
| Feed (concentrate) | 800 | 1000 | | Feed (concentrate) | 2220 | 2220 | 2220 | Feed (concentrate) | 250 | 250 | 250 |
| Medicine Vaccines, Vitamins | 100 | 100 | | Medicine Vaccines, Vitamins | 280 | 280 | 280 | Medicine Vaccines, Vitamins | 100 | 100 | 100 |
| Total operating costs | 900 | 1100 | | Total operating costs | 2500 | 2500 | 2500 | Total operating costs | 350 | 350 | 350 |
| <i>Revenues</i> | | | | | | | | | | | |
| Milk sales | 5670 | 3799 | | Milk sales | 2194 | 6581 | | Milk sales | 1181 | 3544 | |
| (2L/day, 270 days, cycl. adjust. 75%) | | | | (1.5L/day@15tk, 13 months) | | | | (1.25L/day@14tk, over 270 days) | | | |
| Dung | 0 | 0 | | Dung | 600 | 600 | | Dung | 300 | 300 | |
| Sale of calves | | 4000 | | Sale of cows | | 17000 | | Sale of calves (1) | | 1750 | |
| Total revenues | 5670 | 7799 | | Total revenues | 2794 | 24181 | | Total revenues | 1481 | 5594 | |
| Total profit | 4770 | 6699 | | Total profit (sale of cows) | 294 | 21681 | | Total profit | 1131 | 5244 | |
| | | | | Total profit (retaining 1 cow) | 294 | 13181 | | | | | |
| | | | | Total profit (retaining 2 cows) | 294 | 4681 | | | | | |
| Cycle | | 24 months | | Cycle | | 24 months | | Cycle | | 24 months | |
| Total profit/cycle | | 11469 | | Total profit/cycle** | | 13475 | | Total profit/cycle | | 6375 | |
| Total profit 2 cows | | 22938 | | | | | | Total profit 2 cows | | 12750 | |
| Ave. Profit/year | | 11469 | | Ave. Profit/year | | 6738 | | Ave. Profit/year | | 6375 | |

** Retaining 1 cow

GOAT REARING

Costs

As with cow rearing, goat rearing has few cash costs for TUP members to bear. The main cost is feeding goats, which takes more time and labour, than cash. Thus similar problems arise, in that the profitability of goat rearing, which depends on the health and size of goat kids for sale depends on TUP members care, effort and ability to maintain health, well-fed goats. The original projections of TUP members spending Tk.1500 on concentrate was higher than what we found in practice. TUP members only fed goats concentrate in times of extreme scarcity of grass, such as in flooding and heavy rain periods, and during gestation periods. On average, TUP members were found to spend approximately Tk.1000 of feed. The rest of the time members were found to spend 2-3 hours per day grazing and collecting feed for goats.

Revenues

Actual revenues from goat rearing were considerably lower than projected. Firstly, as noted above, the projections are based on the sale price of healthy goat kids, reared for 5-6 months. There also appears to be no provision for mortality of goat kids.

In practice we found that goat kids suffered several health problems. Due to underfeeding of mother goats, often, not enough milk was produced to provide for kids. Underfeeding was mostly due to lack of grazing land and/or time available for TUP members goats and reluctance to spend money on concentrate. We found most TUP members were able to feed goats enough to keep them alive, but not necessarily "healthy". As a result, goat kids were generally small and weak, and thus were not able to get as high a price as projected. Often TUP members sold goat kids prematurely, based on need, or in the case that kids fell ill. In such cases, the price received was further reduced. On average we found TUP members were able to sell their goats for Tk. 500-600 after 5-6 months of rearing, compared to the projected Tk. 700-800.

Goats are also highly vulnerable to disease and cold. We found high mortality rates among goat kids. On average we estimate that approximately 3 out of 10 kids born die.

Variations

The actual sale price of each goat varies based on many factors. Male kids and goats sold at Eid receive much higher prices - Tk. 800-1,000. Weak goats sold prematurely, were sold for an average of only Tk. 250. In our discussions, we found many TUP members time the sale of goats based on need, rather than planning to wait for higher prices. While the average sale price of goats is lower than predicted, we found high variation in sale price received among TUP members we visited. There was also considerable variation in mortality of goat kids among TUP members. Enterprise economics of goat rearing in presented in Table 2.5.

Table 2.5. Enterprise economics: goat rearing

| Original proposal | Y0 | Y1 | Y2 | Programme estimate | Y0 | Y1 | Y2 | Revised estimate (Ours) | Y0 | Y1 | Y2 |
|--|------|------------------|-------------|--|------|------------------|--------------|---|------|------------------|-------------|
| <i>Fixed costs</i> | | | | <i>Fixed costs</i> | | | | <i>Fixed costs</i> | | | |
| Goats | 3000 | | | Goats | 4000 | | | Goats | 4000 | | |
| Shed | 0 | | | Shed | 500 | | | Shed | 500 | | |
| <i>Operating costs</i> | | | | <i>Operating costs</i> | | | | <i>Operating costs</i> | | | |
| Feed (concentrate) | | 750 | 1500 | Feed (concentrate) | | 900 | 900 | Feed (concentrate) | | 600 | 800 |
| Medicine Vaccines, Vitamins | | 100 | 100 | Medicine Vaccines, Vitamins | | 675 | 675 | Medicine Vaccines, Vitamins | | 350 | 500 |
| Total operating costs | | 850 | 1600 | Total operating costs | | 1575 | 1575 | Total operating costs | | 950 | 1300 |
| <i>Revenues</i> | | | | <i>Revenues</i> | | | | <i>Revenues</i> | | | |
| Sale of kids (4 kids@ Tk. 700, 10 kids@800) | | 2800 | 8000 | Sale of kids (5 mothers, 15 kids, ave. Tk. 900) | | 4500 | 13500 | Sale of kids (3 kids@ Tk. 600, 7 kids@700) | | 1800 | 4900 |
| Total revenues | | 2800 | 8000 | Total revenues | | | 13500 | Total revenues | | 1800 | 4900 |
| Total profit* | | 1950 | 6400 | Total profit** | | 2925 | 11925 | Total profit** | | 850 | 3600 |
| Cycle | | 24 months | | Cycle | | 18 months | | Cycle | | 24 months | |
| Total profit/cycle | | | 8350 | Total profit/cycle | | | 10850 | Total profit/cycle | | | 4450 |
| Profit for 5 goats | | | 10438 | Profit for 5 goats | | | | Profit for 5 goats | | | 5563 |
| Ave. Profit/year | | | 5219 | Ave. Profit/year | | | 5425 | Ave. Profit/year | | | 2781 |

* Based on 4 goats

** Based on 5 goats

VEGETABLE CULTIVATION

Costs

The predicted costs for vegetable cultivation were similar to what we found to be actual costs, however, all TUP members we met reduced their land size in the second cycle from 33 to 20 decimals, thereby proportionately reducing their total investment cost.

Revenues

Actual cash revenues from sale of vegetables were found to be significantly lower than predicted. Average sales were reported to be Tk. 8,000-9,000 excluding petty sales from home, and consumption. There were several reported reasons for the low sales revenues. Flooding and heavy rains in *Ashar* and *Shrabon* damaged some early variety vegetables, which can earn a high price. Vegetables that were successfully harvested were seasonal and thus sold when markets were full of the same vegetables, depressing prices. In Pakundia, where organic farming was attempted, there lacked a local market for organic vegetables, resulting in low sales prices. While cash revenues were low, consumption of vegetables by TUP members' households appeared to be high-resulting in savings on household food expenditures and better quality food consumption for TUP members cultivating vegetables.

Variations

Vegetable sales and land lease cost varied by area visited. Thus TUP members in some areas were able to earn more than the average reported above, and others less. It was also found that individual TUP members income from vegetable cultivation varied depending on their physical ability and availability of helping hands. As vegetable cultivation can be physically demanding and labour intensive, it was less profitable for TUP members who lacked these prerequisites. Enterprise economics of vegetable cultivation is presented in Table 2.6.

HORTICULTURE NURSERY

Costs

Total costs for horticulture were found to be very similar to projected cost, however, the breakdown of costs differed somewhat. TUP members were found to spend on average more on land leases and less on seeds. Many TUP members complained of having to pay higher renewal prices for leased land, due to the fact that they had plants growing on the land at the time of renewal. As they could not easily shift land, their bargaining power with landowners was reduced. Some TUP members as a result reduced their land size to lower costs. On the other hand, most TUP members saved on seed costs in the second cycle by collecting local seeds.

Table 2.6. Enterprise economics: vegetable cultivation

| Original proposal | Y0 | Y1 | Y2 | Programme estimate | Y0 | Y1 | Revised estimate (Ours) | Y0 | Y1 |
|--|-----|--------------|--------------|---|-----------|--------------|---|-----------|--------------|
| <i>Fixed costs</i> | | | | | | | | | |
| Land lease (33 dec.) | | 1980 | 1980 | Land lease (33 dec.) | | 2850 | Land lease (33 dec.) | | 2850 |
| Irrigation | 200 | | | Irrigation | 1000 | | Irrigation | 300 | |
| Tools/equipment | 0 | | | Tools/equipment | 250 | | Tools/equipment | 350 | |
| Fencing | 0 | | | Fencing | 800 | | Fencing | 500 | |
| <i>Operating costs</i> | | | | | | | | | |
| Land preparation | | 600 | 600 | Land preparation | | 680 | Land preparation | | 600 |
| Labour | | 0 | 0 | Labour | | 1840 | Labour | | 500 |
| Seed | | 350 | 350 | Seed | | 2220 | Seed | | 800 |
| Fertilizer, pesticide | | 1500 | 1500 | Fertilizer, pesticide | | 3773 | Fertilizer, pesticide | | 1000 |
| Hormone | | 0 | 0 | Hormone | | 150 | Hormone | | 0 |
| Transport/spray machine hire | | 0 | 0 | Transport/spray machine hire | | 300 | Transport/spray machine hire | | 100 |
| Total costs | | 4430 | 4430 | Total costs | | 11813 | Total costs | | 5850 |
| <i>Revenues</i> | | | | | | | | | |
| Sale of vegetables (including consumption) (1000kg @ ave. 13tk/kg) | | 13000 | 13000 | Sale of vegetables (including consumption) (7490kg @ ave. 3tk/kg) | | 22132 | Sale of vegetables (3000kg @ ave. 3tk/kg) | | 9000 |
| Total revenues | | 13000 | 13000 | Total revenues | | 22132 | Consumption (400kg @ 3tk/kg) | | 1200 |
| | | | | | | | Total revenues | | 10200 |
| Total profit | | 8570 | 8570 | Total profit | | 10319 | Total profit | | 4350 |
| Cycle | | 24 months | 24 months | Cycle | 12 months | 12 months | Total cash profit | | 3150 |
| Total profit/cycle | | 17140 | 17140 | Total profit/cycle | 10319 | 10319 | Cycle | 12 months | 4350 |
| Ave. Profit/year | | 8570 | 8570 | Ave. Profit/year | 10319 | 10319 | Ave. Profit/year | | 4350 |

Revenues

Actual sales revenues earned by TUP members visited were significantly lower than projected revenues. There were several reasons for this disparity. Generally both volume of plants sold and sale price was lower than projected. TUP members were expected to be able to sell 7,000 plants in their second year of cultivation, at an average price of Tk. 2.5 each. We found that actual sales were closer to 5000-6000 plants at an average price of Tk. 1.75 each. The main problem in sales of nursery plants faced by TUP members was lack of local market to absorb the high volume of plants produced by groups of TUP members. Furthermore, in locations where TUP members faced competition from established nurseries, the lower quality TUP members' plants earned a lower price. Generally, the quality of plants grown varied, and though a small percentage of plants could be sold for more than Tk. 2 per piece, the majority were sold for between Tk. 1.5 and Tk. 2 per piece.

Variations

TUP members' ability to sell nursery plants, and thus profitability of the enterprise, varied by area and specific location of TUP members. Some areas, generally, were found to be less profitable due to lack of local market, available land quality and price, and concentration of TUP members at a given location to serve the market. At the individual level, some TUP members suffered low sales due to remote land location which was far from a main road, and thus difficult to reach by potential customers. TUP members who were older, physically unable or who lacked helping hands also earned below average profits from horticulture. Enterprise economics of horticulture nursery is presented in Table 2.7.

NON-FARM ENTERPRISES

Due to the diversity of non-farm enterprises, it is difficult to generalize about costs and revenues, and thus profitability. Profitability ranged from 80 to over Tk. 150 per week, or Tk. 4,000 to 8,000 per annum. Non-farm enterprises however, were mostly full-time business, leaving little time for other income generating activities. Overall non-farm enterprises were found to be low risk, with a few common factors affecting profitability. Firstly, sales of non-farm enterprises were generally low during periods of heavy rain and during the lean agriculture season. Secondly, many non-farm TUP members faced problems keeping track of credit sales, which made a small percentage of total sales, due to lack of business accounting skills. Finally, older TUP members are more limited in their physical ability to successfully run some non-farm enterprises, leading to lower income.

Table 2.7. Enterprise economics: horticulture nursery

| Original proposal | Y0 | Y1 | Y2 | Programme estimate | | Revised estimate (Ours) | |
|-------------------------------------|------|-------------|--------------|--------------------|--------------|--------------------------|-------------|
| | Y0 | Y1 | Y2 | Y0 | Y1 | Y0 | Y1 |
| <i>Fixed costs</i> | | | | | | | |
| Land lease | | 700 | 700 | | 1000 | | 1000 |
| Tools | 0 | | | 748 | | | |
| Irrigation | 2000 | | | 1000 | | 2000 | |
| Spray | 0 | | | 248 | | 0 | |
| Shed | 0 | | | 1000 | | 0 | |
| <i>Operating costs</i> | | | | | | | |
| Land preparation | | 700 | 700 | | 413 | | 700 |
| Fencing | | | 0 | | 800 | | |
| Seed | | 1200 | 1200 | | 5782 | | 800 |
| Fertilizer/pesticide | | 500 | 500 | | 2339 | | 800 |
| Seedling shed | | 0 | 0 | | 670 | | 0 |
| Mulching/poly bags | | 500 | 500 | | 2593 | | 1000 |
| Labour cost | | | | | 1225 | | 0 |
| Total costs | | 3600 | 3600 | | 14823 | | 4300 |
| <i>Revenues</i> | | | | | | | |
| Sale of plants | | 6000 | 17500 | | 32250 | | 9625 |
| (3000kg @ Tk. 2, 7000 @ Tk. 2.5 kg) | | | | | | (5500 plants @ Tk. 1.75) | |
| Total revenues | | 6000 | 17500 | | 32250 | | 9625 |
| Total profit | | 2400 | 13900 | | 17427 | | 5325 |
| Cycle | | 24 months | | 12 months | | 12 months | |
| Total profit/cycle | | | 16300 | | 17427 | | 5325 |
| Ave. Profit/year | | | 8150 | | 17427 | | 5325 |

*pooled estimate of 3 cropping patterns

Section III

RANKING TUP ENTERPRISES

At each Area Office visited, a ranking exercise was done with POs. POs were asked to rank enterprises offered to TUP members at their location based on a set of predetermined criteria. These criteria were profitability, stability of prices (inputs/outputs), risk, level of skill, assistance required from PO's and manpower needed. Enterprises were ranked on a scale of 1-5, at each AO, with one being most favourable in terms of desirability. Thus a rank of 1 on investment, would indicate the least investment needed enterprise. Similarly, a rank of 1 on risk would indicate the least risky enterprise.

In conducting this exercise, the purpose was to generate discussion and critical analysis of comparative TUP member performance across enterprises. Our aim was to gather qualitative rather than quantitative data, therefore the methodology used was not intended to provide data for precise quantitative analysis. What we can derive from the rankings though, are important trends in PO perceptions of TUP enterprises.

Table 3.1 presents a summary of enterprise rankings according to risk, skill, time required, manpower needed and capital investment required.⁹ These criteria were finally selected for determining overall rankings as they were clearly and homogenously defined by POs, with strongly correlated rankings across POs.¹⁰

Table 3.1. Overall ranking of TUP enterprises by Pos based on criteria

| Criteria | Poultry | Vegetable | Goat | Horticulture | Non-farm | Cow |
|--------------------|---------|-----------|------|--------------|----------|-----|
| Capital investment | 5 | 4 | 1 | 3 | 2 | 1 |
| Risk | 4 | 3 | 5 | 3 | 1 | 1 |
| Level of skill | 5 | 4 | 2 | 3 | 3 | 1 |
| Manpower | 3 | 5 | 4 | 4 | 1 | 2 |
| Time consuming | 4 | 4 | 3 | 1 | 5 | 2 |
| Average | 4.2 | 4 | 3 | 2.8 | 2.4 | 1.4 |
| Overall rank | 6 | 5 | 4 | 3 | 2 | 1 |

Cow rearing was consistently given the highest overall rank by POs, outranking other enterprises by a considerable margin in both 2002-03 districts. Similarly, poultry and vegetable cultivation were given lowest rank by most POs. Other enterprise rankings were mixed.

The discussion generated during the ranking exercise revealed much about PO opinions of which enterprises are most suitable for TUP members to succeed, and why.

PO's generally expressed a preference for low risk and low investment enterprises, for TUP members. For example many POs explained that enterprises like poultry, and vegetable cultivation to some extent, required large investment by TUP members in terms of time, labour and investment capital. Though there is potential for high returns, it is not certain, and depends

⁹ Capital investment was added to the rankings as an objective and measurable criteria of comparison, as it was identified as an important determinant of enterprise sustainability.

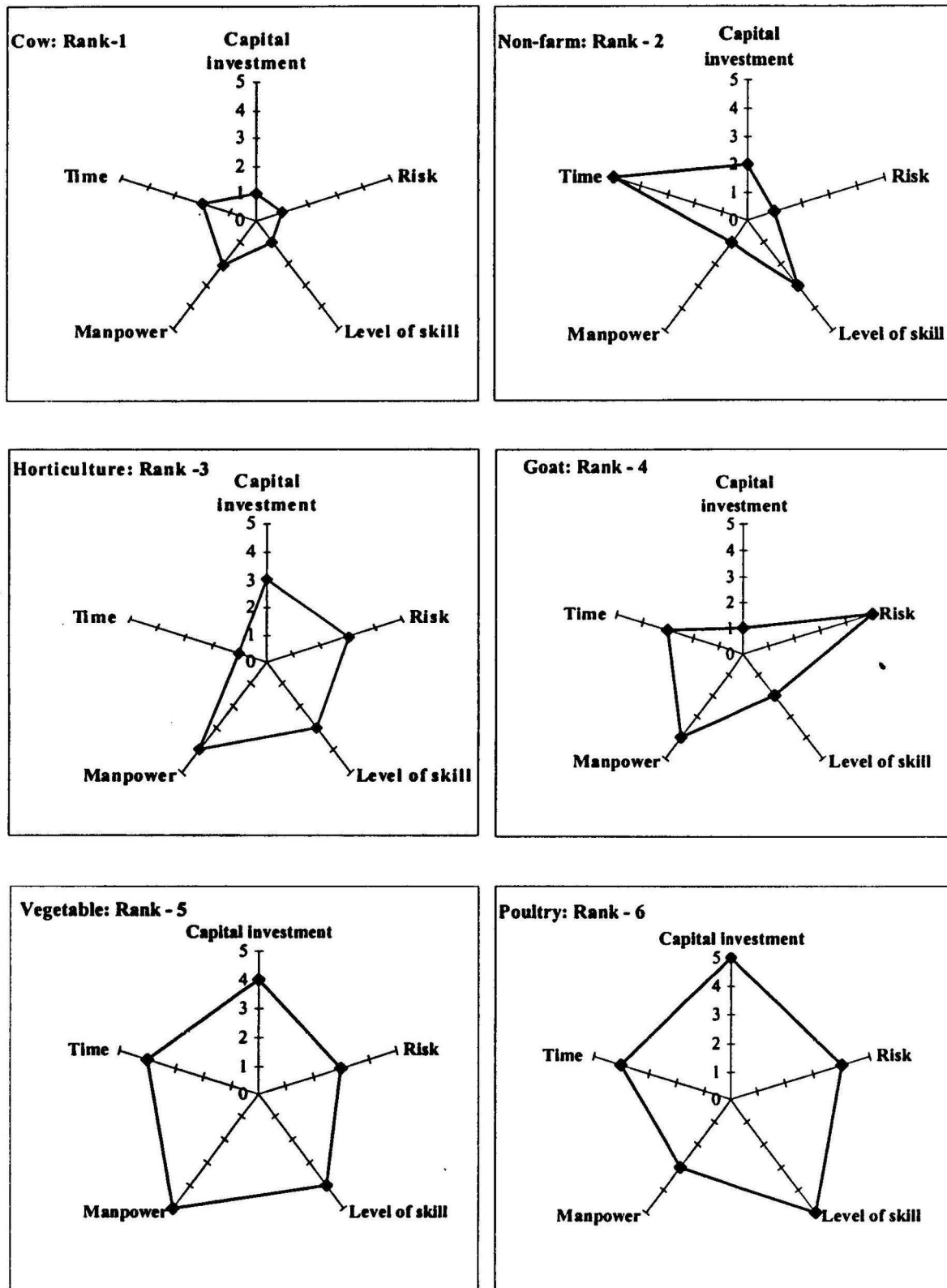
¹⁰ For a detailed breakdown of the PO rankings by area office see Annex D

on many factors, corresponding to what we identified as external and internal risks. Box 3.1 at the end of this section highlights some of the internal risks associated with poultry rearing. For example, if a TUP member continues to invest in a second cycle of poultry, she must expend Tk. 6,000-8,000 of her savings, and take constant care of her poultry birds, and maintain a regular feeding and cleaning schedule, leaving little time for other work. How much she will earn from poultry, depends on the quality of the birds, how well she takes care of the birds – manages proper feed, climate and lighting and prices of feed and eggs in the market. Many of the factors are beyond the control of the TUP member. On the other hand, assets like cows, require little investment in terms of capital, can be kept unsupervised at a TUP member's homestead, and can be maintained by 2-3 hours of daily work collecting feed and water. In most cases, as long as cows are fed properly and treated at time of illness, they will multiply and appreciate in value. Cows are generally not vulnerable to environmental factors and their value does not fluctuate significantly.

Essentially, according to POs the key factors that affect sustainability of TUP enterprises are the amount of cash a TUP member must invest and risk in the enterprise, the number of risks the enterprise faces, the level of skill required of TUP to manage the enterprise successfully and how much time and labour TUP members need to put into the enterprise.

Figure 3.1 compares TUP enterprises as ranked by PO's on each of these criteria. As the spider diagrams show, enterprises that are low risk and require low levels of capital investment, skill, time and manpower inputs are considered by POs to be most suitable for TUP members. Comparing the diagrams, as the level of these factors increase (and thus spread out from the centre), the likelihood of TUP members successfully sustaining these enterprises decreases. It is important to note, that sustainability is different from profitability, though these two measures of success are generally correlated. Though a given enterprise may be highly profitable, the more requirements and risks faced in operating the enterprise, the greater the chance that obstacles may arise in continuing with the enterprise.

Figure 3.1. Spider diagrams comparing TUP enterprises based on PO rankings



PO's also commented on the need for short-term vs. long-term profits. Most POs agreed that a mix of assets/IGAs was appropriate for TUP members, that provide both short-term regular income to meet living expenses and longer term investment opportunities to realize their future goals, such as land acquisition. Thus, it was suggested by some POs that rather than giving TUP members 2 cows or 5 goats or 54 poultry birds, they should be given a mix of assets for example, 3-4 indigenous poultry birds or ducks, which require little special care, 2 goats which is easier to manage than 5 and 1 cow. With such a mix, TUP can maintain these assets at little cost, they can take care of the goats and cow simultaneously, using the same amount of time labour, and have enough free time to engage in domestic and seasonal work, when available. In addition to diversifying TUP risk, providing such a mix of assets is thought to give TUP some "peace of mind", when they are involved in more risky enterprises.

In practice, we observed many TUP members actually pursuing this kind of asset diversification themselves as they progressed in the programme. For example, most goat rearers had scaled down their herd of goats, or planned to do so in the near future. They instead invested their proceeds into purchasing a cow and indigenous poultry. Similarly, many cow rearers had purchased indigenous poultry. All vegetable cultivators we met had reduced their land size to cut costs, and had purchased a small cow or goats, and indigenous poultry or ducks.

Box 3.1 Internal risks of poultry rearing

The risks associated with poultry rearing are numerous. Monitoring of internal risks is a difficult task for POs working with this enterprise, as one Poultry PO interviewed reported. Optimal egg yields depend on a range of factors, such as adequate sunlight and lighting, aeration, warmth and feeding. Poultry birds need 16 hours of light per day during the laying period. TUP members are given a *hurricane* lamp, fuelled by kerosene for this purpose. At one point the PO noted problems with low egg yields experienced by members, in spite regular monitoring of TUP members feeding and vaccination routines. Upon further investigation, he discovered that some TUP members were keeping the hurricane lights close to their living room, rather than inside the poultry shed! Lighting should be placed in a central position to ensure that all birds get adequate light. Many of the problems associated with poultry rearing are detected only after a lag period and remedial measures further take time restore production to optimal levels. For example, if birds are underfed, the effect on egg yields may be seen after 15 days. Once the problem is corrected, it can take up to 30 days for production levels to return to normal. During this time TUP members may lose significant revenue.

Section IV

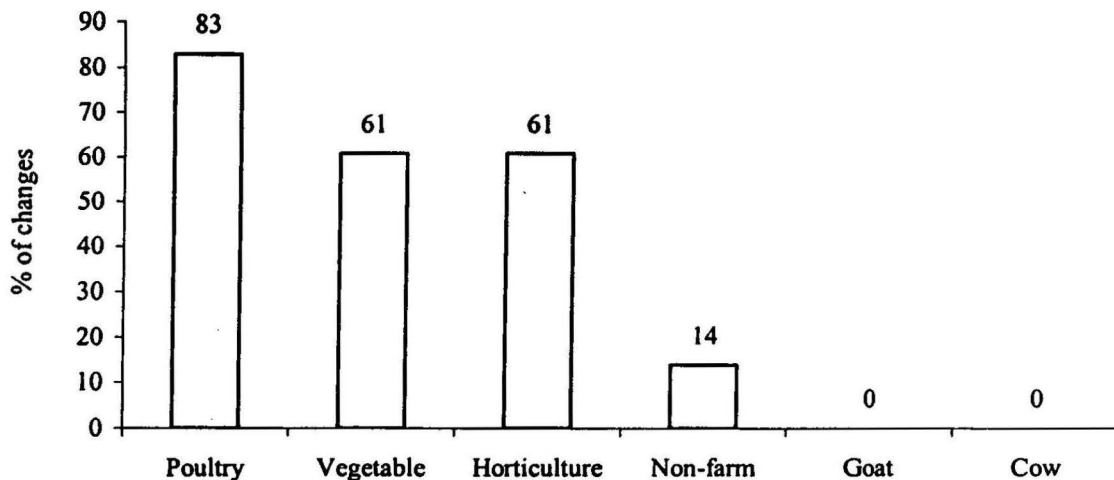
IDENTIFYING DETERMINANTS OF ENTERPRISE SUSTAINABILITY

A comprehensive view of the sustainability of enterprises of the TUP members needs to incorporate a range of factors, that in addition to enterprise specific characteristics, includes institutional and social support and household circumstances. The following section presents our findings of observed enterprise changes and considers what were found to be some key determinants of TUP enterprise sustainability. The identified determinants are based on findings from our own FGDs and PO discussions, and case study reports of failed TUP members. Determinants of sustainability are classified into three types: enterprise based determinants, individual, household and social based determinants and BRAC policy and PO based determinants. Enterprise based determinants refer to characteristics inherent to the enterprises offered that affect sustainability, namely investment and risk. Individual, household and social determinants refer to the behaviour and unique circumstances faced by individual TUP members that affect their ability to sustain a given enterprise. Finally, BRAC policy and PO based determinants refer to the implementation of the SIP and Enterprise Development component of the TUP programme and the role of POs in facilitating and developing TUP members' capacity to sustain the enterprises they select.

CHANGE OF ENTERPRISE

An observable indicator of enterprise sustainability is the rate of change experienced in each enterprise. The proportion of TUP members receiving assets in 2002, who discontinued in their original enterprise varied markedly between enterprises. Figure 4.1 below shows programme-wise enterprise changes observed among 2002-03 cycle TUP members. Enterprises that had the highest rate of change were poultry, vegetable and horticulture. The change rates match the enterprise preferences of POs, with cow rearing, goat rearing and non-farm enterprises appearing to be most sustainable by TUP members.

Figure 4.1. Enterprise-wise changes by 2002-03 TUP



While the rates of changes in the higher risk enterprises have been high, the majority of TUP members have divested from these enterprises and reinvested in new enterprises in most cases cow rearing using their own income generated from the enterprise, without additional financial support from BRAC. Thus change of enterprise does not reflect “failure” of TUP members. Similarly, observed continuation in enterprises such as goat rearing where high risks often lead to low profitability may often be explained by negligible investment costs in continuing with the enterprise, rather than “success” per se.

ENTERPRISE BASED DETERMINANTS OF SUSTAINABILITY

Investment and risk

Observed changes of enterprise occurred frequently among what we classify as the “short-term” group of assets, and specifically those that can be considered high-risk enterprises. Short-term assets refer to asset transfer that is largely made up of investment into operating expenses for a year or cycle. Much of the transferred value is used up over the cycle and new reinvestment is required. Thus more than 80% of poultry TUP members had changed enterprises and approximately 60% of TUP members had discontinued with vegetable and horticulture enterprises.

The reason for the high change rates seems to lie in the internal and external risks associated with these short-term enterprises, affecting their profitability. Internal risks refer to the TUP members’ ability to manage these enterprises, having no previous experience. These were not found to be too significant, particularly in the first cycle, due to training, financial support and ongoing assistance by BRAC. In the second cycle, however, TUP members had to bear these risks on their own, and in many cases were unwilling to do so i.e. continue in these enterprise without a BRAC subsidy or high level of support.

The second type of risk, refers to factors such as natural disaster, land availability, input availability and market availability and price fluctuations for outputs. These were also higher among the short-term enterprises, particularly the agriculture enterprises.

Table 4.1. Percentage of changes of enterprise by district – 2002-03 TUP

| District | Percentage of changes of enterprise | | | | | |
|---------------|-------------------------------------|-----------|--------------|----------|------|-----|
| | Poultry | Vegetable | Horticulture | Non-farm | Goat | Cow |
| Rangpur | 89 | 72 | 54 | 30 | 0 | 0 |
| Kurigram | 98 | 78 | 72 | 6 | 0 | 0 |
| Nilphamari | 100 | 36 | 32 | 47 | 0 | 0 |
| Kishoreganj | - | 45 | - | 33 | 0 | 0 |
| Netrakona | - | 100 | - | 2 | 0 | 0 |
| Madaripur | 1 | - | - | 3 | 0 | 0 |
| Gopalganj | 99 | - | - | 0 | 0 | 0 |
| Total changes | 83 | 61 | 61 | 14 | 0 | 0 |

Looking at the variation of enterprise-wise changes between districts shown in Table 4.1, it appears that the presence of significant external risks may be particularly important in determining enterprise sustainability. The percentage of TUP members who changed from horticulture and vegetable enterprises, for example varies significantly between districts. Based on our discussion with TUP members and POs, we found that cases of changes among poultry, vegetable and horticulture were often due to external factors, such as heavy rains and flooding, lack of proper input supply, and the local market for TUP members’ products.

On the other hand, no TUP members had given up cow rearing. Cows are basically fixed, long-term assets, requiring little management skill and experience to maintain, and involve little risk. They can be considered a form of long-term savings and investment for the poor.

Looking at the pattern of change among non-farm enterprises and goat rearing, which overall was low, seems to confirm that the combination of risk and investment requirement is an important determinant of enterprise sustainability. Capital investment requirement, most importantly, appears to be a key factor in determining enterprise sustainability.

In the case of non-farm enterprises, which can be considered “short-term” enterprises, most TUP members had previously been engaged in these enterprises thus they faced little internal risks in management of their enterprise. External risks in non-farm enterprises were also relatively low, as they are mainly trading type businesses, where TUP members add value themselves and market prices are fairly predictable and within their control. The main reasons reported by POs for switching from non-farm enterprises usually to cow rearing were old age and physical inability continue with these enterprises.

Goat rearing, appears to be a “medium-term” investment. It is similar to cow rearing, in that ongoing investment is mainly in the form of labour of TUP members – collecting leaves, and grazing goats. However, goats generate quicker returns, but also face higher risks. For example, goats are more vulnerable to weather and disease, and their profitability is contingent on proper care by TUP members. Variations in profitability among goat rearers in our FGDs were considerable. However, despite often low profitability, TUP members continued with this enterprise as the costs of continuing were not high, and the financial cost in particular negligible. It was observed though, that most TUP members involved in goat rearing, gradually planned to shift resources into cow rearing in the long-term, which was perceived to be more profitable, long-term.

Overall it appears that the likelihood of a particular enterprise being sustainable for TUP members over a long period of time depends to a large extent on both the cash investment required of TUP members and the level of risk involved. Enterprises that require both high investment and face a high level of risk, are most likely to be discontinued by TUP members. Conversely, those that are low risk and/or require low investment are most likely to be sustainable for a longer period of time. Thus we found cow rearing to be highly sustainable, due to the low risk and low investment required of TUP. Similarly, non-farm enterprises, though they required more cash investment by TUP members faced few risks and thus were more likely to be sustained, while goat rearing which faced many risks, but required little investment by TUP members was also more likely to be sustained.

It is important to note that in the above analysis, we are considering *enterprise* sustainability, not the sustainability of TUP members’ progress. Where TUP members changed enterprises, they did so, by divesting in the original enterprises and reinvesting the proceeds into new assets/enterprises. In most cases they were able to do this through their own earned income and savings from the programme, without financial assistance from BRAC.¹¹

Individual, household and social determinants of sustainability

TUP skills and attitude towards enterprise management

An identified area of weakness among TUP members was in basic money management and accounting skills. TUP members are given 3 days of enterprise specific training covering mainly technical management of their specific enterprise. However, all TUP will have to

¹¹ We noted some inconsistency in how STUP members who changed enterprises were treated. While most were made to use their own savings to purchase new assets (e.g. Cows), some STUP members were given cows by BRAC, in spite of having sufficient savings to purchase these on their own.

manage cash transactions related to their enterprise, and thus relevant training would be helpful. TUP members will have varying ability to manage money and accounts, based on their previous experience. It should be a priority though to make sure that all TUP members achieve a minimum understanding of adding/subtracting and keeping accounts of their sales and purchases. We often found this basic understanding lacking and TUP members deferred to POs to keep track of accounting and savings.

Lack of such accounting skills is likely a key barrier to TUP members taking over full decision making responsibility for ongoing management of their enterprises. If TUP members are unable to understand how much they are spending and how much they are earning through ongoing transactions, it is difficult to properly plan for future investment levels in their enterprise, and manage their savings accordingly, particularly for more complex and capital-intensive enterprises. In some cases, TUP members may have family members who can perform accounting functions, which may be helpful. However, in order to empower TUP members by giving them more control and understanding over financial decisions, it is probably better they develop essential business accounting skills for themselves.

Another observation made was that many TUP members did not fully appreciate the relationship between investment in terms of capital, time and labour and the profitability of their enterprises. This was particularly a problem in the case of enterprises that require low investment, such as cow and goat rearing. For example, many TUP members with livestock assets, simply fed their livestock to keep them alive. They did not fully appreciate that by giving more feed and keeping livestock very healthy, their cows would give more milk and their goats would produce healthy, normal size kids and enough milk to feed kids. Thus, we observed generally low milk yields from TUP members' cows, relative to what was predicted, and high frequency of death among goat kids. In the case of livestock there is a lag between the investment and return, making it more difficult for TUP members to relate the effect of their investment on eventual yields. Problems were found with poultry rearers, who fed less to birds after BRAC stopped providing feed, and thus faced problems of irregular laying of eggs. In the case of some non-farm enterprises, some TUP members lacked an understanding that if they invested in stocking or producing higher quality products, they could earn higher profit margins.

One PO commented that more time should also be spent making TUP members aware of the purpose of the programme and the importance of caring for assets prior to transferring them to TUP members. He noted that some TUP members perceived BRAC's asset support as "relief" and exhaust their assets, with the hope of receiving more from BRAC.

It should be qualified that this problem of TUP members not realizing optimal profits is not usually fully due to lack of understanding or TUP members' attitude towards their enterprise, but also lack of means. TUP members often face resource constraints and high opportunity costs in operating their enterprises. Thus while it may be useful to reinforce to TUP members the link between their investment effort and profits, and encourage better attitude and behaviour towards their enterprises, it should also be recognized that TUP enterprises may be less profitable in reality than planned, especially over the long term, when TUP members are left to their own devices.

Husband- wife relationship

Positive support from husbands can be a crucial factor in TUP women's success. Where TUP members have good relations with their husbands, husbands can assist with enterprise related activities and decision-making. They can be of valuable support in marketing and selling products and purchasing inputs, especially when travel far from the home is required.

On the other hand, if a husband is abusive or takes over the enterprise or earnings from the enterprise, the ability or interest of a TUP women to sustain an enterprise can be

compromised. Such problems with husbands were identified in some case studies of failed TUP women, and were found to be a main cause of these failures.

Husbands could at the outset be more formally integrated into the programme and encouraged to some extent to participate in all activities, such as choice of asset, training and enterprise related decisions, to draw on skills and experience they may have to offer and motivate their cooperation. Though there is the risk of a TUP women's husband taking over control of the enterprise and profits, this can equally happen without their formal participation. By attempting to engage husbands, however, communication channels and relationships are formed between BRAC staff and TUP women's husbands, which can facilitate positively influencing husbands' behaviour.

In cases where TUP women complain of husband's taking away profits from their enterprise, considering a change of enterprise may be helpful. Enterprises like poultry rearing, offer relatively large regular income that husbands can easily take, since they often take responsibility for selling eggs in the local market. Cows on the other hand, provide limited cash returns, and rather store value. It is more difficult for a husband to sell a cow, without facing a severe reaction from BRAC or others in the community. Similarly, profits from many non-farm enterprises tend to be largely controlled by TUP members themselves. Such enterprises may be more appropriate for TUP women whose troubled relations with their husbands can spill over to their enterprises.

Family members

For many enterprises, support from family members, as helping hands, is required for TUP members to manage their enterprise successfully. The number of physically able family members, particularly male members, should be taken into consideration in allocating assets. Enterprises such as vegetable cultivation and nursery in particular require additional help from family members and are difficult for a single TUP member to manage alone. Many other enterprises are likely to run more smoothly with the availability of helping hands. Consultation between TUP members and POs at the time of asset allocation to determine what level of help TUP members are likely to be able to access in terms of their ability and wiliness to help from household members would help in better allocating assets. Such supporting family members could also be included in informal 1-on-1 training for enterprises, to encourage their positive involvement.

Social support networks

Social support from neighbours and former employers available to TUP members can be another determinant of enterprise sustainability. TUP members often lack access to facilities such as tubewells or pasture land. From our field visits, for example, we found that particularly for goat rearing and to some extent cow rearing, TUP members could have benefited from access to others land for grazing their livestock. For most enterprises the encouragement of neighbours and their willingness to help in times of crisis, such as illness of a TUP member is a valuable form of support. GSCs may be able to play a role in building support among neighbours for TUP, by also engaging with them about the goals of the TUP programme, to encourage their support. Encouraging neighbours to keep an eye out for TUP members, can also be helpful towards solving other problems such as harassment of TUP or exploitation of TUP related to their enterprises.

One particularly valuable source of social support can be TUP members' former employers. We observed that most TUP members since joining the programme had lost support they used to get from former employers. Former employers sometimes resented TUP members' involvement with BRAC, and now viewed TUP members as BRAC's responsibility. In our discussion we found that in almost all cases, TUP members were not too concerned by this loss of support, but rather valued more their newfound independence. Particularly in the case of

former employers, TUP members told us that though they were previously getting a little in kind support from employers when needed, they were obligated to work on demand for employers. Now they are more confident in having the flexibility to choose when they work.

However, TUP can use all of the support they can get, and substituting BRAC support for previous employers' is a loss of one form of support for TUP members, even though it may be a net gain. Former employers can potentially have a positive role in TUP members' development. By maintaining good relations and gaining their support for the goals of the programme, TUP can build their support network in very useful ways. Many TUP members for example continue to work for their former employers in some capacity. We met some cow rearers who had maintained good relations with their former employers, who subsequently allowed them time to go back to their homes to take care of their cows. Similarly, some goat rearers told us that their former employers allowed them to bring their goats to their homestead, tying them and allowing them to graze nearby grass/leaves, while the TUP members worked.

PO's could encourage positive participation by TUP employers, by communicating the TUP programme goals and helping TUP to negotiate assistance. When former employers and neighbours' positive involvement is not actively sought, they may end up playing a negative role, for example, by pressuring TUP members into actions that may not be in their best interest.

Social problems

Social problems such as domestic violence and gambling, which were discussed previously, and dowry are a further constraint to some TUP members' development and enterprise sustainability. Though TUP members are taught against making dowry payments by BRAC, in reality it remains very difficult for TUP to escape the custom of dowry. TUP members are likely to face pressure from potential bridegrooms to pay dowry to marry daughters. In some cases TUP members may want to draw on their savings or sell off assets to pay dowry, which jeopardizes their long-term performance. Dowry, like many social problems, is a difficult issue to solve and requires widespread change in attitudes.

BRAC policy and PO based determinants of sustainability

Asset transfer mix

Asset transfer policy was different between 2002 and 2003 districts. 2002 TUP members who took "short-term" assets – poultry, vegetable, horticulture and non-farm were offered supporting "longer term" assets, either a cow or goats, alongside their main asset. 2002 TUP also all received the same stipend amount, regardless of enterprise.

In 2003 however, only the primary asset was given to TUP members, and the stipend was ostensibly based on the pattern of investment and income generated by each specific enterprise.

According to the TUP Programme Coordinator, the change noted between 2002 and 2003 is a result of experimentation with different asset mixes during the pilot phase and an attempt to reduce the costs of the transfer component of the programme. The change in stipend policy was based on recommendations offered by a monitoring review of the TUP programme.

An overriding concern in determining asset transfer policy, has been keeping within budgetary constraints. The above noted changes in asset transfer and stipend combined seem to have resulted in an overall lower average transfer value in 2003, but greater variation between

the transfer amount for each enterprise, which was more evenly distributed among 2002 enterprises.¹²

Based on discussions with POs and TUP members, though, it appears that providing a mix of long and short-term assets, as was done in 2002, is a better policy for TUP members' long-term performance. As noted earlier, this kind of asset diversification was in fact seen to be practiced by TUP members themselves in both 2002-03 districts, as they earned and saved from their various enterprises.

As discussed earlier, a mix of short and long-term assets/enterprises allows TUP members to meet their daily living expenses and at the same time invest towards achieving their future goals, most important of which is purchase of land for homestead or agriculture. An asset mix also allows TUP members to meet unanticipated expenses better, by selling off and repurchasing assets as needed. Supporting assets that are low risk and require little time or care by TUP members, such as cows or indigenous poultry, are particularly useful, as they allow time for other income generating activities and afford TUP members some "peace of mind", when they are involved in more risky enterprises.

The optimal asset mix for each TUP members will vary, depending on each TUP members' unique circumstances. Some TUP members will be in a better position to sustain and manage short-term, high-risk enterprises than others. Likewise, each TUP members may have different needs for short-term vs. long-term income. Learning gather to date on selecting and targeting of assets for transfer to TUP members is discussed in more detail in the following section.

Choice of enterprise

According to TUP programme policy, allocation of enterprise is meant to be a consultative process between TUP members and POs, to determine the most suitable enterprise for each TUP member, based on location and geography, and TUP members' unique circumstances, preferences and previous experience.¹³ In practice, however, it appears that the "choosing" of enterprises by TUP members, is heavily influenced by BRAC POs, and is ostensibly based on their assessment of the location of TUP members, age and experience and other household characteristics. Thus the "choice" of enterprise, in practice has been more or less an "allocation" of enterprise, during the pilot years of the programme. Furthermore, it is not clear that the allocation of assets by POs is a systemized process that is, the criteria on which allocations are based, appear to be variable across AOs, at PO's discretion.

There are a few reasons why the asset allocation decision in practice is mainly in the hands of POs. Firstly, due to the experimental nature of the pilot years of the TUP programme, there was a deliberate effort to allocate a targeted number (usually 50) of each enterprise offered in a given area. Thus if cow rearing, vegetable cultivation and poultry rearing were offered to members at a given AO, a target of 50 of each enterprise would be adhered to in allocating assets. According to POs, when allocating assets, meeting targets was prioritised in the initial year of the programme.

From our discussions with TUP members, we also observed a general passiveness on the part of many, with regard to selection of enterprises. This was most likely due to lack of understanding based on experience of what many of the enterprises involve, in terms of investment in capital, time and labour needed. With the exception on non-farm TUP members, most had little or no previous experience with their chosen enterprise. Many TUP members are also happy to take anything BRAC gives them. So, at the initial allocation stage, many TUP

¹² This observation is based on data gathered from AO's visited.

¹³ See Box 5.2 in the next section on *Programme Learning* for a detailed description of the asset allocation process.

members are largely dependent on PO judgment, even if they are given the opportunity to choose their asset.

Having said that, based on several cases studies and our field observations, more consultation with TUP members prior to allocating assets, to make it a more participatory process, would be helpful as the programme expands. Household member support, TUP member health, living conditions and other obligations are all important factors that contribute to the success of TUP enterprises. The enterprises offered differ in the amount of labour, time and physical work involved for example, factors that affect their profitability and sustainability. Only TUP members have this detailed knowledge of their own circumstances, which should be factored into the asset allocation decision. This applies equally to the choice of supporting assets, which in some cases were also misallocated. For example, when we inquired about why TUP members in horticulture and vegetable cultivation had discontinued with these enterprises, in several cases, the TUP members were too old and lacked helping hands to manage the hard physical work these enterprises require. Had TUP members been previously consulted and informed of the physical demands of these enterprises, they may have “chosen” different assets, more suitable to their ability.

When POs do communicate with TUP members regarding assets, it appears to be mainly in the form of “salesmanship” of the assets, focusing on the fact that BRAC will provide all necessary inputs and support, and emphasizing the potential profitability of the asset, without an equal attention to explaining the investment, labour, time and other required inputs for success. Thus to facilitate TUP members’ participation and input in *choosing* assets, a more comprehensive description of each asset would be useful towards better asset allocation. It was noted that in some cases more consultation occurred than in others. Presently, it seems that the level and quality of consultation with TUP members in choosing assets is largely at PO discretion.

Learning from experience

In some cases, problems specific to TUP member characteristics may only be identified after the asset has been allocated, based on experience. When TUP members face serious problems with a given enterprise, that are unlikely to be surmounted, there should be flexibility to allow TUP members to switch into a more suitable and sustainable enterprise early on, while they are still receiving intensive support from BRAC. In practice, we found that most enterprise changes took place at the end of an enterprise cycle, which can slow down TUP members’ development and progress in the programme.

In other cases, TUP members may simply find that they lack interest in continuing with a given enterprise, after gaining some experience with it. The initial enterprise choice and early experience should be viewed as a learning period where TUP members gain practical knowledge of their enterprises and thus leave room for some flexibility in allowing changes throughout the first cycle. It is important to note, that such problems do not appear to be very common, but nonetheless could be better accommodated.

TUP control over decision-making

Based on some case studies of “failed” TUP members, there was an observed pattern of lack of TUP members control and participation in enterprise related decisions. Across the range of enterprises, PO’s made many of the enterprise related decisions. Generally, POs seem to have the responsibility over most of the decisions relating to purchase and sale of enterprise related inputs and assets during the cycle of enterprise support. While this may be necessary in the initial stages of the programme, where TUP members lack experience, these responsibilities should be transferred as much and as early as possible, ensuring that TUP members acquire the knowledge and skills to sustain their enterprises and/or manage decision making over assets in

the long run. Again, greater consultation and communication between TUP members and POs from the very beginning with respect to enterprise related decision making and encouragement of TUP member participation at each stage of decision making would facilitate transfer of knowledge and prepare TUP members to take over full ownership of their enterprises and related responsibilities earlier on.

Role of Programme Organizer (PO)

POs play an important role in developing TUP members' ability to sustain their enterprises. Too much or too little involvement of PO's can compromise TUP member's ability to sustain their enterprises. For the most part, we observed a strong and genuine commitment on the part of TUP POs to the development of TUP members. POs took an active interest in the lives and problems faced by TUP members they work with. In some cases however and often not intentionally the nature of involvement of POs and their level of support to TUP members may restrict or retard building capacity of TUP members to sustain their enterprises in the long run.

As noted in the previous discussion, when PO's continue to dominate enterprise and savings related decision-making throughout the support cycle and often beyond this vital knowledge and experience can stay with the PO and may not be passed on to the TUP member. Equally or even more important, PO decisions may be based on different criteria than TUP members consider such as their own job security and the amount of effort they need to put into helping the TUP member, and different preferences, such as their own aversion to risk and value for long term over short term gains. This is a particular concern, at the time of deciding whether or not a TUP member should continue with their original enterprise. POs criteria in judging whether an enterprise is suitable for a given TUP member are likely to be more limited than the factors considered by the member herself. TUP members understand better the demands of the enterprise on their family life, social relations, health, etc. When POs exercise considerable control over TUP members' savings and thus investment decisions, and when PO priorities and interests conflict with the TUP members, POs are likely to prevail – and this can compromise the ability of TUP members to sustain their enterprises.

POs in practice are likely to have considerable influence over TUP members' decisions also because many TUP members look up to POs and value their judgment and advise. However, TUP members themselves are probably the best judges of their own ability to manage their assets. PO's ought to be encouraging participation of TUP members, and when they assert their preferences and judgment they should be given priority.

In some cases, POs may exercise excessive control due to bias against "weaker" TUP members, and a general lack of faith in their decision making ability. For example, some TUP members may be regarded as "foolish" by POs and others, and thus deliberately ignored in making decisions. Such attitudes by POs further encourage a communication gap between themselves and these TUP members.

Lack of attention by POs, can also have a negative effect on TUP enterprise sustainability. In some cases, POs may neglect TUP members located in remote areas, or fail to respond in time when TUP members face problems with their enterprise. Such neglect will likely have a different impact depending on the TUP member's enterprise. For example, poultry and goats can be very sensitive and vulnerable to disease or mismanagement by TUP members, requiring a rapid response from POs. Problems are also likely to arise more frequently in these enterprises. On the other hand, cows face relatively few problems. Similarly, agriculture based activities can afford more time between the occurrence of a problem and its solution.

The question of ongoing support from POs after TUP members have completed a full cycle (18 months) is another issue that can affect enterprise sustainability. In many cases, TUP members experience a sudden drop in the intensity of PO support they receive. As the programme is expanding, some POs are transferred to new areas, while others take over responsibility for their existing TUP members. POs, however, have built relationships with TUP members and have gained extensive knowledge of local market conditions for the TUP members' enterprises, and day-to-day problems faced by them. Some TUP members reported that the level of commitment of new POs was not the same. They felt that they still needed some assistance from POs, which they found was not forthcoming.

Section V

PROGRAMME LEARNING

As the CFPR-TUP programme scales up to cover a targeted 70,000 TUP by 2006, considerable learning gained from the pilot phase is being applied in implementing SIP. Learning is evident in selection and targeting of suitable assets for transfer to TUP members and changes the mix of assets and level of stipend support given to TUP members in the initial year of operating the new enterprises. This final section documents key learning from the pilot phase of the TUP programme, 2002-03, related to the SIP.¹⁵ Programme learning is classified into two types: policy learning towards improving implementation of SIP, which can be observed through centrally coordinated changes in asset transfer and stipend policy; and field level learning by POs in allocating assets and delivering technical assistance to individual TUP members based on experience gained over the two years.

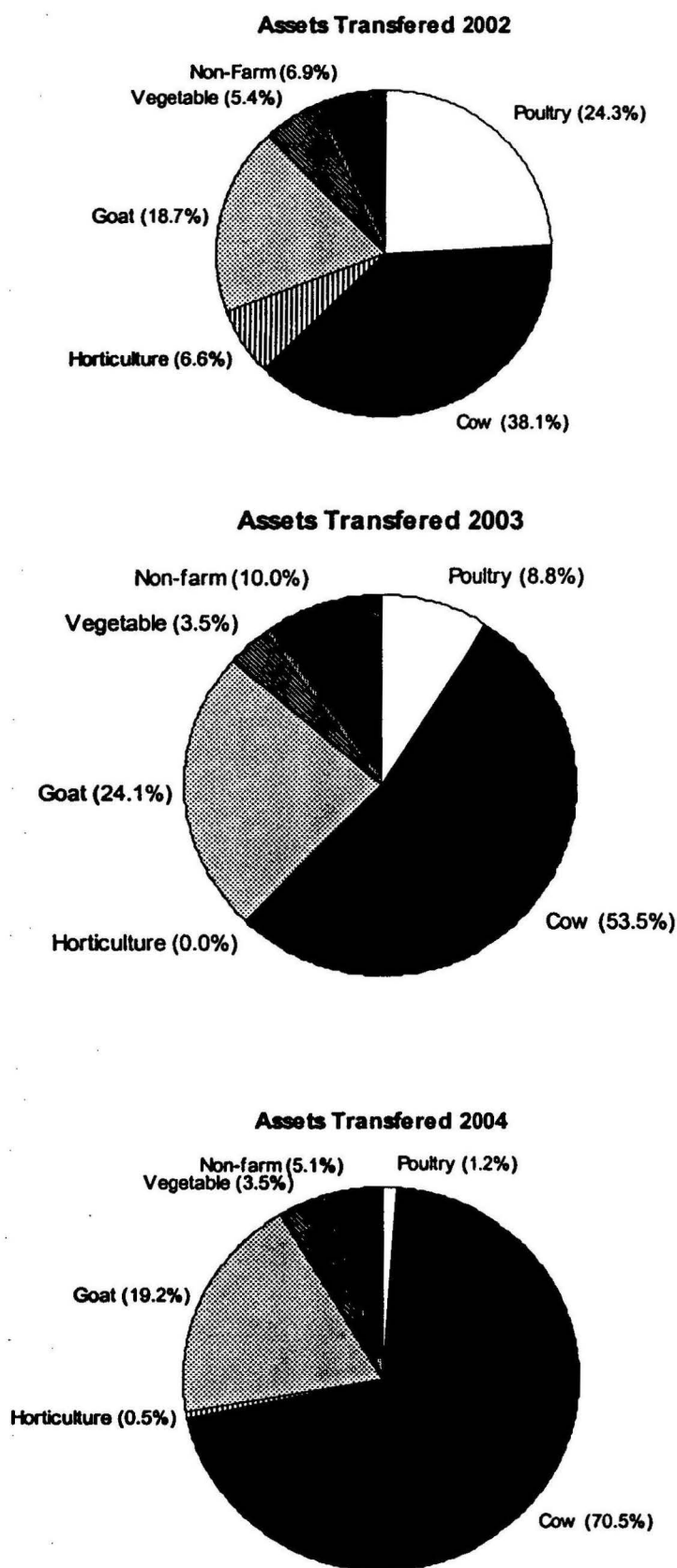
POLICY LEARNING IN IMPLEMENTING SIP

Asset transfer: narrower targeting of high risk enterprises

Based on experience in the pilot cycle of the TUP programme, even greater attention has been paid to external and internal risks in allocating poultry, vegetable and horticulture enterprises. The proportion of these enterprises as a share of total assets transferred has reduced. Poultry, vegetable and nursery enterprises have been more narrowly targeted based on area specific characteristics, including local demand for these enterprises and geographic and climatic suitability. Closer attention has also been paid to individual TUP members' characteristics to assess suitability for these enterprises. Figure 5.1 shows the overall change in the breakdown of assets transferred between 2002 and 2004.

¹⁵ The information detailed in this section is based on feedback and discussions with TUP Programme Coordinator Ms. Rabeya Yesmin and Programme Manager Mr. Saleh Ahmed, interviews with POs at selected 2002 area offices and an analysis of TUP programme data.

Figure 5.1. Asset distribution 2002, 2003 and 2004



The most significant change that can be seen is the reduction in the transfer of poultry enterprise and corresponding increases in the share of cow and goat enterprise transfer. Poultry has been demonstrated to be a high-risk enterprise for TUP members, with the highest rates of change observed among TUP members selected in 2002.

Targeting of areas for vegetable and nursery enterprises, has also been further narrowed based on availability of high land, with soil suitable for vegetable and plant crop cultivation (non-sandy). Vegetable cultivation has been limited to three out of thirteen 2004 TUP areas. In the case of nursery enterprise, the number of TUP members participating in nursery enterprises in any given area has been purposefully limited to avert the problem of oversupply in the local market of TUP members' plants, which was previously found to reduce the profitability of the enterprise. Table 5.1 shows a detailed breakdown of asset transfer by enterprise and area in 2004, highlighting these changes in targeting allocation of high-risk enterprises.

In both agriculture based enterprises, vegetable cultivation and horticulture nursery, a significant problem that emerged was land lease renewal. Paradoxically, many TUP who were successful at cultivating vegetables and plants profitably faced problems when wanting to renew land lease for another year. Landlords who had leased the land to TUP members in their first cycle, upon witnessing the profitability of their enterprises, often chose to cultivate it for themselves or demanded higher land lease prices. To avoid this problem in future, BRAC has chosen to purchase land directly and allow TUP members to cultivate it, with the intention that after several years of demonstrated ability to successfully sustain agriculture enterprise, the land will be transferred to the TUP members. This change in policy was strongly welcomed by POs interviewed in areas offering agriculture enterprises.

Table 5.1. Breakdown of asset distribution in 2004 TUP areas

| Area | Poultry | Cow | Goat | Vegetable | Nursery | Non-farm |
|----------------|---------|-------|-------|-----------|---------|----------|
| Rangpur | 50 | 833 | 213 | - | - | 59 |
| Nilphamari | 10 | 1036 | 170 | - | - | 39 |
| Kurigram | 20 | 957 | - | - | - | 38 |
| Kishoreganj | 10 | 551 | 127 | - | - | 12 |
| Netrakona | 7 | 481 | 363 | - | - | 74 |
| Madaripur | - | - | - | - | - | - |
| Gopalganj | - | 142 | 78 | - | 4 | 11 |
| Panchagarh | - | 428 | 119 | 151 | 6 | 51 |
| Thakurgaon | - | 371 | 118 | 107 | 12 | 37 |
| Lalmonirhat | - | 775 | 226 | 91 | 11 | 67 |
| Gaibandha | 10 | 618 | 193 | - | 6 | 78 |
| Sirajganj | 10 | 491 | 155 | - | 4 | 30 |
| Rajbari | - | 370 | 154 | - | 10 | 16 |
| Total (10,000) | 117 | 7,053 | 1,916 | 349 | 53 | 512 |

Locally determined asset transfer distribution

In the initial year of the programme, asset distribution targets for each area office were determined centrally, based on geographic targeting of suitable areas for each enterprise, and attempting to ensure an even distribution of all enterprises offered at a given area office. For example, an area office where vegetable cultivation, cow rearing and poultry rearing were selected as suitable for the area, a target distribution of 50 TUP in each enterprise was set for that office. Such a distribution facilitated monitoring and delivery of intensive technical support to each enterprise, by maintaining a support ratio of 50 TUP per Technical PO trained

in a given enterprise.¹⁶ Allocation of assets to TUP within these targets was based on the choice of TUP and PO's judgment of the suitability of a given enterprise for a given TUP member.

After two years, it is increasingly clear however, that decentralizing the asset distribution to the area office level is more appropriate for good targeting of assets to TUP members. Area offices are now only directed on the selection of suitable enterprises to offer TUP in a particular area from HO. These enterprises are in turn identified based on both geographic targeting (existence of adequate climate, input/output markets, etc.) and feedback from experience gathered with the enterprises in that particular area. The final distribution of assets is determined locally on a combination of choice of TUP members and an assessment of individual suitability. This change of policy contributes further to narrowing the distribution of "high risk" enterprises. Eliminating allocation targets for each enterprise encourages POs to apply greater scrutiny in allocating such enterprises.

In order to efficiently deliver intensive enterprise support to TUP members, given the diversity of enterprise distribution across area offices, POs in 2004 may be trained in multiple enterprises. The support ratio has been increased to 1 PO per 100 TUP members, however a high level and quality of support is likely to be maintained.¹⁷ Mostly experienced POs are selected to work with TUP members in the higher risk enterprises, who can more effectively and efficiently provide technical support to TUP members. Enterprises such as cow and goat rearing, which constitute the bulk of assets transferred, furthermore, have been shown to require comparatively less skill and generally require less intensive support from POs. Thus POs working with multiple enterprises can be expected to divide their time between TUP members, based on demand for technical assistance, and provide adequate support for each group of TUP members. The total cycle of enterprise support, including technical assistance and introduction to microfinance VOs has further been extended from 18 months to 24 months, allowing members to benefit from intensive enterprise support over a longer period of time.

Co-enterprise support

After experience alternately transferring TUP members main and supporting assets and only main assets in pilot years, 2002 and 2003 respectively, in 2004, TUP members in poultry and non-farm enterprises are also given one calve as a supporting asset. TUP members who choose goat rearing are offered a combination of goats and cow or poultry birds, based on demand. For example the possible combinations offered are exclusively goats rearing (5 goats), combined cow and goat rearing (3 goats plus 1 cow) and combined goat and poultry rearing (4 goats and 10 poultry birds). Greater flexibility with goat rearing allows TUP members to choose a combination that suits their income preferences. Cow, vegetable and nursery TUP members receive no supporting enterprise.

The dominant view of POs regarding asset transfer mix was that co-enterprises were helpful for TUP, as they diversified risk and in many cases allowed for different patterns of income-regular cash income, plus the ability to accumulate lumpsums through livestock assets.

Stipend support

Stipend policy in 2004 has been changed to account for differences in levels of risk, investment and cash flow across the enterprises offered, and to address budgetary constraints of the SIP. In the first year of piloting the programme, TUP members were all given a total stipend of Tk. 4,320 over 52 weeks – in equal payments of Tk. 70 per week. In 2004, poultry, vegetable and nursery TUP members received the full stipend of Tk. 70 per week over 52 weeks. Cow, goat

¹⁶ Non-farm enterprises are an exception, and are allocated based on previous experience of SUP members.

¹⁷ Vegetable enterprise is an exception, where the PO to SUP member ratio remains 1:50.

and non-farm TUP members, however, received the stipend of Tk. 70 per week for only 13 weeks. The justification given for this difference is the need to compensate TUP members involved in higher risk enterprises, that require significant reinvestment by members at the end of the cycle. In the case of non-farm enterprises, it was mentioned that the need for stipend was minimal as these enterprises generally start to produce regular income quickly.

Provision of a stipend to TUP members was broadly seen as very helpful for TUP as it reduces financial pressure on TUP members and allows them to take better care of the assets, while they remain unproductive. The majority opinion of POs regarding the change in stipend policy, however, was that all TUP members should be given the same amount of stipend support regardless of enterprise. To some extent, POs felt that all TUP were “needy” and should be treated equally. However, the main reasons for this opinion are more objective and stem from experience so far with the change of policy.

A key problem that was reported by POs with varying the stipend amount and duration by enterprise was a lack of understanding by TUP members of the reasons behind the different amounts given. Some TUP members who received lower stipends than others reportedly questioned POs “why BRAC looks at them with a different eye?”.

Some POs reported the negative effect on cow rearers of the reduced stipend since most of the cows transferred to TUP members don’t start producing milk and thus generating income for one year or more. With stipend support for only 13 weeks, the POs believed that TUP members needed to seek other sources of income, usually as seasonal labour or domestic workers, and do not pay enough attention to rearing their cows. This observation can be extended to goat rearer as well, who face a similar problem of delayed income from selling goats. In the case of cow rearers, it was suggested that if stipend support is cut short, it should be compensated by giving TUP members cows that are already producing milk or pregnant and can be expected to be productive soon.

FIELD LEVEL LEARNING BY POs IN TARGETING ASSETS

The most important types of learning reported by POs relate to how to assess suitability of TUP members for particular enterprises and thus better target assets, and how to identify and address enterprise related problems, based on experience gained during the pilot phase.

Asset allocation

Before exploring PO learning on targeting assets, first it is important to understand the asset allocation process, which is explained in Box 5.1 below.

Box 5.1 Asset allocation process

TUP members are allocated assets based on a combination of their own choice, previous experience and an assessment by POs of the suitability of the enterprise for a given TUP member. After TUP members are selected into the programme, POs visit each TUP member door-to-door and offer them a choice of enterprises, briefly explaining how each operates and the nature of work involved. Emphasis is on the pattern of income (long-term vs. short-term returns) and level of profits that can be earned by each enterprise. During the briefing, POs answer questions and try to find out about TUP members’ previous experience with any of the enterprises offered. Each visit takes about 30 minutes, and POs seek out only TUP members, though at times other household member who happen to be around are also invited to participate. TUP members are usually given between 2 to 3 days to consider and discuss the choices with other household members, though in some cases, TUP members may give their choice on the spot. Before finally deciding on the asset allocation, POs consider individual and environmental factors that may favour one enterprise over another, and discuss these with TUP members. The final asset allocation decision is therefore the result of a consultative process between TUP members and POs.

Several POs recommended that more time be allowed for allocating assets to TUP so that proper screening can be done and POs can through observation and interaction get a better

sense of TUP members' character, household circumstances and movements and availability – factors which were considered important for good targeting of assets/enterprises. Some POs mentioned that at times they are asked to allocate, purchase and distribute assets within as little as 5 days for a group of TUP. Such time pressure increases the risk of misallocating assets.

In the case of livestock assets, cows and goats, it was further suggested that transfer of these to TUP members assets be sequentially interspersed over a longer period of time. When POs are asked to purchase and distribute a large number of livestock at a time, they are unable to properly select the best animals. In some cases POs have no choice but to take whichever animals are available, regardless of appearance and health, leading to future problems for TUP members who receive the inferior animals in a given heard.

Box 5.2 Targeting of non-farm enterprises

Identifying TUP members for non-farm enterprises involves some investigation by POs. When POs visit TUP members' homes initially to offer enterprise choices, they try to find out about what previous experience TUP members may have with other non-farm enterprises. Sometimes this information is gathered indirectly through a scan of the TUP members homestead environment for signs of non-farm enterprises, such as tools and equipment. For example, one PO when visiting a TUP member's home, who had initially selected cow rearing, noticed a scale inside the house. The PO asked the TUP member what it was used for and she told him that she uses it to sell *chanachur* and peanuts. POs find out whether TUP member are interested in getting BRAC support to expand their existing business, often encouraging them to do so.

However, before finally selecting an TUP member for a non-farm enterprise, POs try to confirm that the TUP member is capable of managing the enterprise on a larger scale, by informally "testing" her accounting skills and salesmanship ability. POs have found through experience, that ability to keep basic accounts is crucial as most non-farm enterprises involve frequent cash transactions. Furthermore, increasing sales often requires TUP members to make sales on credit. TUP members were frequently found to run into difficulties accounting for credit sales when payments were made in several installments, over time. Some POs further probe TUP members communication skills in selling their product, particularly for products that can be considered "luxury items", such as clothing and cosmetics.

A final factor considered important by many POs, again based on experience, is household size of TUP members, and particularly the number of dependents a TUP member must provide for. Given that most non-farm enterprises are characterized by long hours and daily work and frequent cash reinvestment to sustain the businesses, households TUP members who must provide for large families are often constrained in devoting time and crucially, accumulating regular savings to sustain their expanded businesses. Some POs, for example, noted cases particularly of businesses such as small shops and mobile grocery vending, among TUP members with many children that failed due to consumption of these goods by family members and an inability to replenish stocks over time.

Assessing suitability – environmental screening

A key learning reported by POs relates to how to match TUP members with suitable enterprises at the asset allocation stage. Based on experience in their first cycle, all POs interviewed noted that witnessing problems that arose with TUP members in the POs' respective enterprises refined and crystallized their knowledge of what was referred to as "environmental screening"¹⁸ prior to allocating assets to TUP members. As illustrated in the box 5.2 on targeting non-farm enterprises, several individual and environmental characteristics bear on the suitability of given TUP member for a particular enterprise. Many of these can be detected through proper screening prior to allocating assets to promote transfer of sustainable enterprises to TUP members.

¹⁸ Technically, environmental screening refers to screening of the homestead environment. However, POs used this term to describe both environment and individual characteristics – we will use this same expanded definition when referring to environmental screening.

As POs explained, initially environmental screening prior to asset allocation was rather crude, due to a combination of time pressures, targets for each enterprise and a general lack of practical awareness of the implications of mis-targeting enterprises. Thus for example, broad criteria such as selecting TUP members located near urban areas where markets are available for poultry and non-farm enterprises, and TUP in rural areas where pasture land was more likely to be available for cow and goat rearing was used. Vegetable and nursery allocation was primarily based on proximity to available land. Though POs received fairly comprehensive training initially, which highlighted many of the important requirements for each enterprise, often only a handful were in POs' minds in the initial round of asset allocation.

With ongoing experience alongside TUP members in each of the enterprises, POs have developed a deeper understanding of what are critical factors explaining success and failure for a given enterprise. Box 5.3 below, illustrates this kind of learning through the example of poultry rearing, one of the high-risk enterprises.

Box 5.3 Improving targeting of poultry enterprise

During their initial cycle with the TUP programme, POs have a general knowledge of the requirements for successful poultry rearing. Poultry POs receive initial training on the factors that affect egg yields, including "biosecurity" – the need for high land, wind aeration and ample sunlight. However, is often after witnessing the effect of these elements on the performance of TUP poultry enterprises that a full understanding and appreciation of the impact of these factors is developed.

One Poultry PO interviewed recalled the experience of Zorina, a TUP member who reared poultry in 2002. Zorina chose poultry among the choices offered to her. At that time, the PO simply checked her homestead to confirm there was space for poultry cages. He found her to be motivated and able, and thus expected her to succeed in the enterprise. During the cycle however, Zorina experienced problems with low egg yields. Upon further investigation, the PO deduced the reason for her troubles with the enterprise was that her house was located under a bamboo tree and heavily shaded from sunlight, an important requirement for laying birds. Zorina was forced to sell off her birds 4 months before the end of the cycle to avoid making a loss, and switch to another enterprise.

Based on this experience and others, the PO explained that his mental "checklist" of criteria in selecting TUP for poultry enterprise has expanded for future cycles. Over the first cycle he saw that all TUP members under his supervision were given the same inputs, but the outcomes varied significantly between members. By exploring the reasons for successes and failures, the PO's understanding of critical factors for success has deepened. He now checks not only that there is space for cages in an TUP members' homestead, but also for factors such as sunlight and the ability of the member to conveniently collect feed. He also consults with nearby neighbours about enterprise suitability, in an effort to preempt potential problems in sustaining the enterprise.

Some factors that can affect enterprise sustainability for a given TUP member are not immediately recognizable to POs or TUP members as they surface over time. For example, space for cows and goats initially is usually confirmed before transferring these assets. However long run problems with space that may occur as livestock multiplies are often overlooked. Through experience, it has been seen that some TUP have to sell off assets prematurely due to space constraints, and therefore are unable to expand their enterprise. As a result, some POs now attempt to engage TUP members landlords and/or neighbours to ensure that livestock can be accommodated over the long run.

Table 5.2 summarizes the key factors that POs report as crucial in screening TUP members' household environment, for each enterprise, prior to allocating assets. These criteria continue to broaden, with ongoing experience working with TUP members.

Table 5.2. Summary of learning on environmental screening

| Enterprise | Environmental screening factors |
|--------------------------------|---|
| Cage rearing of poultry | <ul style="list-style-type: none"> • Homestead in open area, not shaded from sunlight • Adequate space for poultry cages in homestead area • Cooperation of landlord for TUP members living in others' homestead • Cooperation of nearby neighbours • Ability to maintain regular savings |
| Cow rearing | <ul style="list-style-type: none"> • Availability of grazing/pasture land nearby • Adequate space for keeping livestock in homestead area and ability to accommodate offspring as cows multiply • Cooperation of landlord for TUP members living in others' homestead |
| Goat rearing | <ul style="list-style-type: none"> • Homestead located on high land, as goats are vulnerable to disease during rainy season if exposed to flood waters • Availability of grazing/pasture land nearby • Adequate space for keeping livestock in homestead area and ability to accommodate offspring as goats multiply • Cooperation of landlord for TUP members living in others' homestead • Cooperation of nearby neighbours |
| Vegetable cultivation | <ul style="list-style-type: none"> • Age and physical ability to do heavy physical work, outdoors • Availability of helping hands • Proximity of homestead to available plot of cultivable land |
| Horticulture nursery | <ul style="list-style-type: none"> • Age and physical ability to do heavy physical work, outdoors • Availability of helping hands • Proximity of homestead to available plot of nursery land |
| Non-farm enterprises | <ul style="list-style-type: none"> • Scan TUP member's homestead environment for signs of experience with non-farm enterprise (eg. tools, equipment) • Test for basic arithmetic skills • Test for communications and sales skills for some enterprises • Consider TUP member's age and physical ability to work long hours and travel • Prefer TUP members with no or few dependents, allowing TUP member to devote enough time to enterprise and accumulate sufficient regular savings to reinvest into enterprise.¹⁹ |

Training and technical assistance

Training of both TUP members and Technical POs is a final important factor, where learning is evident. In both cases, it appears that the learning process of operating enterprises successfully occurs over time with knowledge gained during formal training sessions crystallizing over time, with practical experience.

Most of the POs interviewed felt that the 3 days training plus quarterly refreshers provided to TUP members was adequate preparation for operating the selected enterprises. Some POs were of the opinion that any longer training given at the outset would not be

¹⁹ Similarly, it was mentioned by one PO that such SUP members with large households and many dependents who may have difficulty accumulating savings for reinvesting into enterprises, should be selected for cow and goat rearing, which have negligible reinvestment costs.

retained by TUP members. Most agreed that the most important enterprise related knowledge was gained through experience, or “learning by doing”, after TUP members received their assets. Thus POs stressed the importance of close supervision during the first few months after assets are transferred. Some POs expressed the opinion that other household members, particularly male members, should also participate in enterprise training, as they are likely to be involved in some way in operating the enterprises. TUP members alone may also forget some of what is learned in training. Learning is more likely to be captured fully with more household members participating in the training.

Finally, POs concurred that their ability to provide technical assistance to TUP members was an ongoing learning process, that extends beyond the initial training received by BRAC. As POs gain practical experience working with various TUP members operating their respective enterprises, PO skill in supporting TUP members grows. Box. 5.4 highlights this process of PO learning on the job.

Box 5.4 PO Training-learning by doing

Technical POs are given 15 days training on their particular enterprise. While training was reported by POs to be comprehensive and in hindsight, covered the main issues that were found to arise in the field, at the time of the training, the concepts learned are often abstract without practical knowledge of the enterprises.²⁰ Many POs have no previous experience with these enterprises, particularly some of the more complex enterprises, such as poultry and horticulture, and thus they too learn from their experience alongside TUP members as they provide technical support. As one PO commented, he held a history degree and was now in the position to have to analyse and solve problems related to rearing livestock! It takes practical experience to build these skills. Now after two years, this particular PO felt that he had a good understanding of the problem signs and issues that arise when TUP members rear livestock. Today he is more confident in his ability to diagnose and solve TUP members’ problems effectively.

²⁰ See box 5.3 for a more detailed example of the link between training and experience in the case of poultry rearing.

CONCLUSION

Sustainability of TUP enterprises is determined by numerous factors, many of which are enterprise specific characteristics such as risks and levels of skill and capital, time and labour investment required of TUP members. However, an enabling environment in the form of positive household and social support, as well as supportive institutions including the role played by BRAC POs in allocating assets and providing ongoing individual support to TUP members is also crucial. The TUP Enterprise Comparison Matrix on the following page provides an at-a-glance comparison of enterprises, highlighting key differences between TUP enterprises, according to the criteria described in the framework presented in Section I.

TUP Enterprise comparison matrix

| | Poultry | Cow rearing | Goat rearing | Vegetable cultivation | Horticulture nursery | Non-farm |
|----------------------|--|---|---|--|---|---|
| Profitability | <ul style="list-style-type: none"> - Highly profitable, short term, when subsidized. (Tk. 8,000-10,000 p.a.) - Potential for high profit, long term, but profits depend on many internal and external risks - Profitability is highly variable between TUP members. | <ul style="list-style-type: none"> - Low to medium profitability, short term. (Tk. 3,000-4,000 p.a.) - Long - term likely to be highly profitable, (Tk. 6,000 + p.a.) due to appreciation and multiplication of asset plus ongoing sale of milk/dung. - Profitability varies slightly between TUP members. | <ul style="list-style-type: none"> - Low to medium profitability, short and long term. (Tk. 3000-4,000 p.a.) - Potential for higher profit, but depends on many internal and external risks. - Profitability is highly variable between TUP members. | <ul style="list-style-type: none"> - Medium profitability over the short and long term (Tk. 4,000-5,000 p.a., including consumption). - Potential for higher profits depends on largely external risks. - Profitability varies by area of TUP members. | <ul style="list-style-type: none"> - Medium to high profitability, short and long term. (Tk. 5,000-6,000 p.a.) - Achieving optimum profitability depends on a few internal and external factors. - Profitability varies by area of TUP members. | <ul style="list-style-type: none"> - Medium profitability, short and long term. (Tk. 5,000-7,000 p.a., full time) - Some potential for growth of NF enterprises, but limited, for most TUP NF enterprises - Profitability varies moderately between TUP members' NF enterprises. |
| Riskiness | <ul style="list-style-type: none"> - High risk - External risks are climate, sale price of eggs, availability/price of inputs. - Main internal risk is lack of proper monitoring and management of poultry, for optimal laying. - Management is complex | <ul style="list-style-type: none"> - Low risk - External risks are scarcity of feed in rainy season, as well as theft and disease (uncommon) - The main internal risk is lack of feeding by TUP members, resulting in low milk production. | <ul style="list-style-type: none"> - Medium - high risk - External risks are climate/disease and scarcity of feed in rainy season (common). - Internal risks are lack of feeding by TUP and lack of monitoring and supervision of goats. | <ul style="list-style-type: none"> - High risk - External risks are high and include natural disaster/ weather, scarcity of quality land, and low sale price due to excess supply. - Internal risks include inability of TUP to do hard physical labour, due to illness or old age. | <ul style="list-style-type: none"> - Medium risk - External risks are rising land lease costs, lack of local market for plants and excess supply by TUP grouped together. - Internal risks include inability of TUP to do hard physical labour, due to illness or old age. | <ul style="list-style-type: none"> - Low risk - External risks are prolonged periods of rain, prohibiting sales and leading to spoilage of products in some cases (limited occurrence). - Internal risks include physical ability of TUP to work and lack of accounting/mgmt. skills for credit sales. |

[Contd...]

TUP Enterprise comparison matrix (Continued)

| | Poultry | Cow rearing | Goat rearing | Vegetable cultivation | Horticulture nursery | Non-farm |
|--------------------------|--|--|--|---|---|---|
| Pattern of income | <ul style="list-style-type: none"> - High to moderate daily income from egg sales, depending on stage in laying cycle (birds lay eggs on ave. 12 months, of which 3-4 months is peak laying period). - Ave. income Tk. 20 day - Unproductive period 2-5 months depending on age of pullet when purchased. | <ul style="list-style-type: none"> - Small daily income from milk sales (Milk production lasts on ave. 6 months per cow, followed by gestation of 10 months - unproductive). - Large lump sum at time of sale of offspring. - Ave. income Tk. 16-17 day during milking - Use of dung, saves TUP members' fuel costs. | <ul style="list-style-type: none"> - Lump sums of cash income at time of sale of kids; - Timing depends on cash TUP needs. - Kid price is Tk. 500-600 after 6 month rearing | <ul style="list-style-type: none"> - Moderate to high daily/weekly seasonal income at time of harvest of crops (Augrabayun - Ashar, peak season Poush-Jaistha). - Daily consumption of vegetables during harvest season. - Ave. income Tk. 4000-5000 per year (seasonal) | <ul style="list-style-type: none"> - Moderate to high weekly seasonal income when plants are harvested (Baishak-Aswin, peak season Baishak - Ashar; opposite of main agriculture season) - TUP can cultivate vegetables for consumption on land. - Ave. income Tk. 5,000-6,000 per year (seasonal) | <ul style="list-style-type: none"> - Moderate daily/weekly income from sales. - Sales income varies according to main agricultural season, but income can be earned throughout the year. - Ave. income (profit) is Tk. 15-25 per day |
| Investment needs | <ul style="list-style-type: none"> - Very high investment/operating costs¹⁴ (Tk. 7,000-8,000) - Successful TUP can manage with savings from enterprise profits. | <ul style="list-style-type: none"> - Very low investment costs. (Less than Tk. 1,000) - Main investment of TUP is time and labour, rather than cash. | <ul style="list-style-type: none"> - Very low investment costs. (Less than Tk. 1,000) - Main investment of TUP is time and labour, rather than cash. | <ul style="list-style-type: none"> - Moderate investment costs. (Tk. 4000-5000) - Successful TUP can manage with savings from enterprise. | <ul style="list-style-type: none"> - Moderate investment costs. (3000-4000 Tk) - Successful TUP can manage with savings from enterprise. | <ul style="list-style-type: none"> - Low investment costs. (Tk. 500-2000 per cycle) - TUP reinvest sales revenue from enterprise. |

¹⁴ This investment cost estimate refers to the amount of cash or savings TUP must have available to sustain a second cycle of poultry rearing. Thus it only includes the initial reinvestment cost up to the time that birds begin to lay eggs and generate income. Ongoing operating costs are significant, but are excluded as they are met from profits earned while birds are productive.

TUP Enterprise comparison matrix (Continued)

| | Poultry | Cow rearing | Goat rearing | Vegetable cultivation | Horticulture nursery | Non-farm |
|-------------------------------|--|--|---|---|--|---|
| Level of technical difficulty | <ul style="list-style-type: none"> - High skill - Management of poultry is complex - Lack of proper daily management can greatly affect profitability. | <ul style="list-style-type: none"> - Low skill - Cows are easy to manage; lack of proper management is not likely to greatly affect profitability | <ul style="list-style-type: none"> - Low-medium skill - Management is not complex, but lack of adequate care and attention to goats can affect profitability | <ul style="list-style-type: none"> - Medium-high skill - Some tasks are complex to manage properly, which can affect profitability | <ul style="list-style-type: none"> - Medium skill - Some tasks are complex to manage properly, but do not greatly affect profitability | <ul style="list-style-type: none"> - Medium skill - Skill level varies between enterprises, but most non-farm enterprises require some management skills |
| Time and labour intensity | <ul style="list-style-type: none"> - Part-time work - Strict scheduling of task limits time available for other part-time work - Can be managed by single TUP - Male household members are useful for selling eggs in market and collecting feed, but not essential. - Largely home based | <ul style="list-style-type: none"> - 2-3 hours work per day allowing much time for other work. - Can be managed by single TUP, but helping hands are useful for collecting grass/straw - Largely home based | <ul style="list-style-type: none"> - 2-3 hours direct work per day, but goats need supervision. - Allows time for other part-time work - Helping hands are very useful to manage multiple goats. - Largely home based | <ul style="list-style-type: none"> - Part-time work, most of the year (full-time for 1 month during land prep.) - Allows time for other part-time work. - Difficult for single TUP to manage as some tasks require hard physical work. - Outdoor work in field and travel for marketing | <ul style="list-style-type: none"> - Part-time work, most of the year (full-time for 1 month during land preparation) - Time for seasonal and other work. - Difficult for a single TUP to manage, as some tasks are difficult and require hard physical work. - Outdoor work in field is required. | <ul style="list-style-type: none"> - Usually Full time occupation - Allows little time for other work. - Can be managed by single TUP; helping hands are useful to allow TUP to spend time on other activities, but not essential. - Usually requires working outside the home, to sell products. |

TUP Enterprise comparison matrix (Continued)

| | Poultry | Cow rearing | Goat rearing | Vegetable cultivation | Horticulture nursery | Non-farm |
|--|--|--|---|--|--|---|
| Social externalities and other problems | <ul style="list-style-type: none"> - Smell of poultry may disturb proximate neighbors and/or discourage neighbours from visiting TUP household. | <ul style="list-style-type: none"> - As cows multiply, TUP lack space to accommodate them, particularly if living in others' homes. | <ul style="list-style-type: none"> - Left unsupervised, goats are prone to destroy others' property, causing tension and quarrels with neighbours. - As goats multiply, space can become a problem. | <ul style="list-style-type: none"> - Renewal of land lease was found to be a widespread problem for TUP members; many have to change land at the end of a one year lease. | <ul style="list-style-type: none"> - Renewal of land lease was found to be a widespread problem for TUP members; many have to change land at the end of a one-year lease. | |
| Sustain-ability | <ul style="list-style-type: none"> - Sustainable long term for skilled TUP who are not risk averse, where input supply market functions well. | <ul style="list-style-type: none"> - Highly sustainable over the long term for most TUP | <ul style="list-style-type: none"> - Sustainable over medium term, but over the long term, most TUP reduce goats and opt for cow rearing instead. | <ul style="list-style-type: none"> - Sustainable for areas where external risks are low and for TUP physically able to do hard work. | <ul style="list-style-type: none"> - Sustainable for TUP physically able to do hard work and where local demand is strong. | <ul style="list-style-type: none"> - Highly sustainable for TUP with previous experience and physically able to work long hours. Non-farm enterprises can be easily stopped and restarted. |

ANNEXES

Annex A. Breakdown of focus groups by district, area and cycle

2003 Districts

| District | Name of AO | Poultry | Cow | Goat | Non-Farm | Vegetable | Bakery | Total |
|-------------|------------|---------|-----|------|----------|-----------|--------|-------|
| Gopalganj | G.Sadar | 1 | 1 | | 1 | | | 4 |
| | Muksudpur | 1 | 1 | 1 | 1 | | | 5 |
| Madaripur | Rajoir | | 1 | 1 | 1 | | 1 | 5 |
| Netrokona | Sadar | | | | | | 1 | 1 |
| | Barhatta | | 1 | 1 | 1 | | | 4 |
| Kishoreganj | K. Sadar | | 1 | | 1 | 1 | | 4 |
| | Pakundia | | | 1 | | 1 | | 3 |
| Totals | | 2 | 5 | 4 | 5 | 2 | 2 | 26 |

2002 Districts

| District | Name of AO | Poultry | Cow | Goat | Non-Farm | Horticulture | Vegetable | Factory | Total |
|------------|------------|---------|-----|------|----------|--------------|-----------|---------|-------|
| Rangpur | Jalkar | 1 | | | 1 | 1 | 1 | 1 | 5 |
| | Taraganj | | 1 | 1 | | | | | 2 |
| Kurigram | Sadar | | 1 | | | | 1 | | 2 |
| | Chilmari | 1 | | 1 | 1 | | | 1 | 4 |
| | Ulipur | | | | | 1 | | | |
| Nilphamari | Sadar | 1 | 1 | 1 | 1 | 1 | | | 5 |
| | Saidpur | | | | | | 1 | | 1 |
| Totals | | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 20 |

Annex B. TUP Enterprise breakdown for visited areas

2003 Districts

| District | Name of AO | POs | Poultry | Cow | Goat | Non-Farm | Vegetable | Bakery |
|-------------|------------|----------------|---------|-----|------|----------|-----------|--------|
| Gopalganj | G.Sadar | 2 (C/NF, G) | | 50 | 50 | 14 | | |
| | Muksudpur | 3 (C/NF, P, G) | 50 | 50 | 50 | 13 | | |
| Madaripur | Rajoir | 3 (C/NF, P, G) | 50 | 50 | 50 | 18 | | 20 |
| Netrokona | Sadar | | | | | | | 20 |
| | Barhatta | 2 (C/NF, G) | | 87 | 71 | 27 | | |
| Kishoreganj | K. Sadar | 2 (C/NF, V) | | 113 | | 21 | 23 | |
| | Pakundia | 2 (C,NF, V) | | 50 | 20 | 15 | 31 | |

2002 Districts

| District | Name of AO | Poultry | Cow | Goat | Non-Farm | Horticulture | Vegetable | Factory | Total |
|------------|------------|---------|-----|------|----------|--------------|-----------|---------|-------|
| Rangpur | Jalkar | 50 | | | 8 | 39 | 40 | 20 | 157 |
| | Taraganj | 100 | 50 | 50 | 20 | | | | 220 |
| Kurigram | Sadar | 45 | 63 | | 18 | 50 | 42 | | 218 |
| | Chilmari | 94 | 106 | 50 | 21 | | | 30 | 301 |
| | Ulipur | | | | | | | | 0 |
| Nilphamari | Sadar | 100 | 84 | 16 | 15 | 50 | | 30 | 295 |
| | Saidpur | 50 | 44 | | 14 | | 33 | | 141 |

Annex C. Breakdown of changes of enterprise

Changes in 2003 Districts

| District | Name of AO | Poultry | Cow | Goat | Non-Farm | Vegetable | Bakery |
|----------------------|------------|-----------|-----|------|----------|-----------|--------|
| Gopalganj | G. Sadar | | | | | | |
| | Muksudpur | 1>G* | | | | | |
| Madaripur | Rajoir | 50>C | | | | | |
| Netrokona | Sadar | | | | | | |
| | Barhatta | | | | | | |
| Kishoreganj | K. Sadar | | | | | 22>C | |
| | Pakundia | | | | | 18>C | |
| Total Changes | | 51 | | | 1 | 40 | |

Changes in 2002 Districts

| District | Name of AO | Poultry | Cow | Goat | Non-Farm | Horticulture | Vegetable | Factory |
|----------------------|------------|------------|----------|----------|-----------|--------------|-----------|-----------|
| Rangpur | Jalkar | 18>C | | | | 21>C | 40>C | 13>C |
| | Taraganj | 60>C | | | | | | |
| Kurigram | Sadar | 5>C | | | | 36>C | 40>C | |
| | Chilmari | 6>C | | | | | | |
| Nilphamari | Ulipur | | | | | | | |
| | Sadar | 88>C, 12>G | | | 4>C, 3>G | 16>C | | |
| | Saidpur | 35>C, 15>G | | | 4>C | | 9>C | |
| Total Changes | | 239 | 0 | 0 | 11 | 73 | 89 | 13 |

*Note: 1>G signifies that 1 TUP switched to Goat rearing; similarly in the next row, 50>C signifies that 50 TUP from Rajoir switched from Poultry to Cow rearing.

Annex D. PO rankings of TUP enterprises

POs at each AO visited were asked to rank TUP enterprises based on their experiences. The following tables show the results of PO rankings, displayed by Area Office and by the set criteria given below.

PO RANKINGS – 2003 AREA OFFICES

| Criteria | Scale | |
|---------------------|----------------------------|----------------------------|
| Profitability | 1= least profitable, | 5=most profitable |
| Stability of Prices | 1= least stable, | 5= most stable |
| Risk | 5= most risk, | 1= least risk |
| Level of Skill | 5= most skill, | 1= least skill |
| Assistance from PO | 5= most assistance, | 1= least assistance |
| Manpower | 5= most manpower, | 1= least manpower |
| Time Consuming | 5= most time consuming, | 1= least time consuming |
| Investment needed | 5= most investment needed, | 1= least investment needed |

RANKINGS BY AREA OFFICE – 2003

| Gopalganj Sadar (RM) | | | | | | |
|----------------------|---------|-----|------|----------|-----------|--|
| by criteria | Poultry | Cow | Goat | Non-farm | Vegetable | |
| Profitability | 3 | 5 | 4 | | 2 | |
| Stability of Prices | 2 | 3 | 4 | | 5 | |
| Risk | 5 | 3 | 4 | | 2 | |
| Level of Skill | 5 | 2 | 3 | | 4 | |
| Assistance from PO | 5 | 2 | 4 | | 3 | |
| Manpower | 5 | 2 | 3 | | 4 | |
| Time Consuming | 5 | 3 | 2 | | 4 | |

[Contd...]

[Annex D... contd...]

| Muksudpur by criteria | Poultry | Cow | Goat | Non-farm | Vegetable |
|--------------------------------------|----------------|------------|-------------|-----------------|------------------|
| Profitability | 5 | 3 | 2 | 4 | |
| Stability of Prices | 5 | 5 | 5 | 4 | |
| Risk | 5 | 3 | 4 | 2 | |
| Level of Skill | 4 | 2 | 3 | 5 | |
| Assistance from PO | 5 | 3 | 4 | 2 | |
| Manpower | 4 | 2 | 3 | 5 | |
| Time Consuming | 5 | 2 | 3 | 4 | |
| Rajoir by criteria | | | | | |
| Profitability | 3 | 2 | 4 | 5 | |
| Stability of Prices | 4 | 2 | 3 | 5 | |
| Risk | 5 | 2 | 4 | 3 | |
| Level of Skill | 5 | 2 | 3 | 4 | |
| Assistance from PO | 5 | 2 | 3 | 4 | |
| Manpower | 2 | 4 | 5 | 3 | |
| Time Consuming | 5 | 2 | 3 | 4 | |
| Barhatta by criteria | | | | | |
| Profitability | | 5 | 3 | 4 | |
| Stability of Prices | | 4 | 3 | 5 | |
| Risk | | 3 | 5 | 4 | |
| Level of Skill | | 3 | 4 | 5 | |
| Assistance from PO | | 3 | 4 | 5 | |
| Manpower | | 4 | 5 | 3 | |
| Time Consuming | | 3 | 4 | 5 | |
| Kishoreganj Sadar by criteria | | | | | |
| Profitability | | 3 | | 5 | 4 |
| Stability of Prices | | 3 | | 5 | 4 |
| Risk | | 3 | | 5 | 4 |
| Level of Skill | | 3 | | 5 | 4 |
| Assistance from PO | | 3 | | 4 | 5 |
| Manpower | | 4 | | 5 | 3 |
| Time Consuming | | 3 | | 4 | 5 |

Overall ranking

| Enterprise | Rank |
|-------------------|-------------|
| Poultry | 4 |
| Cow | 1 |
| Goat | 2 |
| Non-Farm | 3 |
| Vegetable | 5 |

[Contd...]

[Annex D... contd...]

PO RANKINGS RANKING BY CRITERIA – 2003

| Criteria | Poultry | Cow | Goat | Non-farm | Vegetable |
|---------------------|---------|------|------|----------|-----------|
| Profitability | 3 | 2 | 1 | 4 | |
| Stability of Prices | 2 | 1 | 3 | 4 | |
| Risk | 4 | 1 | 3 | 2 | |
| Level of Skill | 4 | 1 | 2 | 3 | |
| Assistance from PO | 4 | 1 | 3 | 2 | |
| Manpower | 2 | 1 | 3 | 4 | |
| Time Consuming | 4 | 1 | 2 | 3 | |
| Average | 3.29 | 1.14 | 2.43 | 3.14 | |
| Overall rank | 4 | 1 | 2 | 3 | |

BREAKDOWN BY AREA OFFICE

| Profitability by AOs | Poultry | Cow | Goat | Non-farm | Vegetable |
|----------------------|---------|------|------|----------|-----------|
| Gopalganj Sadar (RM) | 3 | 1 | 2 | 4 | |
| Muksudpur | 1 | 3 | 4 | 2 | |
| Rajoir | 3 | 4 | 2 | 1 | |
| Barhatta | | 1 | 3 | 2 | |
| Kishoreganj Sadar | | 3 | | 1 | 2 |
| Average | 2.33 | 2.40 | 2.75 | 2.00 | |

Stability of prices by AOs

| | | | | | |
|----------------------|------|-----|------|-----|---|
| Gopalganj Sadar (RM) | 4 | 3 | 2 | 1 | |
| Muksudpur | 1 | 1 | 1 | 2 | |
| Rajoir | 2 | 4 | 3 | 1 | |
| Barhatta | | 2 | 3 | 1 | |
| Kishoreganj Sadar | | 3 | | 1 | 2 |
| Average | 2.33 | 2.6 | 2.25 | 1.2 | |

Risk by AOs

| | | | | | |
|----------------------|---|-----|------|-----|---|
| Gopalganj Sadar (RM) | 1 | 3 | 2 | 4 | |
| Muksudpur | 1 | 3 | 2 | 4 | |
| Rajoir | 1 | 4 | 2 | 3 | |
| Barhatta | | 3 | 1 | 2 | |
| Kishoreganj Sadar | | 3 | | 1 | 2 |
| Average | 1 | 3.2 | 1.75 | 2.8 | |

Level of skill by AOs

| | | | | | |
|----------------------|------|------|------|------|---|
| Gopalganj Sadar (RM) | 1 | 4 | 3 | 2 | |
| Muksudpur | 2 | 4 | 3 | 1 | |
| Rajoir | 1 | 4 | 3 | 2 | |
| Barhatta | | 3 | 2 | 1 | |
| Kishoreganj Sadar | | 3 | | 1 | 2 |
| Average | 1.33 | 3.60 | 2.75 | 1.40 | |

[Contd...]

[Annex D... contd...]

| Assistance from PO by AOs | Poultry | Cow | Goat | Non-farm | Vegetable |
|------------------------------|---------|------|------|----------|-----------|
| Gopalganj Sadar (RM) | 1 | 4 | 2 | 3 | |
| Muksudpur | 1 | 3 | 2 | 4 | |
| Rajoir | 1 | 4 | 3 | 2 | |
| Barhatta | | 3 | 2 | 1 | |
| Kishoreganj Sadar | | 3 | | 2 | 1 |
| Average | 1 | 3.4 | 2.25 | 2.4 | |
| Manpower by AOs | | | | | |
| Gopalganj Sadar (RM) | 1 | 4 | 3 | 2 | |
| Muksudpur | 2 | 4 | 3 | 1 | |
| Rajoir | 4 | 2 | 1 | 3 | |
| Barhatta | | 3 | 2 | 1 | |
| Kishoreganj Sadar | | 2 | | 1 | 3 |
| Average | 2.33 | 3.00 | 2.25 | 1.6 | |
| Time consuming by AOs | | | | | |
| Gopalganj Sadar (RM) | 1 | 3 | 4 | 2 | |
| Muksudpur | 1 | 4 | 3 | 2 | |
| Rajoir | 1 | 4 | 3 | 2 | |
| Barhatta | | 3 | 2 | 1 | |
| Kishoreganj Sadar | | 3 | | 2 | 1 |
| Average | 1 | 3.4 | 3 | 1.8 | |

PO RANKINGS – 2002 AREA OFFICES

| Criteria | Scale | |
|---------------------|---------------------------|----------------------------|
| Profitability | 1= least profitable, | 5=most profitable |
| Stability of Prices | 1= least stable, | 5= most stable |
| Risk | 5= most risk, | 1= least risk |
| Level of Skill | 5= most skill, | 1= least skill |
| Assistance from PO | 5= most assistance, | 1= least assistance |
| Manpower | 5= most manpower, | 1=least manpower |
| Time Consuming | 5= most time consuming, | 1=least time consuming |
| Investment | 5= most investment needed | 1= least investment needed |

AREA OFFICE RANKINGS – 2002

| Jalkar by criteria | Poultry | Cow | Non-farm | Vegetable | Horticulture |
|---------------------|---------|-----|----------|-----------|--------------|
| Profitability | 2 | 3 | 2 | 5 | 4 |
| Stability of Prices | 1 | 3 | 2 | 5 | 4 |
| Risk | 4 | 1 | 2 | 5 | 3 |
| Level of Skill | 5 | 1 | 2 | 4 | 3 |
| Assistance from PO | 5 | 1 | 2 | 4 | 3 |
| Manpower | 3 | 1 | 2 | 5 | 4 |
| Time Consuming | 3 | 2 | 5 | 4 | 1 |

[Contd...]

[Annex D... contd...]

| Taraganj by criteria | Poultry | Cow | Non-farm | Goat | |
|-------------------------------------|----------------|------------|-----------------|------------------|--------------------------------|
| Profitability | 3 | 2 | 4 | 4 | |
| Stability of Prices | 4 | 2 | 3 | 3 | |
| Risk | 4 | 2 | 3 | 5 | |
| Level of Skill | 5 | 2 | 3 | 3 | |
| Assistance from PO | 5 | 2 | 4 | 4 | |
| Manpower | 3 | 5 | 2 | 4 | |
| Time Consuming | 2 | 4 | 5 | 5 | |
| Kurigram Sadar by criteria | Poultry | Cow | Non-farm | Vegetable | Horticulture |
| Profitability | 3 | 1 | 4 | 2 | 5 |
| Stability of Prices | 5 | 1 | 4 | 3 | 2 |
| Risk | 5 | 2 | 1 | 3 | 4 |
| Level of Skill | 5 | 1 | 2 | 2 | 3 |
| Assistance from PO | 5 | 1 | 2 | 4 | 3 |
| Manpower | 2 | 4 | 2 | 3 | 5 |
| Time Consuming | 5 | 4 | 3 | 2 | 1 |
| Chilmari by criteria | Poultry | Cow | Non-farm | Goat | Sanitary napkin factory |
| Profitability | 2 | 1 | 3 | 5 | 4 |
| Stability of Prices | 3 | 1 | 5 | 4 | 2 |
| Risk | 4 | 2 | 3 | 5 | 1 |
| Level of Skill | 5 | 1 | 4 | 2 | 3 |
| Assistance from PO | 5 | 2 | 3 | 4 | 1 |
| Manpower | 4 | 2 | 3 | 5 | 1 |
| Time Consuming | 2 | 1 | 5 | 3 | 4 |
| Nilphamari Sadar by criteria | Poultry | Cow | Non-farm | Goat | Horticulture |
| Profitability | 4 | 2 | 3 | 5 | 2 |
| Stability of Prices | 2 | 1 | 4 | 5 | 3 |
| Risk | 5 | 3 | 2 | 4 | 1 |
| Level of Skill | 5 | 1 | 4 | 2 | 3 |
| Assistance from PO | 5 | 1 | 2 | 3 | 4 |
| Manpower | 4 | 2 | 1 | 3 | 5 |
| Time Consuming | 5 | 1 | 4 | 2 | 3 |
| Saidpur by criteria | Poultry | Cow | Non-farm | Vegetable | |
| Profitability | 5 | 2 | 3 | 4 | |
| Stability of Prices | 3 | 4 | 1 | 2 | |
| Risk | 5 | 3 | 4 | 2 | |
| Level of Skill | 5 | 4 | 3 | 2 | |
| Assistance from PO | 5 | 3 | 4 | 2 | |
| Manpower | 4 | 3 | 4 | 2 | |
| Time Consuming | 3 | 4 | 1 | 2 | |

[Contd...]

[Annex D... contd...]

Overall ranking

| Name of Enterprise | Rank |
|--------------------|------|
| Poultry | 5 |
| Cow | 1 |
| Goat | 4 |
| Non-Farm | 3 |
| Vegetable | 5 |
| Horticulture | 2 |
| Factory | 6 |

RANKING BY CRITERIA – 2002

| Summary of Rankings | | | | | | |
|---------------------|---------|------|------|----------|-----------|--------------|
| Criteria | Poultry | Cow | Goat | Non-farm | Vegetable | Horticulture |
| Profitability | 5 | 1 | 6 | 3 | 4 | 2 |
| Stability of Prices | 2 | 1 | 6 | 4 | 3 | 5 |
| Risk | 4 | 1 | 5 | 1 | 3 | 2 |
| Level of Skill | 5 | 1 | 2 | 3 | 4 | 3 |
| Assistance from PO | 5 | 1 | 3 | 2 | 4 | 3 |
| Manpower | 3 | 2 | 4 | 1 | 5 | 4 |
| Time Consuming | 4 | 2 | 3 | 5 | 4 | 1 |
| Average | 4.00 | 1.29 | 4.14 | 2.71 | 3.86 | 2.86 |
| Overall rank | 5 | 1 | 6 | 2 | 4 | 3 |

BREAKDOWN CRITERIA BY AREA OFFICE

| Profitability by AOs | | | | | | | |
|----------------------------|---------|------|------|----------|-----------|--------------|---------|
| AOs | Poultry | Cow | Goat | Non-farm | Vegetable | Horticulture | Factory |
| Jalkar | 4 | 3 | | 4 | 1 | 2 | |
| Taraganj | 3 | 4 | 1 | 2 | | | |
| Kurigram Sadar | 1 | 5 | | 2 | 3 | 4 | |
| Chilmari | 4 | 5 | 1 | 3 | | | 2 |
| Nilphamari Sadar | 2 | 4 | 1 | 3 | | 4 | |
| Saidpur | 1 | 2 | | 3 | 4 | | |
| Average | 2.50 | 3.83 | 1.00 | 2.83 | 2.67 | 3.33 | 2.00 |
| Stability of prices by AOs | | | | | | | |
| Jalkar | 5 | 3 | | 4 | 1 | 2 | |
| Taraganj | 2 | 4 | 1 | 3 | | | |
| Kurigram Sadar | 3 | 5 | | 2 | 4 | 1 | |
| Chilmari | 3 | 5 | 2 | 1 | | | 4 |
| Nilphamari Sadar | 4 | 5 | 1 | 2 | | 3 | |
| Saidpur | 3 | 4 | | 1 | 2 | | |
| Average | 3.33 | 4.33 | 1.33 | 2.17 | 2.33 | 2.00 | 4.00 |
| Risk by AOs | | | | | | | |
| Jalkar | 2 | 5 | | 4 | 1 | 3 | |
| Taraganj | 2 | 4 | 1 | 3 | | | |
| Kurigram Sadar | 1 | 4 | | 5 | 2 | 3 | |
| Chilmari | 2 | 4 | 1 | 3 | | | 5 |
| Nilphamari Sadar | 1 | 3 | 2 | 4 | | 5 | |
| Saidpur | 1 | 3 | | 4 | 2 | | |
| Average | 1.50 | 3.83 | 1.33 | 3.83 | 1.67 | 3.67 | 5.00 |

[Contd...]

[Annex D... contd...]

| Level of skill by AOs | Poultry | Cow | Goat | Non-farm | Vegetable | Horticulture | Factory | |
|----------------------------------|----------------|-------------|-------------|-----------------|------------------|---------------------|----------------|-------------|
| Jalkar | 1 | 5 | | 4 | 2 | 3 | | |
| Taraganj | 1 | 4 | 2 | 3 | | | | |
| Kurigram Sadar | 1 | 5 | | 4 | 2 | 3 | | |
| Chilmari | 1 | 5 | 4 | 2 | | | 3 | |
| Nilphamari Sadar | 1 | 5 | 4 | 2 | | 3 | | |
| Saidpur | 1 | 4 | | 3 | 2 | | | |
| Average | 1.00 | 4.67 | 3.33 | 3.00 | 2.00 | 3.00 | 3.00 | |
| Assistance from PO by AOs | | | | | | | | |
| Jalkar | 1 | 5 | | | 4 | 2 | 3 | |
| Taraganj | 1 | 4 | | 3 | 2 | | | |
| Kurigram Sadar | 1 | 5 | | | 4 | 2 | 3 | |
| Chilmari | 1 | 4 | | 2 | 3 | | 5 | |
| Nilphamari Sadar | 1 | 5 | | 3 | 4 | | 2 | |
| Saidpur | 1 | 3 | | | 4 | 2 | | |
| Average | 1.00 | 4.33 | | 2.67 | 3.50 | 2.00 | 2.67 | 5.00 |
| Manpower by AOs | | | | | | | | |
| Jalkar | 3 | 5 | | | 4 | 1 | 2 | |
| Taraganj | 3 | 1 | | 2 | 4 | | | |
| Kurigram Sadar | 4 | 2 | | | 4 | 1 | 3 | |
| Chilmari | 2 | 4 | | 1 | 3 | | 5 | |
| Nilphamari Sadar | 2 | 4 | | 3 | 5 | | 1 | |
| Saidpur | 2 | 3 | | | 4 | 2 | | |
| Average | 2.67 | 3.17 | | 2.00 | 4.00 | 1.33 | 2.00 | 5.00 |
| Time consuming by AOs | | | | | | | | |
| Jalkar | 3 | 4 | | | 1 | 2 | 5 | |
| Taraganj | 4 | 2 | | 3 | 1 | | | |
| Kurigram Sadar | 1 | 2 | | | 3 | 4 | 5 | |
| Chilmari | 4 | 5 | | 3 | 1 | | 2 | |
| Nilphamari Sadar | 1 | 5 | | 4 | 2 | | 3 | |
| Saidpur | 3 | 4 | | | 1 | 2 | | |
| Average | 2.67 | 3.67 | | 3.33 | 1.50 | 2.67 | 4.33 | 2.00 |

Annex E. Original proposal enterprise economics²¹

| | Unit | Quantity | Unit Price (Tk) | Total (Tk) | |
|---|-----------|----------|-----------------|----------------|----------------|
| | | | | Year 1 | Year 2 |
| Cage rearing for poultry | | | | | |
| Cages | No. | 1 | 2600 | 2600 | |
| House extension for Cage | | 1 | 300 | 300 | |
| Birds (8 weeks old) | | 36 | 50 | 1800 | 1800 |
| Feed (kg) during growing | | 360 | 12 | 4320 | 4320 |
| Stage (9-20 weeks) | | | | | |
| Medicine and vaccines | | 1 | 80 | 80 | 80 |
| Subsistence allowance | Per month | 3 | 300 | 900 | |
| Investment required | | | | 10000 | 6200 |
| Operating costs during laying period | | | | | |
| Feed requirement | Kg/bird | 38 | | | |
| | Total Kg | 1368 | 11 | 15048 | 15048 |
| Vaccines | | 36 | 2 | 72 | 72 |
| Total revenues | | | | 15120 | 15120 |
| Eggs-production | | 275 | | | |
| Sale | No./bird | 9625 | 3 | 26469 | 26469 |
| Sale of culled birds | Total no. | 35 | 90 | 3150 | 3150 |
| Total revenues | | | | 29619 | 29619 |
| Less: operating cost during laying period | | | | 15120 | 15120 |
| Net surplus | | | | 14499 | 14499 |
| Investment required for next cycle | | | | 6200 | 6200 |
| Net earnings | | | | 8299 | 8299 |
| Add subsistence allowance | | 3 | 300 | 900 | |
| Total income available for consumption | | | | 9198.75 | 8298.75 |

[contd...]

Annex E... [contd...]

| Rearing of goats | Unit | Quantity | Unit Price (Tk) | Total (Tk) | |
|--|-------------|----------|-----------------|----------------|----------------|
| | | | | Year 1 | Year 2 |
| Goats | No. | 4 | 750 | 3000 | |
| Feed (rice, bran, salt) | | | | 750 | 1500 |
| Medicine and vaccines | | | | 100 | 100 |
| Subsistence allowance | Per month | 9 | 300 | 2700 | |
| Investment required | | | | 6550 | 1600 |
| Revenue | | | | | |
| Sale of kids | First year | 4 | 700 | 2800 | |
| | Second year | 10 | 800 | | 8000 |
| Total revenue | | | | 2800 | 8000 |
| Add subsistence allowance | | | | 2700 | |
| Less working capital required for the next cycle | | | | 1600 | |
| Income available for consumption | | | | 3900.00 | 8000.00 |
| Rearing of cows | | | | | |
| Cow | No. | 1 | 6000 | 6000 | |
| Feed (rice, bran, salt) | | | | 800 | 1000 |
| Medicine and vaccines | | | | 100 | 100 |
| Subsistence allowance | Per month | 3 | 300 | 900 | |
| Investment required | | | | 7800 | 1100 |
| Revenue | | | | | |
| Production of milk | Kg/day | 2 | | 0 | 0 |
| | Days | 270 | | | |
| | | 75% | | | |
| Cyclical adjustment (dry periods) | Kg | 405 | 14 | 5670 | 3799 |
| Sale of milk | No. | 1 | 4000 | | 4000 |
| Total revenue | | | | 5670 | 7799 |
| Net revenue | | | | 5670 | 6699 |
| Add subsistence allowance | | | | 900 | |
| Less working capital required for the next cycle | | | | | 1000 |
| Income available for consumption | | | | 6570.00 | 5699.00 |

[contd...]

Annex E...[contd...]

| Vegetable cultivation | Unit | Quantity | Unit Price (Tk) | Total (Tk) | |
|--|-----------|----------|-----------------|-----------------|----------------|
| | | | | Year 1 | Year 2 |
| Land lease | Acres | 0 | 6000 | 1980 | 1980 |
| Irrigation-manual tubewell | | 1 | 2000 | 2000 | |
| Preparation and fencing | | | | 600 | 600 |
| Seed-cauliflower, brinjal, lal shak, tomato | | | | 350 | 350 |
| Organic fertilizer | Kg | 1320 | 0.5 | 660 | 660 |
| Inorganic fertilizer (Urea50, TSP30, Potash 25) | Kg | 105 | 8 | 840 | 840 |
| Subsistence allowance | Per month | 4 | 300 | 1200 | |
| Investment required | | | | 7630 | 4430 |
| Revenue | | | | | |
| Sale of vegetables | Kg | 1000 | 13 | 13000 | 13000 |
| Total revenue | | | | 13000 | 13000 |
| Net revenue | | | | 13000 | 8570 |
| Add subsistence allowance | | | | 1200 | |
| Less working capital required for the next cycle | | | | 2930 | |
| Income available for consumption | | | | 11270.00 | 8570.00 |

[contd...]

Annex E...[contd...]

| | Unit | Quantity | Unit Price (Tk) | Total (Tk) | |
|--|-----------|----------|-----------------|----------------|-----------------|
| | | | | Year 1 | Year 2 |
| Horticulture nursery | | | | | |
| Land lease | Acres | 0 | 7000 | 700 | 700 |
| Preparation and fencing | | | | 700 | 700 |
| Irrigation - manual tubewell | | 1 | 2000 | 2000 | |
| Seed | Kg | 6 | 200 | 1200 | 1200 |
| Pesticides | | | | 200 | 200 |
| Organic fertilizer | Kg | 200 | 1 | 200 | 200 |
| Inorganic fertilizer (Urea4, TSP4, Potash2) | Kg | 10 | 10 | 100 | 100 |
| Misc. | | | | 500 | 500 |
| Subsistence allowance | Per month | 9 | 300 | 2700 | |
| Investment required | | | | 8300 | 3600 |
| Revenue | | | | | |
| Sale of seedlings - first year | No. | 3000 | 2 | 6000 | 17500 |
| - second year | | 7000 | 3 | | 17500 |
| Total revenue | | | | | 13900 |
| Net revenue | | | | | |
| Add subsistence allowance | | | | 2700 | |
| Less working capital required for the next cycle | | | | 3100 | |
| Income available for consumption | | | | 5600.00 | 13900.00 |