

Rural Non-Farm Economy

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**Policy and Research on the
Rural Non-Farm Economy**

**A Review of Conceptual,
Methodological and Practical Issues**

NRI RNFE Project Team

November 2000



**Natural
Resources
Institute**

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Abstract

The role of the rural non-farm economy (RNFE) in the livelihoods of the rural poor is increasingly acknowledged. A better understanding of the factors and processes that affect the ability of the poor to engage in activities that are more sustainable and more remunerative will help in design of policies and interventions which increase the pro-poorness of the RNFE. This paper contributes to our understanding of the RNFE by discussing - in straightforward language – definitions, dynamics, policy responses and diagnostic methods for this aspect of the rural economy in developing and transitional economies. The first part of the paper tackles the complexity of defining the RNFE. This is followed by a discussion of the potential role of the sector in tackling poverty. Next, potential policy entry points are highlighted. Emphasis is placed on the multiplicity of policy levers that potentially affect RNFE development: from macro-level instruments to more sharply focused micro-level interventions. The penultimate section reviews theoretical and methodological issues that arise in RNFE research, and provides some practical suggestions on suitable field research tools. In conclusion, the present institutional vacuum for work on the RNFE is highlighted. The potential solution offered by decentralisation – where government departments might co-operate more easily to resolve locally-important issues – is noted.

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1. INTRODUCTION

Recent interest in the rural non-farm economy has been sparked by recognition that:

- most rural people in developing countries derive their incomes from multiple sources of livelihood
- the agricultural sector alone cannot sustain growing rural populations
- urban centres cannot, for economic, social and environmental reasons, be assumed capable of supporting a consistently high influx of migrants
- for government, donors and researchers working in rural areas, consideration and improved understanding of the rural non-farm economy has been partly eclipsed by the more obvious and conceptually compact agricultural (/forestry/ fisheries) sector
- heightened focus on poverty alleviation demands closer scrutiny of the livelihoods of the poor, in all their subtleties and multiplicity, and
- policy prescriptions for virtuous development of the rural non-farm sector are presently few and/or weak, lacking sound empirical foundations.

This interest calls for an improved understanding of the rural non-farm economy (RNFE). It underlines the need for policies to promote “virtuous growth” of the RNFE (i.e., such that the poor benefit directly or indirectly), whilst being vigilant to potential negative outcomes associated with such policies.

1.1 What is the rural non-farm economy?

The rural non-farm economy is characterised by its heterogeneity, incorporating self-employment, micro and small-medium sized enterprises (MSMEs), and trade activities. For most rural people in developing and transitional economies, rural non-farm activities are part of a total livelihood activity set that includes farming : that is they are part of a diversified livelihood portfolio. The rural poor in developing countries derive important income shares from rural non-farm activities. Ellis (1999) states that 30-50% is common in sub-Saharan Africa, and FAO (1998)¹ gives a mean figure of 42% for SSA. In Asia, and Latin America, FAO estimates the figures to be 32% and 40% respectively (Ellis (1999) gives appreciably higher estimates for South Asia).

All livelihood activities are enabled by access to, and endowments, of assets, and result in incomes of some sort. The assets – activities – income chain takes place within a complex environment of policies, institutions and social relations and in the context of shocks (eg drought, sudden devaluation), trends (e.g. of population, of environmental degradation or enhancement) and seasonal changes in income, health, food etc.

¹ The FAO study summarises data from over 100 studies - focussing mainly on farm households (as opposed to rural town residents) - undertaken over three decades (1970's to the 1990's).

Differential endowments and access to assets

Various authors have stressed the importance of access to, and endowments of, different assets in determining livelihood opportunities and choices. Human, social, financial, physical and natural capital endowments can be important determinants of motivation and ability to enter the RNFE. This point is elaborated on later in this paper.

Different reasons for and types of activities

Rural non-farm activities can be defined in a number of different ways. One simple distinction is between waged and self employment. This is a functional distinction. In addition, activities may be classified according to sector (eg primary sector vs secondary sector) and / or space. Barrett and Reardon (2000) explore these distinctions in quite some detail. Table 1 reproduces their Table 2. Here, RNF activities may fall anywhere within the shaded part of the table.

Table 1: The heterogeneity of rural-non farm activities.

Primary				Secondary		Tertiary	
Agriculture ²		Mining / Other extractive		Manufacture		Services	
Waged employment	L	M	L	M	L	M	M
Self employment	L	M	L	M	L	M	M

Key: L = local; M = migratory³

Source: Barrett and Reardon (2000: 40)

The situation, is however, even more complex than that depicted by table 1, because in addition to the three way classification, it is also important to make a distinction between the asset implications of particular activities. That is, it is important to distinguish between activities that accumulate, spread or denude assets. For example, the reasons for

² Ellis (2000(b): 12) makes the point that there are no hard and fast rules governing income classifications (and the same can be said for activity classifications). "Agriculture" may be taken as a rough short-hand for renewable natural resources, so that gathering / cultivation of forest products and fishing are also included. This is the definition used in this paper reflecting a perceived need to correct for past oversight in focusing largely on agriculture, forestry and fisheries in rural areas. Non-farm activity includes agro-processing and trading activities, neither of which is primary production, even if conducted on farm.

³ Migratory activity and incomes are tricky subjects. Rural non-farm activity could not include the activities of permanent migrants. The same cannot necessarily be said however for rural non-farm incomes, as under some definitions, remittances from former members of the household who have permanently moved away would be regarded as unearned rural non-farm income. In this paper, unearned income from such sources is included in our definition of the RNFE.

individuals or households engaging in a particular non-farm activity might be for the purposes of accumulation through a chosen activity or set of activities (e.g. setting-up a small business). Alternatively it might be part of an adaptation to perceived livelihood risks, (e.g. switching from cash crop cultivation to commodity trading, perhaps in response to drought). It might be a short term response to seasonal hardships or an exogenous economic or health shock: a coping strategy which may reduce but not irrevocably erode the asset base and livelihood status (e.g. poorly paid piece work for a rich patron). Finally, it might be an act of desperation – a survival strategy which results in less reversible asset disaccumulation (e.g. destroying fruit trees for firewood sales).

Classifying incomes

Classifying rural non-farm incomes may be facilitated by referring to table 1. Thus by this classification there are twelve potential categories of rural non-farm income. Depending on definitions, rural non-farm income may differ from rural non farm activity to the extent that unearned income is included. One interesting and important question therefore is that when conceptualising the rural non-farm economy, should incomes or activities be the focus? The answer to this question will depend to some extent on the objectives of the enquiry, however, in this paper both earned and unearned income are included. This is for the very good reason that by ignoring unearned income we are ignoring a possibly significant source of income, which could have implications for poverty reduction strategies.

In the light of all this we can define the RNFE as:

The sum of livelihood activities - valued by incomes in cash or kind - based in rural⁴ areas or pursued by people who are from households that are mainly rural-based, which do not involve primary production of crops, livestock, fisheries or forestry. The activities may be waged or self-employment, formal or informal, legal or illegal.

Plus

The sum of unearned incomes received by such people.

Scope of paper

The purpose of this paper is to describe the main features of the RNFE – particularly in relation to its importance to the poor, explain key concepts, point out the dilemmas (in policy or research), and review potential solutions. The paper is targeted to those who work in rural development – be they policy-makers (in government or donor organisations), researchers, NGO staff or other development practitioners.

The following section (Section 2) focuses on the importance of the RNFE to the poor. It reviews work on incentives and capacity to engage in non-farm activities. Section 3

⁴ It should be noted that “rural” can also give rise to problems when one considers rural towns. For the purposes of this paper, “rural” excludes rural towns.

focuses on policy entry points, categorising these in terms of the level (macro/meso/micro) at which they operate. Methodological issues are then reviewed in the fourth section, which covers both practical and theoretical considerations that arise in RNFE research. The concluding section briefly reviews some of the institutional options for developing pro-poor RNFE research and policy.

2. POVERTY DIMENSIONS

2.1 What can the RNFE contribute to poverty reduction?

In many parts of the world, the number of poor people in rural areas exceeds the capacity of agriculture to provide sustainable livelihood opportunities. Even with a decline in fertility rates and a slowing of population growth, this situation will not change significantly. Out-migration is not an option for everyone, and urban centres cannot (or should not, for economic, environmental or social reasons) be assumed capable of providing adequate livelihood opportunities for all those unable to make a living in agriculture. This puts the spotlight on the RNFE as a potential vehicle for poverty reduction in rural areas. The RNFE may:

- absorb rural surplus labour
- help farm-based households spread risks
- offer more remunerative activities to supplement or replace agricultural income
- provide a means to cope or survive when farming fails

From a policy perspective, it is important to understand participation in the RNFE, particularly participation of the poor. Why do individuals enter the rural non-farm economy? What types of RNFE opportunities are accessible to them? Does participation in the RNFE contribute to an individual's "upward" or "downward" livelihood trajectory (a concept elaborated by Swift, 1998)⁵. Further, just as it is important to understand entry into the RNFE, it is equally important to understand exit – whether people remain in the RNFE or leave, either through choice or circumstance.

Answers to these questions can inform the development of policies that:

- support the efforts of the poor
- protect them from deleterious livelihood trajectories, and
- improve access to sustainable and remunerative non-farm livelihoods

⁵ Households operating within a particular livelihood system may be on quite different livelihood trajectories. These may be "downward", in the sense that there is a process of dis-accumulation of assets; "upward" in which case there will be asset accumulation; or more or less constant in the sense that the household asset base is neither expanding nor contracting.

3. PARTICIPATION OF THE POOR IN THE RNFE

3.1 Motivation to participate

Neo-classical economics suggests that risk-neutral farmers will divide their labour between farm and non-farm employment opportunities such that the expected marginal returns to all activities are equal. In developing countries, resource-poor farmers are usually risk-averse. The expectation is therefore that less time will be allocated to the more risky jobs if the expected returns in each sector are the same, or alternatively, the farmer will be willing to accept lower wages in the less-risky environment. Farmers may engage in off-farm and non-farm activities to reduce the total variance of their income (i.e., the overall risk) or to increase the total returns to their labour.

Participation in any employment sector depends on both *motivation* and *ability* factors. The first is the incentive – perhaps higher returns and/or less risk than the alternatives. The second concerns an individual's or household's capacity to engage in the preferred sector – perhaps reflecting certain skills or being able to make the necessary financial commitment. It is often the poorest households that have the greatest motivation to diversify, however, these households also face the highest constraints to “upward” accumulative diversification.

Demand pull motivation

In rural areas many households take advantage of opportunities in the rural non-farm economy, taking into consideration the wage and risk differentials associated with each type of employment. Households may diversify into the RNFE to enhance their assets (e.g., to accumulate income or acquire skills), typically with the option to reverse their decisions (Swift, 1998). When returns to RNFE activities are higher and less risky than farming, “pull” factors are at work (FAO 1998). Ellis (2000a) notes that factors that increase the return to time spent on farm activities would tend to reduce the motivation to diversify. For example, an increase in the prices of farm output or a rise in farm productivity through the adoption of new technology (e.g. high yielding varieties) would tend to reduce the motivation to diversify. Alternatively, a rise in non-farm wages or greater opportunity to undertake remunerative non-farm employment would increase the motivation to diversify (Ellis, 2000a).

Distress-push motivation

Conversely, when farm income is inadequate and opportunities for consumption smoothing such as credit and crop insurance are missing, or when input markets are absent or fail and the household needs cash to pay for farm inputs, households may be “pushed” into the non-farm sector, often making irreversible decisions.

Poverty-induced participation in the RNFE may indicate that the non-farm sector is absorbing a residual for surplus labour that cannot be employed on-farm. Islam (1997) suggests that the ratio of non-farm to farm workers in the labour force can be used as an indicator of “residual” employment in the non-farm sector if a higher ratio leads to a relative fall in non-farm wages. Factors that lead to *distress-push* participation in the RNFE include successive droughts that depress income and hence increase the need for alternative sources of income, usually through low-skill jobs (Islam, 1997). Rural populations are then forced into non-farm activities at wages lower than they were earning in agriculture⁶.

3.2 Ability to participate

The capacity of households or individuals to participate in the RNFE is not uniform. Reardon *et al*'s (2000) analysis of 100 farm survey household studies found that:

“In sum, the evidence tends to show a rough pattern: a positive relationship between nonfarm income share (and level) and total household income and/or landholding in much of Africa, a negative relation in much of Latin America, and a very mixed set of results in Asia” (Reardon *et al*, 2000).

Reardon *et al* argue that the positive relationship and U-curve relationship (mixed results) reflect high entry barriers to certain RNF activities, making certain activities accessible only to higher income groups. The very poor may nonetheless participate in the RNFE – if there is sufficient demand for labour in low entry barrier activities.

As population pressure increases, it is more difficult for the rural poor to rely on natural resource-based activities. For many, livelihoods have become less secure and sources of income more varied⁷. It is important to understand who has access to those RNFE activities that bring sustained and significant improvements in incomes or welfare for the individuals or households concerned. An understanding of the barriers to entry faced by different groups within society, or individuals within a household, to those desirable activities is therefore useful – and particularly important for policy makers. Growth in the RNFE can affect inequality and divisions within a household, village, or region and it is important to understand how an individual's and a household's assets influence ability to access different sub-sectors of the RNFE.

⁶ It is very important to note that although participation in the RNFE can be categorised as “distress push” or “demand pull” – the activities associated with each will differ among households. Brick making may be a distress-push activity for someone previously working as a driver, but a demand-pull activity for someone previously collecting fuel wood to sell.

⁷ The evidence on this is quite mixed. Ellis (1998) considers that for sub-Saharan Africa, the household level evidence does not allow inferences on trends in income diversification. Reardon *et al* (2000) point to Asian studies that appear to show that non-farm income sources are becoming more important.

“Direct evidence for the existence of high entry barriers (relative to the means of the poor) is that it is common to find large differences in the nature and return-to-labour of the typical set of non-farm activities undertaken by the poor and rich, the small farmer and the large. Moreover, the available evidence shows that there is often a wide variability in returns to labour over non-farm occupations in a given zone” (Reardon *et al.* 2000).⁸

Factors that relate to access can be divided into those that are household- or individual-specific, and those that relate to a specific village or region. Ellis and Hussein (1998) consider six factors that relate to access. Five of these factors are individual or household-specific – health and nutrition, household composition, access to finance, education, and social capital – and one is region-specific – infrastructure. Among the household-specific factors, some may be gender or age-specific, in particular health and nutrition, access to finance, and education.

These factors can be considered assets, “...the factors of production, representing the capacity of the household to diversify” (Barrett and Reardon, 2000, p1). Assets can be categorised in different ways. Barrett and Reardon propose a division between productive and non-productive assets, where the latter are forms of wealth or social claims that can be drawn upon in times of need. Some of the recent livelihoods literature (for instance, Ellis, 2000b and Carney, 1998) proposes a five-way classification: natural capital (access to land or common property resources); social capital (networks and organisations); human capital (including health and education status); financial capital; and physical capital (hard infrastructure, shelter and production equipment).

Reardon *et al.* (2000) found that better roads and improved infrastructure in general can either increase participation, or make it more difficult for lower asset households to participate in the RNFE because of increased competition from outside areas. (See also Swift, 1998, whose research concurs with these findings). More specifically, the distributional impact of improved infrastructure on poverty will depend on the involvement of the poor as producers or labourers in activities favoured or harmed by the reduction of *de facto* protection and the changes that lower transaction costs generate in the degree of integration between local and distant labour markets. Whilst increased integration will provide poor or landless households with opportunities for non-farm employment, the development of rural towns may push up land prices, driving the poor off the land, whilst their lack of skills and start-up capital may relegate them to a pool of landless casual labour. An important question for research is to improve our understanding of the circumstances that increase or decrease inequality.

Education is another potentially important facilitator of access to higher-income sectors. Numerous studies show that education (primary and secondary) contributes to the growth of the non-farm sector in villages and small rural towns (Islam, 1997). Education is

⁸ Reardon *et al.* (2000) refer the reader to papers by Matlon, 1979 (northern Nigeria), Reardon *et al.* 1994 (Burkina Faso, Niger, and Senegal), Lanjouw and Stern, 1993 (India), and Lanjouw, 1996 (Ecuador) for evidence of bifurcation of activities undertaken by the poor and non-poor.

linked with higher productivity in trading, construction, service and manufacturing activities. Secondary education stimulates entrepreneurial capacity whilst primary education enhances work force productivity. Data from Bangladesh (Islam, 1997) show progressively higher levels of education (i.e., percentage of workers with secondary education) associated with rural industry workers (compared with the rural population as a whole), proprietors, and proprietors in expanding industries (which require more aggressive leadership). Data from Ghana (Vijverberg, 1995, cited in Islam, 1997) show a relationship between years of schooling and incomes in non-farm employment. This study also shows that schooling of other family members, not directly employed in the enterprise, also affects incomes through “advice, suggestions and hints”, and “self-employed rural family enterprises benefit greatly from education irrespective of the sector or location of the rural enterprise.” This is consistent with considerable anecdotal evidence of the high priority attached to education by poor families, once “threshold” income and expenditure needs have been met. Many studies show a higher return to schooling in non-farm activities than in the farming sector.

Yet despite the intuitive appeal of these findings, the relationship between incomes and education is not that clear-cut. Lanjouw (1999) suggests that educational credentials may be used to ration access to scarce regular non-farm employment opportunities. A general increase in education levels may ratchet up the educational requirement (regardless of its practical use) - or result in a shift to other selection criteria, still tending to exclude the poor.

Reardon *et al* (2000) argue that where access to education is fairly equally distributed, the effect will be to equalise the overall size distribution of income. Moreover, where there are more non-farm employment opportunities with low education requirements, rural non-farm income inequality should be less. FAO (1998) attribute the poor distributional consequences of RNF participation in Africa to a scarcity of labour-intensive activities that have low entry barriers.

Access barriers may also be related to caste or class divisions, to ethnicity, language or other cultural factors (aspects of social capital). High status groups of all kinds, including high castes and high status/majority ethnic groups, may gain access more easily to more remunerative non-farm activities. Individuals and households belonging to low status groups, on the other hand, find it difficult to diversify into better-paid sectors, and tend to be forced into certain less remunerative non-farm activities. An example of this is provided by Unni (1997) who addressed variations in RNF employment by region in India. He found that low-income households, which need to diversify because farming does not provide sufficient income, tend to be involved in construction. Higher income households tend to be involved in business and salaried jobs. Business and salaried jobs have higher entry barriers and yield higher returns than agriculture and other non-farm activities (Basant 1994).

Being female may represent an important “barrier to entry” to non-farm employment. Diversification in rural incomes may also affect gender relations (women may become more marginalised if they are more constrained than men in their access to non-farm

opportunities, or they may be empowered by new opportunities to earn income, and develop skills and networks). Age considerations can also be important. Characteristically, it is the young men who migrate, either seasonally or permanently to urban centres for work. The old and women are less likely to migrate in most societies. At the household level, gender and age profiles will to some extent determine the pattern of non-farm activities undertaken. Financial capital, physical capital (infrastructure, especially roads) and the quality of social networks can be critical determinants of access to livelihoods.

Conceptually, some determinants of participation fall in a grey area between the exercise of choice or constraint. Religious or cultural factors may mean that there is a preference for involvement in certain types of non-farm livelihood activity by all members of a community or by a sub-section. Members of certain castes, classes or ethnic groups may consider participation in some types of work undesirable. In many less developed countries (LDCs) women play a key role in farming and non-farm ancillary services. They are often responsible for sale of produce and for subsistence production. Are they constrained to working in these sectors or is this a choice, reflecting other considerations such as adherence to traditional or conservative values or desire to work close to the family home? Livelihood patterns may result from the combination of incentives, the absence of entry barriers, and the exercise of choice.

This discussion has focussed on access to RNFE but it is also important to consider *exits* from the RNFE. The frequency of exit and re-entry, and why individuals exit, whether through choice or necessity, are ignored in much of the literature. A notable exception arises in the analysis of small business, where there have been a lot of studies that show high failure rates in small enterprise. Exits may also indicate the presence of barriers, including insufficient capital, contacts or knowledge to sustain turnover through more difficult periods.

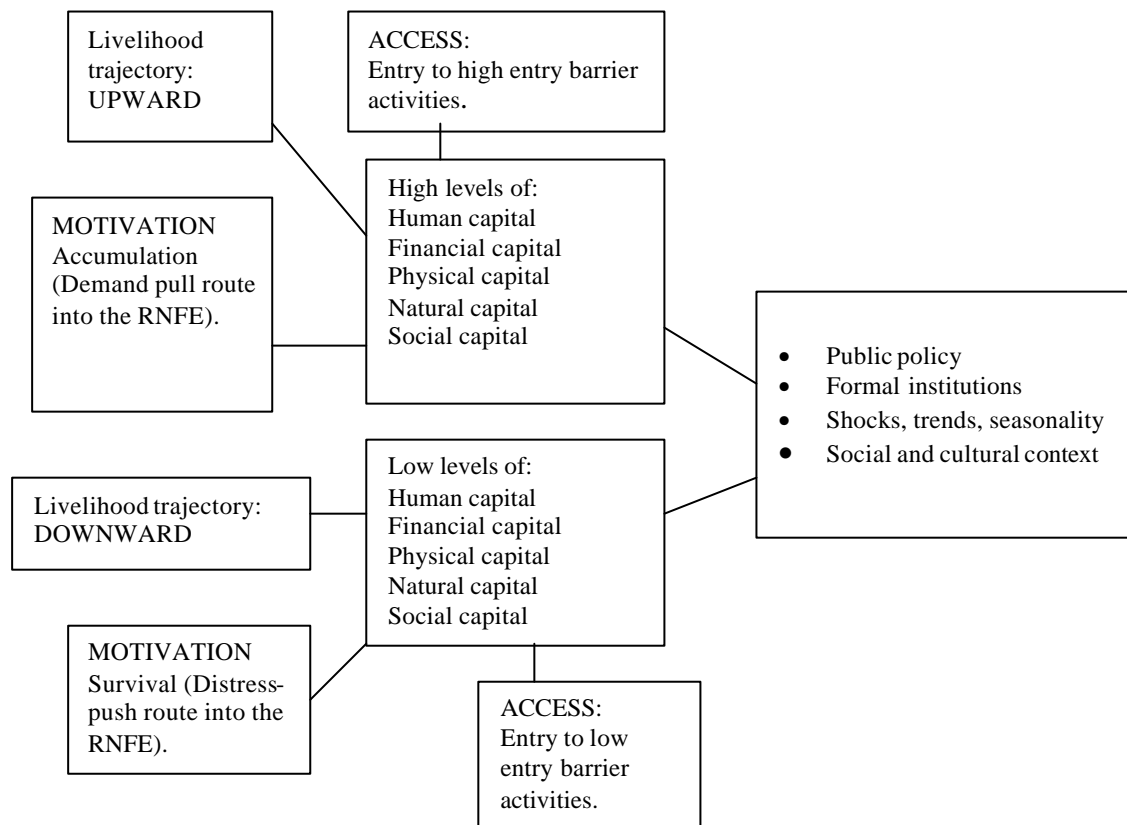
3.3 Multiple influences on household or individual participation in the RNFE

The recent livelihoods literature conceptualises livelihoods⁹ as a dynamic consequence of assets, policy, formal institutions, shocks and trends, and the social and cultural context

⁹Carney 1998 (p4) adapts the concept originally developed by Robert Chambers and Gordon Conway: "A livelihood comprises the capabilities, assets....and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base."

(e.g., Carney, 1998, Ellis, 2000b). Figure 1 shows how these factors might influence motivation and ability to participate in the RNFE – mediated through their effect on household (/individual) assets. The dichotomy presented is an extreme situation implied by Reardon *et al*'s (2000) U-curve relationship, where high asset households are able to engage in high-income (demand-pull) activities, whilst low asset households are pushed into low-income activities. In reality of course, livelihood outcomes will be much more mixed, as households may not have uniformly low or high assets, and even those with poor assets may have some opportunities to improve their incomes and assets.

Figure 1. Contextual factors, capital assets and participation in the RNFE



4. POLICY ENTRY POINTS

4.1 Macro-/meso-/micro-level influences on the RNFE

The RNFE may be thought of as existing at different levels of aggregation: from the micro-level of the individual, enterprise or village, through progressively larger geographical units, to the international level. At each of these levels, the RNFE is the sum of individual non-farm rural economic activities plus unearned income. Just as the RNFE can be conceptualised at different levels, so too can the context within which it operates and the influences on it. Figure 2 gives examples of key influences on the RNFE within the interacting but conceptually distinct “strata” of policy; formal institutions; shocks, trends and seasonality; and the social/cultural context.

Interactions take place along the **horizontal** axis in the figure. These are interactions over physical space and time. Interactions also take place along the **vertical** axis, e.g. between a change in policy and the social and cultural context.

Horizontal (micro-macro) linkages

The boxes in Figure 1 are examples of influences on the RNFE at the different levels of aggregation. The boxes are best seen as examples of where – in terms of the level of activity aggregation - different forces have an initial “first-round” impact on the RNFE. This two-dimensional figure can only demonstrate different ‘entry points’ for external factors that influence the RNFE, however, the impact of such policies, shocks, or trends, are likely to be felt directly or indirectly at several or all scales through micro-macro linkages. The impact of some forces is quite specific in the sense that they have an immediate or first-round effect on one particular aspect of the economy. An idiosyncratic shock at the household or individual level (e.g. accidental death of an earner) would be an example of this. In this example the first-round effect will be specific perhaps to the household in question, but subsequent effects may be more generalised if, for example, the person who died was the teacher at a village school. These idiosyncratic first-round effects are to be contrasted with more generalised effects that for example might arise from a regional or nation-wide drought.

Vertical linkages

An example of a “vertical interaction” would be that between a rural roads policy which resulted in the rapid expansion of a road network in a particular region with a social and cultural context in which one gender is by tradition or culture more geographically mobile than the other. This interaction might exacerbate gendered disparities in access to the RNFE and thus affect the development of the RNFE in a particular area.

Examples of linkages

Examples of vertical and horizontal linkages and interactions are not difficult to find. In parts of Asia (e.g., Punjab and Haryana) the Green Revolution acted as a driving force for small-scale industrial expansion in rural areas, both to supply inputs and process outputs. In China in the early 1980s, a combination of macroeconomic shifts, local government decentralisation, de-collectivisation of farming and higher procurement prices allowed a

rapid expansion of agricultural output. A dramatic expansion in small-scale industry and commerce followed from the consequent rise in incomes (driving consumer demand and house-building) and the availability of surplus capital retained in the localities. The most striking growth was in the coastal provinces, which also benefited from the newly-permitted influx of foreign investment.

Knock-on effects can be negative too. Legislation to improve working conditions may push up costs, depriving the poor of employment, or shifting market share towards larger companies with more rigid recruitment policies that exclude the less educated (and poor).

Recent RNFE research in central and eastern Europe underlines the role of such complex interactions. Some of this work utilises theories based on new growth economics. This assumes the presence of important externalities when combining labour and capital with an increasing amount of knowledge. For example, the gains from education depend not only on the extent to which a person's productivity is raised by education, but also by the interaction with many well-educated people (a positive externality). An effective enabling institutional environment and good governance at all levels of administration are also key determinants of productivity gain. These models of economic growth make clear that productivity growth as well as capital formation (real and human capital) are both critical to the achievement of high rates of growth in per capita GNP (Gillis *et. al.*, 1996) and thus sustainable livelihoods (see Breitschopf and Schreider, 1999).

Challenges for empirical work and policy analysis

The reality of complex micro-macro (horizontal) linkages and “vertical” linkages pose challenges for empirical measurement methods and for policy-oriented research. Any serious attempt to improve our understanding of how the RNFE can contribute to poverty alleviation must take on board this complexity.

Figure 2: Factors that influence the development of the RNFE

	International Indiv	National	Region	District	Village	Enterprise unit	HH
Policy and direct intervention	<i>Ex. rates; free trade areas.</i>	Macro-prices and policies e.g. interest rates Sectoral policy e.g. ag. policy, environmental policy,		Infrastructural investment RNFE – Ag. Sector		Tax incentives Micro-	Training Micro-credit
Formal institutions	BW; UN; markets.	State and markets	Regional / local offices of state; private sector		Local markets; CBOs		
Shocks, trends, seasonality	Global warming	1.1.1.1.1.1.2 rought	Disease outbreak		1.1.1.1.1.1.1 amily illness		
Social and cultural context	The 'moral economy' / social capital						
	KINSHIP; GENDER; ETHNICITY; RELIGION						Intra- hh relations

Key: BW = Bretton Woods Institutions; CBOs = Community Based Organisations.

4.2 Policy Interventions and the RNFE

The previous section demonstrated some of the scale and definitional issues involved in conceptualising the RNFE, and showed how it is susceptible to a wide variety of trends, shocks and processes (both intended and unintended) underway in the wider political economy. Within this complexity, a key question is: what are the critical policy levers for virtuous (pro-poor, environmentally non-damaging, gender sensitive) RNFE growth? One way to characterise the range of theoretical policy alternatives is to identify potential policy entry points. Conceptually there is a continuum stretching from the “macro” of the overall economy to the “micro” of community, household and individual. Using this classification, policies at each level could include¹⁰:

- Macro-economic policy
- Policies to foster geographically specific investment, either local reinvestment or outside investment
- Policies designed to exploit and strengthen beneficial upstream and downstream linkages between the RNFE and the agricultural sector
- Specific policies designed to maximise sustainable remunerative waged or self-employment of poor individuals in the RNFE.

Considerable work has been done on upstream and downstream linkages between agriculture and the RNFE (see for example Lanjouw (1999), Lanjouw and Lanjouw (1997), Reardon *et. al.* (1999), Haggblade, Hazell and Brown (1989)). Most of this work highlights the strong pivotal role of the agricultural sector as the driver of the rural economy, with the strongest linkages often through consumption effects. Despite this strong pattern, agriculture is not always the main driver. In some situations it may be mining, remittances, or even public sector employment.

Given the amount of attention already focused on agriculture linkages, this entry point will not be discussed further here. However, there remain key policy questions to be addressed in relation to the other entry points: Key questions under for each policy area can be summarised:

Macro economic policy:

- What macro-level policies will foster economic growth in the RNFE?

Policy to foster geographically specific investment:

- How can reinvestment locally be fostered to enhance local livelihoods (and without significant inefficiencies in opportunity costs of that investment?).
- How can investment from outside be encouraged which promotes sustainable livelihoods?

Policies designed to maximise sustainable remunerative waged or self-employment of poor individuals in the RNFE:

¹⁰ See Gordon (1999) for a similar classification.

- How can waged employment be generated as a significant form of livelihood enhancement?
- What can be done to enhance existing remunerative self-employment opportunities for people, especially the poor?
- What policies can assist people who are forced to take up distress or coping strategies? Is the expansion in coping activities in part driven by negative consequences of other policies? How can poor people be enabled to widen their choice of livelihood alternatives such that they are not reliant on endangering natural capital, low-pay and exploitative alternatives to farm poverty?

4.3 A hierarchy of policies for the RNFE

Potential policy interventions and their ramifications are presented in Figure 3 drawing on the same macro/meso/micro hierarchy of entry points. There are five columns:

- column 1 lists the policy entry points as noted above
- column 2 provide specific types of policy that might be expected at each level
- column 3 gives examples of the problems these policies could be expected to affect and which may arise from these policies.
- column 4 Column 4 gives examples of specific policy actions or strategies. These actions are of two types : actions necessary to foster positive change in the RNFE and actions necessary to deal with the negative consequences of such interventions. These negative results (anticipated or not) might be experienced in the RNFE itself (eg in environmental or gender impacts) or in other parts of the economy (e.g. the crowding out of investment).
- column 5 gives examples of the types of employment and other livelihood opportunities that policy would aim to enhance.

Policy area	Policy examples	Potential problems to be dealt with by policy and which may arise from policy	Strategy types a) to foster change b) to deal with negative consequences	Desired policy outcomes
1. Macro policy	<ul style="list-style-type: none"> Exchange rate policy Interest rate policy Fiscal policy 	<p>Income inequality trend up or down?; Gender equality helped or hindered (or mixed)?;</p> <p>Environmental protection enhanced or reduced (or mixed)?;</p> <p>Local governance and power systems improved or worsened</p>	<p>a) Devalue exchange rate; reduce capital market distortions to encourage local savings (check);</p> <p>b) Introduce selective import tariffs to protect infant RNF enterprises from foreign competition.</p>	<ul style="list-style-type: none"> Potentially includes all of below
2. Encouragement of local reinvestment and outside Investment	<ul style="list-style-type: none"> Soft and hard infrastructural development Tax incentives 	<p>Non-sustainability of investment? Power systems; income inequality; temporary? Adequacy of markets for outputs; Zero-sum (transferred from other place which loses livelihoods?)</p>	<p>a) Make property rights secure (eg land reform); improve banking; provide infrastructure; micro-credit? Reduce domestic trade constraints</p> <p>b) Introduce environmental and labour protection measures; gender awareness; anti corruption legislation.</p>	<ul style="list-style-type: none"> Local reinvestment: Re-invested local financial surplus; returned migrants; invested remittances Foreign investment in industry, services or plantations
3. Employment (i) Waged employment (ii) Self employment	<ul style="list-style-type: none"> Promotion of small-scale industry Promotion of small-scale industry 	<p>Seasonality? Insecurity? Non-sustainability; Credit shortage; policy-induced biases towards agriculture;</p> <p>Seasonality? Insecurity? Non-sustainability; Credit shortage; policy-induced biases towards agriculture;</p>	<p>a) A variety of project level interventions: creation of industrial estates; targeted credit programmes; training (short term); education eg adult literacy (longer term).</p> <p>b) Environmental protection; employees protection; gender awareness.</p> <p>a) A variety of project level interventions: creation of industrial estates; targeted credit programmes</p> <p>b) Environmental protection; employee protection; gender awareness</p>	<ul style="list-style-type: none"> Sustainable and remunerative formal and non-formal sector jobs, in small and micro enterprises; plantations, factories, tourism, infrastructure and other construction. Sustainable micro-enterprises; needed and profitable local service providers.
(iii) Employment based safety nets	<ul style="list-style-type: none"> Productivity enhancing safety nets which build up capital assets 	<p>Seasonality? Insecurity? Non-sustainability; policy-induced biases towards agriculture; Credit shortage; Power systems (class, ethnicity, caste, gender, age)</p>	<p>a) Public works programmes: food for work; cash for work; seeds for work</p> <p>b) Sensitisation, appropriate targeting mechanisms, building on and not undermining existing systems of social security.</p>	<ul style="list-style-type: none"> Prevention of downward livelihood trajectory spirals; promotion of resilience to shocks and reduced vulnerability; graduation into self employment and waged employment.

5. METHODOLOGICAL ISSUES FOR RNFE RESEARCH

5.1 Matching methods to the research questions and the available resources

Much of the current interest in the RNFE by donors and governments can be summed up in one central policy question: how do we foster the development of the RNFE such that it benefits poor people? From this, five main areas of interest to policy-oriented RNFE research can be identified:

- description of the RNFE – how big is it? what does it comprise? who does it involve? how are its effects distributed?
- what makes the RNFE grow or shrink?
- what determines individual or household participation in the RNFE?
- what is the nature of linkages with other sectors?
- how do changes in policy or direct intervention affect the RNFE?

These different questions call for different tools of investigation and analysis. It may be possible to use secondary or primary data. Primary data collection may use qualitative or quantitative survey instruments. These decisions require an informed assessment of the trade-offs in cost, time, usefulness, reliability and quantity of data, as well as the type of analysis permitted.

This section considers some specific methodological issues that arise in RNFE research and some of the trade-offs implicit in methodological choice. It explains the use and limitations of particular tools that are common in the analysis of RNFE.

5.3 Using qualitative and quantitative methods to best effect

Because the RNFE is multi-dimensional, heterogenous and complex, it poses challenges for research methods that are best met through a judicious mix of qualitative and quantitative techniques. No single approach will provide all the answers, and problems may arise when one approach e.g. the manipulation of secondary data sets, is relied upon exclusively to understand the RNFE. Many of the poorest people engaged in RNF activities will be hard to track down or reluctant respondents. Some activities will be illegal – others just inaccessible. Respondents may not intend to give false answers, but problems of recall arise over time and with a myriad of small informal transactions. Rigorous cross-checking of different data sources, and careful triangulation during the course of primary data collection will help yield useful and valid results.

In order to be useful, information needs to be trustworthy. The following four tests of trustworthiness¹¹ can be discerned:

- *Internal validity or Credibility.* The key question here is: how can we be confident about the ‘accuracy’ of the findings as these apply to the immediate subjects or objects of investigation e.g. a particular focus group or sample?
- *External validity or Transferability:* Can we apply these findings to other contexts or with other groups of people?
- *Reliability or Dependability:* Would the findings be repeated if the enquiry were replicated with the same or similar subjects in the same or similar context?
- *Objectivity or Confirmability:* How can we be certain that the findings have been determined by the subjects and context of the inquiry, rather than the biases, motivations and perspectives of the investigators?

Empirical investigation of the RNFE is no different from investigation of other aspects of rural society and economy in the sense that data collection techniques need to be suited to the variables under investigation. Some techniques are suited to gathering information on variables that can be easily quantified and manipulated arithmetically and statistically whereas others are suited to gathering information on variables which are less amenable or not at all amenable to arithmetical or statistical manipulation. Problems can arise when attempts are made to apply techniques suited to collecting information on one type of variable to the other type.

¹¹ Internal and external validity, reliability and objectivity are the terms used in conventional scientific research. Credibility, transferability, dependability and confirmability are the terms put forward by Pretty (1993), after Lincoln and Guba (1985) to describe the equivalent criteria implicitly and routinely used in much participatory field research.

Techniques such as PRA, RRA and social anthropological techniques of participant observation have been called variously qualitative, informal, participatory. They are associated, incorrectly to some extent, with collection of qualitative data. Techniques involving the administration of questionnaires to random samples of populations have been called quantitative, formal and non-participatory. These techniques have been associated, again not always correctly, with the collection of quantitative data. Although the distinctions are incomplete and flawed, this paper adheres to the same convention, using the same labels of 'quantitative' and 'qualitative'.

A key point to note is that each approach has different advantages over the other, in terms of the trustworthiness tests. For example, any well-designed and executed PRA must at the very least conform to the criteria of internal validity (or credibility) and objectivity (or confirmability). As defined above, if information has internal validity then we know that it accurately reflects what is going on in the specific situation (e.g. site) under investigation. If information has objectivity then we know that it reflects, more or less, the subjects and context of the enquiry as opposed to the biases, motivations and perspectives of the investigators (i.e., it has avoided Robert Chambers' six biases¹²).

If we want to generalise from the particular then two further criteria are relevant: external validity (or transferability) and reliability (or dependability). To have external validity, it must be possible to apply the findings of one exercise to other groups of people (spatial). To be reliable it must be possible to repeat the findings if the methods were replicated with the same or similar subjects in the same or similar context (temporal). Well-designed qualitative work may not pass tests of external validity and dependability when people seek to generalise from it. This is normally because such work has not been designed with generalisation in mind. By the same token, sample survey work in which the sampling has been excellent (good external validity) and which has been executed over a few seasons generating a time series (good reliability) may nonetheless be weak because of high non-sampling error (low credibility). This is because sample survey work using predetermined questionnaires may not be able to capture the complexity of particular situations. Sophisticated statistical and econometric analysis of the results of such surveys cannot correct this. Table 1 illustrates some of the strengths and weaknesses of the two approaches.

¹² These are: 1. spatial biases: urban, tarmac and roadside; 2. Project bias; 3. Person biases – elite bias, male bias, user and adopter bias, active, present and living biases; 4. Dry season biases; 5. Diplomatic biases: politeness and timidity; 6. Professional biases. (Chambers. R. 1983: 13 – 22)

Table 1: Strengths and weaknesses of sample survey and qualitative approaches

<i>Data collection</i>	<i>Strength</i>	<i>Weakness</i>
<i>Sample survey</i>	<ul style="list-style-type: none"> • Findings are generalisable • Allows precise estimates of quantities, rates, and proportions. • Allows strength of correlation between two or more variables to be estimated with known precision. 	<ul style="list-style-type: none"> • Difficult to elicit information on ill-defined, ambiguous or sensitive issues • May distort reality by forcing answers if not properly designed
<i>Qualitative study</i>	<ul style="list-style-type: none"> • Inherently suited to tackling idiosyncratic, ambiguous and sensitive issues • Allows nuanced understanding of social processes and trends 	<ul style="list-style-type: none"> • Difficult to generalise

There are two important implications of these different attributes of quantitative and qualitative methods:

- the first is the need for careful consideration of methodological choice, and
- the second is the benefit from “hybrid” approaches – where each methodological approach, if used appropriately, can complement the other, and together generate results of considerably more value (with depth and breadth).

The multifarious nature of the RNFE makes it both possible and necessary to use a combination of research methods. No single approach can provide all the answers. Careful selection, combination and sequencing of methodologies can result in more informative and reliable results. Different information sources should be used to triangulate results – taking account of the limitations associated with each.

Annex 1 illustrates this hybrid approach with a practical example from Uganda, showing how different methodologies can be combined, to exploit each to their best potential. It describes the information available from the nationwide household survey, which is similar to many of the Living Standards Measurement Surveys developed in the 1980s to look at household level impacts of changes in macro-economic policy. The annex highlights the sort of information typically missing from these surveys and proposes a mix of qualitative and quantitative tools to remedy this. (NRI, 2000).

5.4 Secondary data

In most countries there is a lot of existing information that yields insights into the RNFE. These data can be used to good effect, although there are certain limitations which need to be considered:

- they were collected for a different purpose – so are unlikely to focus precisely on the area of interest
- it is important to understand how data collection was approached *in practice* so that potential bias can be identified
- the data may be out of date – or may be subject to seasonal bias
- the data may be limited in geographical scope
- project reports and appraisals may sometimes contain relatively superficial assessments based on poor quality data or biased anecdotal evidence

Table 2 lists some potentially useful sources of secondary data on the RNFE. Whilst any single source may have numerous gaps, careful collation and comparison of data from several sources can provide extremely useful background information on the RNFE. It may also highlight key issues that are completely neglected in the existing information.

Household surveys

One particular category of secondary data is worth highlighting. Much recent analysis of the RNFE draws on secondary data sets (household surveys) that were not specifically designed for the particular RNFE hypotheses being addressed. Some were designed to collect macro-economic data. Their use is appealing because the data are already available and offer scope for statistical investigation of multiple interactions. Whilst selective econometric analysis of reliable data can provide useful information on the factors associated with RNFE participation, it is rarely possible to make any inferences about causality. Most of these large data sets tend to comprise cross-sectional data, which cannot capture the dynamic nature of the RNFE.

Ellis (1998) identifies several failings of cross-sectional “one-visit” data sets: large differences in reported income depending on time of year; failure to fully identify non-farm income; failure to identify whether household members are missing; difficulty in determining opportunity cost of self-employment. Further, if whole households have migrated, the data collected will be biased. Some studies have tried to correct for some of these problems by including recall (or longer recall) questions (e.g., Besley and Case, 1993) but this can create additional problems.

All this points to the attractions of panel data, analysis of which should permit a more dynamic perspective and demonstrate causality more clearly.

Table 2: The RNFE: some sources of secondary data.

<i>Data source</i>	<i>Scope</i>	<i>Comments</i>
National income data (and general economic reports)	Broad-brush indication of the size of different sectors	Categories sometimes too broad to be helpful – but nonetheless indicates structure of economy
SAMs	Multipliers, linkages	Not always available, often broad-brush
Household surveys	Large sample – often nationwide; data on income; poverty indicators; education	Collection of income data prejudices response; often ignores “minor” income sources; biased towards household head; one-shot questionnaire, relies on recall.
Participatory poverty assessments	Vary in their scope and rigour but usually cover several regions; information on poor people’s perceptions of poverty and its determinants	Potential problems of representativeness; permits investigation of more complex issues/processes; perceptions of poor (e.g., access to services) may point up poorly targeted interventions
Labour force surveys	Information on types of employment; perhaps skills; perhaps previous work	Coverage and unit of observation important because may neglect rural areas and informal sector
Department of youth, women, social affairs etc	Potential source of information on particular target groups (the poor, women, youth, elderly)	Information may be drawn from other sources – but might still have targeted information on e.g., gender issues
Health Department	Health infrastructure, public health, nutritional status	Can supplement other information on e.g., children or women’s ailments that affect women’s time use
Public utility/ infrastructure departments and projects	Infrastructure data; may have economic appraisals	Analysis in appraisals may be quite superficial
Education data	Literacy rates; school attendance; possibly language proficiency	Useful aggregate information on education status – particularly by age, gender, region
Local government; regional projects	Local information on demographics, infrastructure, commerce and services	Sometimes information not available until officially collated at national-level; but potentially more detailed locally
Business surveys, credit programmes, chambers of commerce	Micro-level information on types of enterprise, education and financial assets, numbers employed, reasons for failure	Often limited geographical coverage – and no information on people who were excluded from the scheme (or just not interested in it)
Theses etc (anthropology, economics, geography)	Very detailed information on discrete topics – adds considerable “texture”	Potential issues of bias and rigour; variable quality of output; may be very useful on sensitive topics such as corruption or prostitution
Project feasibility studies/ evaluations	Often contain information on infrastructure and economic sectors	Vary in scope; analysis often quite superficial
Transport companies	May have information on sub-sectors using transport; seasonality; direction of flow	Captures more formal activities; private companies may not be willing to divulge information

5.5 Measurement of the RNFE

Incomes

Typically when researchers want information on household income, they use consumption data as a proxy. This is because (1) questions about consumption are less intrusive and (2) consumption data are more stable over time (income data tends to fluctuate over the year)¹³. Consumption data may yield general information on poverty but it gives no clues to sources of incomes, and the returns to labour in the on-farm and off-farm sectors. When considering analysis of RNFE interactions with poverty, it is extremely useful to obtain information which allows distinctions to be made between income from: particular and overall non-farm activities, unearned income and farm income. Collection of reliable information on income shares can, however, be very tricky. Barrett and Reardon (2000) highlight the reasons why this is so:

- (a) there is often a diversity of income sources by several household members over several seasons of the year, making surveys complicated
- (b) the incomes are earned usually in the informal sector, sometimes for the purpose of avoiding regulations and taxes, and might therefore not be readily declared by respondents
- (c) often the units of income and costs are local and “non-standard” and payment is sometimes partially in-kind, making consistent valuation difficult
- (d) the respondents are frequently illiterate and rarely keep business or wage records that ease recall.

Barrett and Reardon (2000) propose that different questionnaires be used to collect data on wage-employment, self-employment, and migration income. As different members of the household participate in different income-generating activities, they suggest that each member of the household should be interviewed separately. Careful attention should be given to informal income sources – since these exchanges may be unrecorded, small, complicated and frequent – making accurate recall very difficult.

Quantitative surveys are potentially time-consuming and costly – particularly if care is taken to overcome the problems that Barrett and Reardon highlight. Properly administered, these questionnaires may provide useful data but, as noted in the previous section, they still leave room for considerable error. Qualitative methodologies using anthropological, sociological and economic concepts can be used in conjunction with questionnaire surveys. This will allow “breadth” i.e. generalisations from readily quantifiable variables, combined with “depth” from a nuanced investigation of sensitive issues. For example, a sub-set of respondents from a random sample used in a questionnaire survey can be used for qualitative research. It should be possible, moreover, to purposively select households and individuals for qualitative research, e.g.,

¹³ Admittedly, consumption data may also be subject to bias when respondents think that hand-outs might follow if they indicate that e.g., they do not own blankets and or cannot afford to buy soap, or (conversely) when there is a stigma attached to low consumption of particular items.

female headed, landless labourers, rural – rural migrants. Sample survey results can be used to classify households into relevant sub-groups that can then be investigated in more depth using qualitative techniques.

Activities and Assets

Activities and assets are difficult to measure for some of the same reasons that incomes are i.e., complexity, oversight and recall problems, dubious legality of certain activities and certain (financial) assets. In addition, there are further valuation difficulties in relation to assets (Barrett and Reardon, 2000: 27), and certain types of activity

- (a) the quantity of the asset may not be known accurately (this is common with land, for instance)
- (b) it may be difficult to value assets for which no local market exists
- (c) some assets are held in common with other households; describing a “share” is difficult
- (d) some of the most important assets - especially components of human capital (e.g., skills, health) and social capital (e.g., capacity to make claims on others) - are difficult to observe accurately
- (e) it is difficult to observe (in a survey) quality differentiation (e.g., soil quality, animal health).
- (f) There may be multiple activities undertaken by several household members over several seasons of the year.
- (g) Some activities are illegal or “shady” and are therefore not readily reported.
- (h) the activities are often undertaken part-time and mixed with other activities (such as operating a small-scale retail commerce business mixed with household chores and farm labour in a given season).

Again this points to the need for a combination of techniques. To illustrate this point, we can contrast the methods used by Fafchamps and Minten (1998) with those of Minde and Nakhumwa (1997). Both pairs of authors were trying to understand the activities of small traders. Fafchamps and Minten attempted to quantify social capital amongst agricultural traders and their clients in Madagascar using a questionnaire based sample survey for data collection and econometric techniques for analysis of data¹⁴.

The concept of social capital has several different interpretations. Fafchamps and Minten (1998) provide two definitions:

¹⁴ It is important to measure social capital because this can have important implications for the operation of labour markets and barriers to entering the RNFE. For example, certain employment opportunities may not require a great deal of capital, experience or skill, but a friendship or kinship relationship might be an important determinant of access. Fafchamps and Minten suggest that social capital can “...substitute for perfect markets and enable agents to economise on transactions costs.”

“The first meaning sees social capital as a ‘stock’ of trust and an emotional attachment to a group or society at large that facilitates the provision of public goods ... The second meaning sees social capital as an individual asset that benefits a single individual or firm; this meaning is sometimes referred to as social network capital to emphasise that agents derive benefits from knowing others with whom they form networks of interconnected agents.”

From the livelihoods perspective, both definitions are useful. Using regression analyses Fafchamps and Minten demonstrate that social network capital raises total sales and gross margins. They identify several quantifiable dimensions of social capital, including the number of traders that the respondent knows, the number of friends and family who can help with an enterprise, and the number of suppliers and clients that the respondent knows personally. They use regression analysis to determine the returns to these dimensions of social capital¹⁵.

Explicit consideration of social capital in quantitative analysis is a useful and relatively new development in research of this kind. The authors were aware, however, of problems of underreporting. For example, Fafchamps and Minten (1998) note that they were unable to trace traders who are the “least formal and have the least permanent form of operation”. This was because they used a standard two round sample survey and were thus unable to trace the more itinerant traders interviewed in the first round. The importance of social capital to this type of trader and vice versa is therefore not explored. Secondly, the authors also note that “Indo-Pakistani traders, who constitute a small minority of traders, tended to refuse participation to the survey”. The reasons for or implications of this are not discussed. However, experience suggests that traders can be very suspicious of researchers who record responses on forms or in writing.

All this points to the need to conduct less formal and more indirect methods such as participant observation and open-ended discussions in conjunction with the formal questionnaire type of approach. These types of approaches can be operationalised in a case-study format, and can yield much richer results, especially if they are used in a context of rapport-building and trust – which often takes time to establish.

More generally, accessing information on “shady” or illegal activities remains problematic with a standard sample survey methodology¹⁶. The fact that such activities are known to be widespread and important sources of income diversification in many rural areas has implications for the accuracy of – amongst other things – attempts to quantify social capital. It is certainly the case that gathering accurate information on certain types of activities requires a high degree of trust, and that this can only be

¹⁵ In his study of the non-farm economy in Mexico’s *ejidos*, Lanjouw (2000) uses a social capital index and found that *ejidos* with a higher score were significantly less likely to be poor. The index is taken from Pide (1998). “It is...constructed on the basis of a number of qualitative indicators of the strength of associative links between houses within an ejido (number and types of village meetings, examples and frequency of collective action, etc).

¹⁶ Which is formal, impersonal and where responses are written down in front of the respondent.

developed over time scales which are typically much longer than those set aside for relationship building in most sample surveys. Moreover, it is sometimes necessary to use covert methods or those that are overt but do not involve direct questioning or written recording.

The need to develop relationships over time is highlighted in a study of informal cross-border trade between Malawi and her neighbours (Minde and Nakhumwa (1997)). This activity is known to be a key source of livelihood diversification amongst rural people around Malawi's borders (Whiteside, 1998). Like Fafchamps and Minten, the authors were studying trading activities, in contrast however, they used more indirect methods and monitored over a full calendar year. Minde and Nakhumwa (1997: 13) note that: "...there was considerable suspicion about the monitors during the first two months of the survey because they were mistaken for either policemen, or customs personnel". This problem was tackled by the monitors actively distancing themselves from police and customs personnel and through a process of getting to know individual traders informally. "Because the traders tended to work along fixed routes, fixing the monitors allowed a rapport to develop between them, thereby facilitating collection of valid and accurate information" (ibid, p 13).

5.6 Insights and analytical methods for understanding RNFE participation

This section examines some of the insights and analytical methods that may be used to understand participation in the RNFE, namely:

- New Institutional Economics and modelling household behaviour in the context of market imperfections
- Logit, probit and tobit models
- The gini co-efficient and the Herfindahl index

Insights from New Institutional Economics

New Institutional Economics (NIE) offers a number of insights into the issues that affect participation in different economic activities. NIE retains the neoclassical assumptions of rational, maximising, self-interested economic agents but it puts much greater weight on other ways in which economic behaviour differs from the perfectly competitive model. Contributions to NIE come from different disciplinary backgrounds including economics, political economy, psychology, law and social anthropology.

The nature of market failure is a particular focus in NIE, stressing the role of:

- transaction costs
- risk
- imperfect information
- collective action
- institutions that minimise risk or transaction costs.

The NIE literature defines an “institution” as a commonly accepted set of formal and informal rules and norms that determine the co-ordination among individuals and structure their incentives towards a joint goal. Examples of institutions are markets, property rights, land tenure systems, and other systems of exchange that are determined by implicit contracts, rules or social norms.

Institutions are increasingly seen as the missing link in the analysis that underpinned the market reforms made by most African countries in the last 10-15 years. When their role is recognised, the disappointing commercial response to structural adjustment in many areas is easier to understand. Institutional analysis of markets focuses on how institutions develop to facilitate exchange. When these institutions are weak it may imply a role for government – not necessarily in marketing (as with the former parastatals) but perhaps in the other interventions to facilitate commercial development (strengthening contract law, and enforcement mechanisms, for instance).

The focus on market failure has particular relevance for development of the RNFE. Rural economies are often highly imperfect - largely because of risk and imperfect

information problems. Labour markets are often very segmented, reflecting social capital as well as the more obvious factors that are easier to influence from the outside (education, skills and information). Market failure in rural credit is pervasive because of covariance, poor information and high transaction costs.

If understanding institutions is the aim, there is considerable benefit from combining qualitative and quantitative research methods. The way in which institutions affect economic activity is often quite subtle – and not immediately apparent. It will often require careful participatory research to identify those institutions that are relevant, exactly how they work, and how (or whether) their effects can be statistically modelled.

Modelling household behaviour in the context of market imperfections

Static models of household behaviour under market imperfections stress the influence of pervasive risks, limited information and imperfect markets. Models which account for market failure tend to stress the following determinants of household behaviour: asset endowments with multiple dimensions (e.g. human, physical, institutional and social capital); transaction costs in accessing markets; credit constraints; risk aversion; and limited access to risk coping instruments (credit, mutual insurance). These issues have a resonance for the RNFE, particularly for the poor, whose livelihood decisions reflect complex interdependent factors.

Almost any income-generating activity requires some level of set-up costs or minimum asset endowments. Conceptually these set-up costs can be modelled as comprising a fixed cost and a subset of variable inputs (e.g., see Eswaran and Kotwal, 1986, and de Janvry *et al.*, 1998). Those households with resources below the fixed entry cost threshold are in a poverty trap with underused resources, which cannot be consumed or sold¹⁷. This may be important for the development of effective RNFE policy interventions as asset thresholds could be reached through transfers or loans. (There is an alternative argument, however, that the poor rarely have resources that are “underused”. Even savings, that appear to be idle, may be precautionary savings held as insurance, and so are not, in fact, available for investment).

Some household models focus on the accumulation of financial, natural resource, and human capital assets. Traditionally, household asset accumulation has been explained by the investment motive: with access to multiple investment opportunities, households adjust the relative amounts of investment in different types of capital to keep the rates of return in step, or to maximise the return to their portfolio. Households engage in inter-temporal asset accumulation behaviour to optimise the trade-off between consumption today and in the future (i.e., to smooth consumption); the success or failure of rural households to some extent depends on their ability to accumulate productive assets. Although asset accumulation is a dynamic issue, most of the empirical literature on the

¹⁷ For example, Deininger and Okidi (2000) in their study of rural households: incomes, productivity and non-farm enterprise in Uganda found that new RNF trade enterprises did not seem to require large physical assets, but that MSME start-ups were critically dependent on a minimum level of education.

determinants of investment in different assets, or access to RNF employment has been based on cross-sectional data, in part due to the lack of suitable panel data.

Reardon *et al.*, 2000, argue that poor risk-averse households will have a greater incentive to diversify (to spread risk), but lack the capacity to do so if there are high entry barriers and credit markets do not function well. The authors consider both the risk incentive and the available work to explain the different relationships observed between income level and diversification in different continents. In Asia and much of Latin America they argue that diversification is greatest amongst the rich (drawn to remunerative high entry barrier sectors) and the poor (drawn to spread risk by taking up non-farm employment with low entry barriers). Middle-income groups specialise in agriculture – particularly in the more productive Green Revolution areas. By contrast, although there is demand for non-farm diversification by the poor in Africa, there is a scarcity of low entry barrier, labour-intensive jobs.

Logit, probit and tobit models

Multivariate analysis (particularly *logit*, *probit* and *tobit* models¹⁸) is widely-used to provide an indication of whether the motivation to enter the RNFE is *demand-pull* or *distress-push*. The most commonly used quantitative models are the *logit* and *probit* models (see Maddala, 1987 for a full explanation)¹⁹. These models specify a functional relationship between the probability of (e.g.,) participating in the RNFE and various explanatory variables. Cross-sectional data are typically used to estimate the correlation between numerous potential explanatory variables and participation in specified RNF activities. Note that although these models are often presented as if they explain causality, this is rarely the case. Mostly they are only capable of estimating the correlates between the variables – and say nothing about the direction of causality.

Hossain *et al.* (1994) used a *probit* model to analyse participation in the RNFE in Bangladesh. Cross sectional data set for 1245 households (for which income and employment data were collected) were used. Employment in industry, transport, and construction tended to be associated with higher levels of poverty, whilst those with larger landholdings and higher education levels had a higher probability of participating in trading and service activities. They also found that the older household heads were less likely to participate in the RNFE (except in rural construction); and that the opposite was true for younger heads of households.

¹⁸ For example, the logistic model (similar to linear regression models) is suited to models where the dependent variable is dichotomous (can be divided into categories using a binary codification). Logistic regression coefficients can be used to estimate odds-ratios for each of the independent variables in a model. Logistic regression is applicable to a broad range of research situations. For example, which household characteristics are key factors for participation in the RNFE? Given a sample of respondents with measurements on family size, dependency ratio, education and gender, a model could be formulated using the four household variables to predict the probability of participation in the RNFE and to predict how this would change with a change in any of the variables.

¹⁹ G.S. Maddala, Limited dependence and qualitative variables in econometrics (1987). *Econometric Society Monograph 3*, CUP.

Abdulai and Delgado (1999, p...) utilised a bivariate *probit* model to:

“...estimate jointly, for a sample of men and women married to each other and living on farms in a rural area of Ghana, the non-independent determinants of the decision of husbands and wives to participate in cash-income-oriented non-farm work.”²⁰

They found that the probability of participation in non-farm work increases with age up to 33 for men and 30 for women, and is thereafter inversely related to age. A higher level of education is positively correlated with a higher probability of participation for both husbands and wives in the RNFE, and is higher for wives than husbands. However, a higher level of educational attainment for a wife lessens the probability of the husband participating in the RNFE. Women’s participation in non-farm work was more sensitive to a lack of household cash than their husbands’ participation.

Similarly, Mishra and Goodwin’s (1997) study of farm income variability and how this affects the supply of off-farm labour²¹ is pertinent as they also attempt to test whether spouses make joint decisions about their off-farm employment activities. Although the authors consider US farms and decision-making in efficiently functioning markets, the methodological approaches have wider application. Since some individuals will not participate in the RNFE, the sample may be “censored,” requiring, for example, either a Heckman or *tobit* model. To account for the possible joint decisions of a husband and wife requires simultaneous equation indicators such as bootstrapping. The authors found that the off-farm labour supply of farmers was positively correlated with the riskiness of farm incomes; that farmers and their spouses with more farming experience are less likely to work off-farm; and that off-farm labour supply was correlated with off-farm experience.

²⁰ Abdulai and Delgado (1999) Determinants of non-farm earnings of farm-based husbands and wives in northern Ghana, *American Journal of Agricultural Economics* 81: 117-130.

²¹ Mishra and Goodwin (1997) Farm income variability and the supply of off-farm labour, *American Journal of Agricultural Economics* 79: 880-887.

6. CONCLUSIONS

The role of the rural non-farm economy (RNFE) in the livelihoods of the rural poor is increasingly acknowledged. A better understanding of the factors and processes that affect the ability of the poor to engage in activities that are more sustainable and more remunerative will help in design of policies and interventions which increase the pro-poorness of the RNFE. This paper has sought to provide insights into the way that the RNFE operates and to give tips and suggestions on the pros and cons of various approaches to studying and measuring this aspect of the rural economy, with a particular focus on the participation of the poor and policy options.

In conclusion, the final point that should be stressed is the institutional vacuum that presently exists for policy and research on the rural non-farm economy. Whilst there is strong interest in the RNFE and suitable poverty-focused policy prescriptions, in practice, difficulties may arise within developing country administrative structures and within donor organisations, in allocating (or assuming) responsibility for work in this area. It straddles many interest groups – but fits securely with none. So, departments concerned with agriculture (and hence the rural economy), poverty alleviation, small business development, and social issues, may all have a strong interest in the RNFE – but none provides an obvious institutional home. A notable exception, and an opportunity, may arise in the context of decentralisation. It has long been argued that decentralisation makes it easier for different departments to co-operate, and to focus more sharply on locally important issues – conditions that seem to create an opportunity for taking forward an RNFE agenda.

In the meantime, and whether working in more or less decentralised contexts, development organisations, governments and researchers seeking to develop work on the RNFE will find that this generates strong interest. This in itself creates a welcome opportunity to bring different perspectives to bear on these important issues – and as the work acquires a higher profile, the institutional issue may be resolved through mandate, through local-level co-operation, or through the development of effective networking.

REFERENCES

- Abdulai and Delgado, C (1999) Determinants of non-farm earnings of farm-based husbands and wives in northern Ghana. *American Journal of Agricultural Economics* 81: 117-130.
- Adams Jr., R.H., and Alderman, H., (1992). Sources of income inequality in rural Pakistan: a decomposition analysis. *Oxford Bulletin of Economics and Statistics* 54 (November): 591: 608.
- Barrett, C and Reardon T (2000) *Asset, activity and income diversification among African agriculturists: some practical issues*, (unpublished mimeo).
- Basant, R. (1994) "Diversification of Economic Activities in Rural Gujarat: Some Evidence at the Micro Level", Chapter 4 in Basant, R., Kumar, B.L. and R. Parthasarthy (eds) *Non-Agricultural Employment in Rural Gujarat: Patterns and Trends*, Report of a project sponsored by the Industrial Development Bank of India. Ahmedabad: Gujarat Institute of development Research, February 1994.
- Besley, T. and S. Coate. (1993) The economics of rotating savings and credit associations. *American Economic Review* 82 (1): 792-810.
- Breitschopf, B and Schrieder, G. (1999) Rural development in transition economies – The case of two counties in Romania, *48th International Atlantic Economic Conference*, Montreal, October 7-10, 1999.
- Carney, D., 1998, (ed) *Sustainable rural livelihoods: what contribution can we make?*. Department for International Development: London.
- Chambers, R (1983) *Rural Development: Putting the Last First* (Longman)
- de Janvry, A, Key, N, and Sadoulet, E (1997). Agricultural and rural Development Policy in Latin America: New Directions and Challenges. University of California at Berkeley, Working Paper No 815.
- Deininger, K and Okidi, J (2000). Rural Households: Incomes, productivity and non-farm enterprise. World Bank, Washington DC, mimeo.
- Ellis, F, (1999), *Rural livelihood diversity in developing countries: evidence and policy implications*. Natural Resource Perspectives, Number 40 (April). London: Overseas Development Institute.

- Ellis, F., (2000a) The determinants of rural livelihood diversification in developing countries, *Journal of Agricultural Economics*, 51(2): 289-301.
- Ellis, F (2000b) *Rural Livelihoods and Diversity in Developing Countries* (OUP).
- Ellis F (1998) *Survey Article: Household Strategies and Rural Livelihood Diversification in Developing Countries*, *Journal of Agricultural Economics* 51(2): 289 – 301.
- Ellis, F., and Hussein, K., 1998, *A comparative review of rural livelihood studies*. Paper prepared for NRI (unpublished).
- Eswaran, M., and Kotwal, A. (1985) A theory of contractual structure in agriculture, *American Economic Review*, 75: 352-67.
- Fafchamps, M and Minten B (1998) *Returns to Social Capital Amongst Traders* Markets and Structural Studies Division Discussion Paper 23 IFPRI, Washington DC.
- FAO (1998). *Rural Non-Farm Income in Developing Countries*, Part III of The state of food and agriculture, 1998, Rome: FAO.
- Gillis, M., Perkins, D.H., Roemer, M., and D.R. Snodgrass. (1996). *Economics of development*. 4th Edition. New York, NY, USA: Norton & Company.
- Gordon A (1999) *Non Farm Rural Livelihoods* NRI Policy Series 4.
- Haggblade, S, Hazell P and Brown (1989) *Farm Non-Farm Linkages in Rural Sub-Saharan Africa* *World Development* 17(1989): 1173 – 1201.
- Islam, N., (1997), *The non-farm sector and rural development – review of issues and evidence*. Food, Agriculture and the Environment Discussion Paper 22. Washington DC: IFPRI.
- Lanjouw, P (1996). Rural non-agricultural employment and poverty in Latin America: the experience of Ecuador. Mimeo, Washington, The World Bank.
- Lanjouw P (1999) *The Rural Non-Farm Sector. A Note on Policy Options*. Feb. 1999 (mimeo).
- Lanjouw, P (2000), Poverty and the non-farm economy in Mexico's ejidos: 1994-1997. *World Development*.
- Lanjouw, J., and Lanjouw, P. (1997) The rural non-farm sector: An update (unpublished mimeo).

Lanjouw, P and Stern, N (1993). Markets, opportunities and changes in inequality in Palanpur 1957-1984, in A Braverman, K Hoff, and J Stiglitz (eds) *The economics of rural organisation: theory, practice and policy*. New York: Oxford University Press.

Lincoln and Guba (1985) *Naturalistic Enquiry* (Sage)

G.S. Maddala, Limited dependence and qualitative variables in econometrics (1987). *Econometric Society Monograph 3*, CUP.

Matlon, P. (1979) Income distribution among farmers in northern Nigeria. Africa Rural Economy Paper No 8. Michigan State University.

Minde and Nankhumwa (1997) *Informal Cross-Border Trade Between Malawi and Her Neighbouring Countries*. Report for Technoserve Inc., Nairobi, Kenya, March 1997
Funded by US AID Regional Economic Development Support Office for East and Southern Africa (REDSO/ESA) and executed by Agricultural Policy Research Unit (APRU) Bunda College of Agriculture, University of Malawi.

Mishra and Goodwin (1997) Farm income variability and the supply of off-farm labour, *American Journal of Agricultural Economics* 79: 880-887).

Natural Resources Institute (2000), Rural Non-farm Economy – Policy Development Program Proposal. Prepared by NRI on behalf of DFID. DFID/World Bank Rural Development Initiative.

Pide, C.,(1998) “Social capital in the Ejidos”, mimeo, LCSES, the World Bank.

Reardon, T., Crawford, E., and Kelly, V (1994). Links between non-farm income and farm investment in African households: adding the capital market perspective. *American Journal of Agricultural Economics*. 76 (5) December: 1172-1176.

Reardon, T., Taylor, J.E., Stamoulis, K., Lanjouw, P., and Balisacan, A., Effects of non-farm employment on rural income inequality in developing countries: an investment perspective. *Journal of Agricultural Economics*. May 2000 (vol 51, no 2)

Swift, J. (1998) Factors influencing the dynamics of livelihood diversification and rural non-farm employment in time and space. (unpublished mimeo).

Unni, J. (1997) Non-Agricultural Employment, Livelihoods and Poverty in Rural India, Working Paper No. 88, Gujarat Institute of Development Research, Ahmedabad, India.

Vijverberg, W.P.M., 1995. Returns to schooling in non-farm self-employment: an econometric case study of Ghana. *World Development* 23 (July): 1215-1227.

Whiteside, M (1998) *When the Whole is More Than the Sum of The Parts: The Effect of Cross-Border Interactions on Livelihood Security in Southern Malawi and Northern Mozambique*. Oxford: Oxfam UK.

ANNEX 1: THE USE OF QUANTITATIVE AND QUALITATIVE DATA TO INVESTIGATE CONSTRAINTS FACED BY THE POOR IN ACCESSING NON-FARM RURAL EMPLOYMENT IN UGANDA²²

A. Introduction

Existing data, supplemented with additional qualitative and quantitative research, can be used to develop a much richer understanding of the processes that determine participation in rural non-farm employment (self-employment and wage employment). The potential offered by the existing data, and the lines of investigation offered by their analysis or by further field research, are explored here. Although surveys conducted in Uganda are described here, these approaches have more generic application. The examples given should not be considered exhaustive.

B. Theoretical considerations

Neo-classical economic theory suggests that *ceteris paribus* farm household labour is allocated between farm and non-farm activities such that the marginal value of farm labour equals the wage rates of non-farm activities. Thus, individuals are willing to participate in non-farm work when the marginal value of farm labour (reservation wage) is less than the non-farm wage rate they command. In theory, this implies that poorer households have a greater incentive to diversify their income sources into non-farm activities because the marginal value of labour in poorer households is lower.

However, barriers to entry in the non-farm labour market may limit the capacity of poorer households to diversify their income sources into non-farm activities. Liquidity and credit constraints may place more affluent households at a comparative advantage in being able to diversify their activities. If there is rationing in the labour market, a farm household may not participate in the non-farm labour market even if the marginal value of labour (reservation wage) is lower than the marginal value of non-farm labour. Thus the actual participation of a household in the RNFE depends on the incentive and the capacity to participate.

The farm household's decision-making and ultimate choice may be viewed as a 2-stage process. A farm household is subject to demand factors e.g. if the reservation wage is lower than the prevailing market non-farm wage rate net of commuting costs, a household will have an incentive to participate in non-farm activities. However, participation in non-farm employment may be constrained if there is rationing or relatively high transaction costs in the labour market (e.g., in obtaining credit to meet start-up costs). (See de Janvry *et al.*, 1991, for a discussion of failure in rural labour markets).

²² This annex is drawn from an NRI research proposal (NRI, 2000).

If the reservation wage rate is less than the prevailing non-farm wage rate, a farm household may choose among the available non-farm activities depending on their relative wage rates. This decision and hence the type of RNFE activity “chosen” may be affected by, for example, risk aversion and credit availability. (E.g. a risk-averse household may adopt RNFE activities whose income is negatively correlated with agricultural income (Newbery and Stiglitz, 1981). Poorly paid but guaranteed employment may be preferred to higher paid less reliable activities. Similarly, households that face significant credit constraints will tend to adopt RNFE activities that require less initial capital).

Variables that raise the reservation wage will reduce the probability and level of participation in non-farm work, in contrast to variables that raise the non-farm wage rate and increase participation.

Decision-making at the household level is also determined by a number of other factors – which may facilitate or constrain access to non-farm employment. Such factors relate to the composition of the household and include: the availability of labour; the existing organisation of production, consumption and (re)distribution at inter- and intra-household levels; and the extent to which households and their members are associated with a variety of formal and informal social networks and social capital.

Issues relating to the composition of the household affect decision-making in different ways. There are gender implications, in that men and women, husbands and wives, may have different and sometimes competing interests and livelihood priorities. Such differentiation at the household level may also reflect differences in age, status and educational attainment. These social factors have a bearing on access to non-farm opportunities in different ways. A household’s livelihood agenda is not necessarily a collective one and different members of the same household may contribute differentially to any stated collective goal. The contributions that each member of a household makes to the livelihood activities of a household unit may at times both conflict with and be complementary to corporate household livelihoods. The crucial research questions will, then, focus on who does what and under what circumstances and how these activities in the non-farm sector contribute to a household’s or individual’s food, income and broader livelihood security.

C. Building on existing data sets with qualitative research

The intention in each field site is to use a complementary and iterative mix of existing and new quantitative and qualitative data. Thus, for example, analysis of existing data may help identify questions to pursue through initial qualitative research. These results may then inform the development of a quantitative survey, whose analysis may in turn highlight issues that can be most effectively resolved through further qualitative investigation. Data collection to supplement that already available falls into two categories:

- information on complex processes, which is ill-suited to collection by formal questionnaire, and
- information on various factors relevant to the present research, that could be collected using formal questionnaires, but has not been included (or adequately covered) in the surveys conducted to date.

Many countries now conduct household surveys that have most or some elements in common with the Living Standards Measurement Surveys. These provide a wealth of data that can inform this research by providing a baseline and pointing to areas where more information is needed. The data available in Uganda is discussed here, by way of an illustration of what is available and how it can be used. The illustrative nature of what follows is stressed. In practice, the details of the in-country research will depend on analysis of the available country-specific data and the results of preliminary qualitative research.

The Government of Uganda conducts a series of household surveys aimed at monitoring living standards. The first of these was conducted in 1989. The largest survey was conducted in 1992 – the Integrated Household Survey (henceforth IHS). It was large both in terms of sample size (9,924 households) and scope (covering consumption, income, employment, health, education, time use, fertility and anthropometrics etc.). The IHS was conducted between February 1992 and March 1993. It omitted some rural areas of Kabale district but otherwise has reasonably comprehensive national coverage. The IHS was repeated in 1999, and data are likely to be available from the end of 2000. Other household or community surveys are sometimes added to the general survey covering, for instance, small enterprise or access to services.

Since 1992, there has been an annual Monitoring Survey (MS) which covers approximately 5,000 households, and has a shortened questionnaire, which focuses mainly on consumption data. The MS is designed principally to provide information on changes in poverty measured by reference to private household consumption over time in Uganda. MS-4 (the 4th monitoring survey 03/97-02/98) is comprised of 6,494 households (and omits Kitgum, Kasese, Gulu and Bundibugyo regions). MS-4 has no panel element (this was intended but broke down), some qualitative measurement of poverty and a labour-force questionnaire.

Although it provides a lot of detail, the IHS 1992 does not have data on nationality and ethnicity, language, religion, aids, seasonal employment, employment history, pensions, social services, and informal non-farm activities. Those non-farm activities that are recorded are listed according to an industry code, with information on capital invested, number of workers, assets, expenditures, revenue and income. Employment *access* issues per se are not addressed. Nor is there sufficient detail on the linkages between various livelihood components. For example, there is provision to collect data on educational attainments for household members, but the questionnaires cannot adequately explore how educational attainment has led to or indeed hindered access to non-farm opportunities. This is an area that could be addressed through qualitative field research.

This would provide a much richer picture of the processes determining access to employment, and permit the development of hypotheses for further testing in specific country contexts.

Another factor that affects access to non-farm employment relates to the various social networks and formal and informal associations to which the rural poor belong. It is difficult to capture the significance of this factor using a formal questionnaire approach. The NRI research on access seeks to both quantify the range of functioning social linkages and the extent to which they provide both opportunities and constraints for gaining access to non-farm employment. Social capital issues can be examined as a series of interlocking relationships and transactions that may sequentially lead to better access. For example, if an uncle pays for the education of a nephew which ultimately enables the nephew to secure gainful non-farm employment, then this relationship has provided an opportunity for enhancing a non-farm livelihood option. There may in these circumstances be a trade-off, however, in that the household who benefits from the education of a son, may be indebted to take in, to feed and clothe the uncle's daughter (say). This may have a negative effect on the household's food security in the short term, but later provide an additional source of labour or income from an adult niece who contributes to the household income, perhaps through non-farm employment.

This project aims to explore the extent to which interlocking social transactions of this nature can be assessed qualitatively and quantified. A range of PRA techniques and qualitative open-ended questionnaires will be used initially to gauge the extent to which these transactions are important for access. Next, questionnaires will be used to quantify these transactions. The research will adapt methodologies developed by NRI to extract information on social capital at the micro-level, and the significance of these linkages for access to key livelihood resources.

D. Conducting additional quantitative research

In Uganda, the NRI research could complement the IHS database by focusing in more detail on the following factors: education, household composition, gender, age and status criteria and the relationship between these and access to non-farm enterprise activities. The modalities and cost of conducting quantitative surveys will need to be explored in-country (for instance, it may be possible to add questionnaires to those already being used in existing monitoring surveys). Ideally, additional surveys would cover households selected at random from a stratified sample. In Uganda, this would follow the IHS sampling procedure. It may be possible to identify households who have previously taken part in the MS or IHS survey exercises.

The initial qualitative field research may help identify an appropriate categorisation for non-farm employment. This is important since different kinds of non-farm employment are circumscribed by different access constraints. The following offers a hypothetical example of the kind of dis-aggregation possible:

- Manual non-farm work (private and public construction works, in peri-urban and rural areas, perhaps involving some migration);
- Non-manual (skilled) non-farm work (masonry, carpentry etc.); and
- Non-farm self-employment (petty trade, handicrafts, selling wood, charcoal, fruit, local brewing etc.).

Information on “participation rates” for different non-farm activities is important. Non-farm participation rates are based on the percentage of the total sample employed in different types of work by season and region/districts. The NRI project will contribute to an improved understanding of seasonal employment issues – an aspect that is poorly covered by most of the LSMS panel data sets. The research aims to capture seasonal components and dynamics of labour use, supply and employment patterns in the non-farm rural economy.

A farm household may participate in a number of RNFE activities. Similarly several members of a household may participate in the same or different RNFE activities. A wife and husband may (*ex ante*) choose different non-farm activities whose rewards are negatively correlated in order to stabilise their household income. Farm households can also work in both waged employment and non-farm self-employment at different times of the year depending on the availability of jobs. Thus, a given household is likely to have at least two types of non-farm occupation, as part of a reasonably dynamic (probably seasonal) labour market. The NRI survey aims to collect more information on multiple income sources than currently covered by the LSMS type surveys.

The IHS 1992 and MS-4 could be utilised to estimate a Gini decomposition to analyse the contribution of alternative income sources on the overall income inequality or estimates of poverty lines (Newman and Canagarajah, 1999; and Appleton *et al.*, 1999)²³.

Consideration could be given to the development of two sets of models to analyse non-farm employment: a) non-farm labour supply of farm households and b) farm households’ choice between non-farm activities. The first model involves specifying the hourly supply of labour in various non-farm activities, namely waged employment and non-farm self-employment in order to identify key factors and the relative importance of factors that determine them. This could well prove unworkable, however, because it would require the specification of equations that determine labour hours supplied to different RNFE activities at different wage rates, conditional on individual participation. Such data are unlikely to be available or amenable to reliable collection.

²³ In Newman and Canagarajah’s paper, agricultural services and agriculture are combined as a variable for sectoral RNFE participation. It would be useful to disaggregate this as components of agricultural service provision may include important RNFE activities, e.g. milling, agri-food processing etc. Appleton *et al.* 1999, use the IHS (and Newman and Canagarajah, 1999, use the MS-4), taking consumption data and mean per capita expenditure as a proxy for income. This has often been done with both time series and cross sectional work from household budget surveys for example in models measuring household income, consumption and expenditure behaviour (Almost Ideal Demand System, Linear Expenditure models etc.)

The second model, on household choice between non-farm activities, might differentiate between households as follows: a) not participating in non-farm activities; b) only participating in non-farm activities; c) only participating in non-farm self-employment activities; and d) participating in both non-farm wage and self-employment. This can be modelled using a multinomial logit model (Maddala, 1986).

The multinomial logit model may be utilised to identify the factors associated with different farm households' choice between non-farm wage employment and self-employment. Explanatory variables typically used in such logits or probits are: age, educational status (according to gender), location (district), year, family size, number of dependants, livestock wealth, ownership of draught animals (or animals for transportation services), owned equipment, land, farm income, non-labour income and wage rates received by the key members of the household e.g. husband and wife, or single parent households. The IHS does not collect the data in sufficient detail on a number of key explanatory variables (education, gender, multifarious sources of income) and social capital (which may be treated as dummy variables but include culture, nationality and ethnicity, language, religion, aids). For example, certain employment opportunities may not require a great deal of capital, experience or skill, but a friendship or kinship relationship might be an important determinant of access. However, it may be possible to add such questions to future rounds of the IHS (on a national basis or just for case study districts).

E. Conducting research simultaneously to engage the policy process

The approach suggested here would involve a series of stages, each providing the opportunity to discuss methods, results and key issues emerging. Thus:

- initial review and analysis of secondary data to identify gaps and decide on a checklist for initial field investigation using qualitative methods
- subsequent review of the qualitative research results to determine how best to follow-up, and the appropriate choice and scale of survey instrument
- further field research, including a questionnaire component, with subsequent analysis
- participatory review of the further research results – to draw conclusions and/or identify remaining unresolved issues requiring further follow-up.

It is intended that the project should engage the policy process – to foster ownership, relevance and uptake of the research results, and also to help develop an institutional “home” for the non-farm economy. The iterative methodology proposed will complement the policy process. Each stage in the research will provide an opportunity to discuss the issues to be investigated and the preliminary results available. A series of informal research workshops will be held to brainstorm on the on-going work – in which policy-makers, donors and researchers will be encouraged to participate. Also, since issues or solutions to access constraints may arise principally at the local-level, the research and analysis will be conducted in close collaboration with a parallel project working on issues of local governance and how this affects the development of the RNFE.

References

- Appleton, S. with Emwanu, T., Kagugube, J., and Muwonge, J., (1999) *Changes in poverty in Uganda 1992: 1997*, Working Paper Series 99/22, Oxford: Centre for the Study of African Economies.
- De Janvry, A., Fafchamps M., and Sadoulet, E., (1991), Peasant Household Behaviour with missing markets: some paradoxes explained. *Economic Journal*. 101, 1400: 1417
- Maddala, G S (1987) Limited dependence and qualitative variables in econometrics. *Econometric Society Monograph 3*, CUP.
- Newbery, D and Stiglitz, J (1981) *The theory of commodity price stabilization: A study of the economics of risk*. Oxford, Clarendon Press.
- Newman, C and Canagarajah, S., (1999), Non-farm employment, poverty and gender linkages: evidence from Ghana and Uganda. Mimeo (working draft). World Bank.



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