CHAPTER TWO

RURAL NON FARM SECTOR:
NATURE, SIGNIFICANCE AND DETERMINANTS

The Rural Non-Farm Sector (RNFS) which was long neglected by policy makers has attracted considerable attention in recent years. There is new found enthusiasm that the non-farm economy may hold the key to the problems of rural poverty and unemployment in the third world countries. This shift in policy perspective can be attributed to a number of factors. Firstly, it is being increasingly realised that rural households in the developing world do not depend solely on agriculture for livelihood and in fact, an increasing share of rural incomes is derived from non-farm sources. Evidence from a wide array of rural household surveys suggest that non-farm income accounts for about thirty five percent of rural income in Africa and fifty percent in Asia and Latin America( Haggblade et al, 2007). Secondly, the agricultural sector offers limited promise for generation of additional employment for the growing rural work force as evidenced by the growing number of marginal farmers and lacklustre agricultural performance in many countries. Thirdly, the expansion of the non-farm economy seems to offer the most viable solution to the problems of outmigration from rural areas and the resultant congestion in urban centres. Therefore, in the post liberalisation phase a lot of research has been directed towards understanding the dynamics and growth impulses of the rural non-farm sector in developing countries. The literature review outlined below encapsulates the theoretical and empirical thinking on the subject.

2.1 NONFARM EMPLOYMENT AND RURAL POVERTY REDUCTION: THEORETICAL AND EMPIRICAL UNDERPINNINGS

As poverty in developing countries essentially has a rural face, the RNFS is often hailed as a magic bullet for alleviation of chronic poverty and elimination of food insecurity in rural areas across the developing world. However, it is imperative to explore the mechanisms by which expansion of the nonfarm activities can result in poverty reduction. Lanjouw (2007) maintains that the relation between nonfarm expansion and rural poverty reduction is not automatic and the outcome depends on
the transmission mechanisms, which can work in three ways. Firstly, given the heterogeneity within the rural nonfarm sectors in terms of the existence of both high return and low return activities, if the poor face any constraints in participating in the more remunerative occupations, the poverty alleviating impact of nonfarm growth is attenuated. Secondly, the role of the nonfarm sector in poverty alleviation depends to a great extent on its ability to function as a safety net for the poor in situations of droughts, natural calamities, sickness or injury. In such circumstances, even if a household participates in low return nonfarm activities, it may prevent a further fall in income or a deepening of the current poverty level. Thirdly, the impact of the growth of the RNFS on rural poverty may be indirect. This can happen when rising demand for labour in RNFS exerts an upward pressure on wage rates in agriculture which in turn has strong negative correlation with rural poverty.

A study on the role of rural enterprises in poverty reduction in Asia and Pacific region by IFAD (2002), notes that non-farm sources of income are important to the rural poor for two reasons. First, the direct agricultural income of the poor is not enough to sustain their livelihoods, either because of landlessness or because the land they own or lease is insufficient. Second, wage employment in agriculture is highly seasonal, so that the poor value non-farm sources as employment supplementation. As most rural nonfarm activities require little capital and generate more employment per unit of capital than farm activities do, they are quite suited to a poor household’s requirements. Non-farm income is also important to the poor as a means to help stabilize household income in years of natural disasters, such as drought years.

Country wide experiences reveal that increase in nonfarm participation in general has a favourable impact on poverty reduction. In China, spectacular success in reduction of rural poverty was possible through the expansion of Town and Village Enterprises (TVEs) since the late 1970s. In only 21 years (1980 to 2001), the incidence of rural poverty fell from 76% to 13% (Ravallion and Chen, 2004). This period was also marked by the shift of rural workers from agriculture to the nonfarm sector as the number of nonfarm workers increased from 28.3 to 171.7 million and their percentage in the rural population from 9.2% to 35.1% (Janvry, 2005). Nonfarm participation was also found to exert a positive impact on poverty reduction in rural Ecuador (Lanjouw, 1999). Kijma et.al (2005) in their study on the interrelationships
among poverty, agricultural labour and nonfarm employment in rural India on the basis of NSS data found that expansion of casual nonfarm employment is strongly correlated with growth in agricultural wage rates. Thus, the tightening of the labour market through the siphoning off of workers out of agricultural labour into casual nonfarm employment puts pressure on agricultural wages, thereby helping to reduce overall poverty levels. A similar indirect impact of nonfarm expansion was observed in Bangladesh (Hossain, 2004). However, as pointed out by Lanjouw (2007), “Policy makers should not presume that an expanding RNFE will necessarily translate into declining poverty. To strengthen the direct impact of rural nonfarm growth on poverty reduction, policy makers will need to expand education for the rural poor and work to remove the various socio economic barriers that currently limit their entry into more lucrative nonfarm professions.”

2.2 DYNAMICS OF RURAL NON FARM EMPLOYMENT (RNFE): FARM –NONFARM LINKAGES

The existing structure of RNFS is an outcome of the economic transformation process that proceeded for many generations though at varying speeds in different locations. Thus, before the onset of development, the countryside in developing nations can be conceived as populated by primarily agricultural households producing for themselves most of the farm and nonfarm goods and services they require. Trade and commerce remain marginal given the subsistence orientation of agriculture, the prevailing low-input farm technologies, and the limited transport and communications infrastructure in rural areas. In this setting, patterns of growth in the RNFS may unfold differently in response to varying growth impulses in different regions. However, agriculture as the largest employer in rural areas, the largest income generator, and the largest purveyor of raw materials, clearly plays a predominant early role in influencing the size and structure of the RNFE (Haggblade et. al, 2002). However, farm –nonfarm linkages can evolve in varied ways.

The Growth Linkage theory propounded by Mellor (1976) posits that in regions where new agricultural technology and modern farm inputs become available, a dynamic agriculture stimulates growth of RNFE through a number of key production and consumption linkages. While backward production linkages emerge from farmers’ growing demand for inputs from the non-agricultural sector, forward linkages develop through the increased need for agro-processing. On the other
hand, rising incomes of farmers and agricultural labourers as a consequence of rising farm productivity stimulate the demand for locally produced goods and services thereby resulting in consumption linkages. Also increased agricultural productivity and surpluses in the hands of large commercial farms make available greater resources for investment in nonfarm activities. To complete the cycle, growth in the non-farm sector is expected to stimulate still further growth in agricultural productivity via lower input costs (backward linkages), profits invested back into agriculture, and technological change. A virtuous link is thus postulated to emerge between agricultural development and rural employment and income diversification.

The composition of rural non-farm activity perceptively changes in these buoyant agricultural settings. Household manufacturing typically shrinks over time as rising real wages raises the opportunity cost of labour thereby making low-return activities non-viable. On the other hand, there occurs an expansion of higher return non-farm activities such as mechanical milling, transport, commerce, personal, health and educational services. Poor households benefit both directly and indirectly from such a situation. Growing consumer demand directly opens up avenues for self-employment especially in rural trade and commerce. Indirectly, rising rural wage rates for unskilled labour clearly benefit the rural poor.

An initial econometric attempt at explaining inter-state variation in non-agricultural employment in India on the basis of the growth linkage theory was made by Shankaranarayanan (1980). He used value of crop output per agricultural worker and per capita rural consumption expenditure as direct and indirect indices of agricultural prosperity to test the hypothesis of agriculture induced growth of the non-farm sector. However, he could not find evidence of strong association between these indices and the percentage of non-agricultural workers. This was taken as suggesting that differences in the extent of agricultural prosperity do not explain inter-state variations in the incidence of rural non-farm employment. On the contrary, the percentage of rural non-farm workers depicted a strong and positive correlation with the indices of agricultural commercialisation. An alternative hypothesis was therefore postulated that the level of non-agricultural employment in rural areas was determined by the degree of commercialisation of agriculture.

Hazell and Haggblade (1991) concluded on the basis of econometric analysis of cross-section data on Indian states and districts that agricultural growth is the
principle factor for growth in the non-agricultural sector. They observed that the share of the non-farm sector in national incomes and employment showed a sizeable increase in 1970s after remaining stagnant for many decades. This change coincided with a period of rapid agricultural growth associated with the green revolution. The authors further noted that high performing agricultural states such as Punjab and Haryana exhibited a greater density of non-farm activities, greater density of rural towns and more commerce, service and factory manufacturing than states with poorer records of agricultural productivity and growth. They found that on average an increase in agricultural income by Rs 100 was associated with an increase of Rs 64 in RNF income, distributed with Rs 25 in rural areas and Rs 39 in rural towns. It was estimated that an agricultural growth of 2.4 percent per annum (equal to past trend) will lead to 3 percent growth in non-farm income in rural areas and 2.8 percent growth in non-farm employment. It was further noted that these growth rates would increase to 5.8 percent and 4 percent respectively if agriculture grew at the Planning Commissions target of 4 percent per annum.

In his micro level study covering 18 villages, Chadha (1994) conducted detailed employment surveys in three states with different levels of agricultural development: Bihar (considered a backward region), Andhra Pradesh (agriculturally advanced but with little incidence of non-farm activity) and Uttar Pradesh (with both developed agriculture and non-farm sectors). He observed that a quickly growing and productive agricultural economy is able to promote well-developed non-agricultural activity within the village itself. However, he cautioned that his findings should not be taken for granted as he found that as the economy develops, the proportion of non-farm incomes increases in poorer households.

Shukla (1992) based on econometric modelling of data from the state of Maharashtra, argued that consumption linkages were twice as strong as all production linkages, and that once the consumption effect had been removed, agricultural production had little impact on the growth of the non-farm sector. Likewise, Eapen (1995), Deshpande (1996) and Samal (1997) also noted that consumption linkages resulting from agricultural growth were more potent than production linkages in impelling diversification into non-farm activities. On the other hand, Hariss (1987) observed that in Arni town of Tamil Nadu, production linkages
were stronger than consumption linkages. Within production linkages, forward linkages were found more important than backward linkages.

Fisher et.al (1997) also maintained that the development of the RNFS is likely to be boosted by superior agricultural performance. On the basis of 1991 Census data, they observed that in states with a healthy agricultural sector such as Punjab, Haryana and West Bengal, over 25 per cent of rural workers were engaged in the non-farm sector whilst in Bihar and Madhya Pradesh (with more limited agriculture) it was only 10 per cent. They therefore concluded that, “growth in the RNF sector is clearly boosted by a thriving agricultural economy”.

In several Asian countries (India, Bangladesh, Indonesia, Pakistan and Thailand), a positive relationship between agricultural income and the nonfarm share of total rural employment is observed (Rosegrant et.al, 1999). It is estimated that the regional multipliers range from 1.5 to 2: for each dollar increase in agriculture’s value added, there is an additional $0.5 to $1.0 increase in the value added of the nonfarm sector. Further, 67 to 80 percent of this increment is attributed to household consumption linkages

Gaiha and Imai (2008) have examined the role of agricultural employment in stimulating non-farm employment through backward and forward linkages with the rest of the economy for developing countries. Using cross country panel data, they find that the growth rate of agricultural employment has a strong (lagged) positive effect on the growth rate of non-agricultural employment. Simulations carried out by them suggested that higher farm employment growth would further accelerate the growth of rural non-farm employment. Thus, they estimate that on average a 10 percent higher growth rate of agricultural employment would raise the growth of nonfarm employment by 4.87 percent in China and 2.79 percent in India.

While increases in farm productivity can impel rural diversification, poor state of agriculture can induce the growth of the RNFS in agriculturally backward areas. In regions where population growth continues unabated for many generations, land availability diminishes, soil fertility plummets in the absence of careful land management and labour productivity falls in the absence of technological progress, RNFS acts as a sponge to absorb the surplus labour which cannot be accommodated in agriculture. Low opportunity cost of labour induce diversification into low return , labour intensive non-farm activities as a stagnant agricultural sector
generates little demand for inputs or high-value repair, processing and personal services. Such a phenomenon is referred to as “distress diversification” after Vaidyanathan who first coined the term in 1986 while studying the pattern of non-farm growth in rural India. Thus, where distress diversification dominates, the rural non-farm economy can be categorised as the residual sector characterised by the low productive activities and primal technology in which the poor were forced to participate as a survival strategy. As pointed out by Papola (1987), ‘Slowly growing agriculture not only fails to introduce any structural changes in rural industries … but also tends to keep those engaged in rural industries at a subsistence level of productivity and income.”.

Following the study by Vaidyanathan, several attempts were made in various studies to ascertain the evidence of distress-induced diversification. Eapen (1995), based on Kerala Census data, finds that both land man ratio and marginal to total landholding ratios were positively related to non-farm employment, concluding that rural distress factors were significant for the growth of the non-farm sector in both 1981 and 1991. Singh (1994) on work in eastern India identifies the RNF sector as a residual economy in rural areas. Bhalla (1990) (cited in Basu and Kashyap, 1992) identifies two kinds of distress situations reducing those engaged in rural non-farm activity to a residual labour force: supplementary workers who have no main occupation, but engage in subsidiary work to supplement household income; and those with main occupation also engaged in a secondary activity. Vatta et. al (2008) in a study based on primary data collected from 315 households in rural Punjab found a negative relationship between employment diversification and size of land holding which indicated that participation in the RNFS was induced by distress related factors.

Abraham (2008) argues that employment growth in the RNFS in the first quinquennium of the present century has been essentially driven by distress condition. To substantiate his argument, he cites the paradox between the robust growth in rural non-farm employment as recorded in the 61st round of the NSS and the concurrent stagnation in output growth of the agricultural sector. He points out that rural non-farm employment increased by an impressive 5 percentage points between 1999-00 which also coincided with a phase of widespread agricultural distress marked by low productivity, poor competitiveness and adverse climatic
conditions. He also noted that there was a significant increase in Work Participation Rates and Labour Force Participation Rates among females and older population during this period. He therefore concludes the sudden rise in RNFS employment in the period 1999-2000 to 2004-05 is probably a distress driven strategy of households to seek employment in other sectors.

A theoretical exposition of the interaction between the non-farm economy and the farm economy was provided by Foster and Rosenzweig (2003). They suggested that a growing rural based export oriented manufacturing sector can be expected to have an important pro-poor impact in rural India, possibly more significant than that which can be expected from agriculture-led growth. This followed from their observation that rural diversification tends to be more rapid and extensive in places where agricultural wages are lower and where agricultural productivity growth has been less marked.

It is now widely accepted that factors pertaining to both demand-pull and distress-push phenomena often operate simultaneously making it exceedingly difficult to identify the dominant forces. Some authors have maintained that the demand driven-distress push debate can be reconciled if one recognises that the RNFS is a heterogeneous combination of activities in terms of income and productivity levels. Fisher et al (1997) identify 17 sub-sectors which account for 80 per cent of all RNF employment. Mukhopadhay and Lim (1985) pointed out that the RNFS can be categorised into two sectors. Sector I included those nonfarm activities that are undertaken on a perennial basis with the objective of generating surpluses and with the help of hired labour. Such pursuits may also involve some amount of technical sophistication. Sector II on the other hand includes products and activities that are seasonal, managed with unpaid family labour relying on primal technology and catering to the local market. Fisher et al (1997) and Unni (1998) also emphasize heterogeneity within the sector and contend that recognition of such diversity is lacking in literature. Rao(2006) in his study on rural non-farm growth in Andhra Pradesh concluded that agricultural growth linkages was the reason behind the growth of the modern RNF activities while distress related factors were more commonly associated with the existence of traditional non-farm vocations.

In attempting to resolve the demand pull-distress push debate, Reardon (1998) suggests that when relative returns to RNFS are higher than in agriculture,
pull factors are at work. Conversely, distress-push diversification occurs when rural populations engage in economic activities that are less productive than agricultural production. It thus follows that in the presence of both demand pull and distress push diversification, nonfarm activities would follow a bimodal distribution over household incomes. There would be two clusters of high return and low return activities which are pursued by affluent and poor households respectively. Further, if distress diversification is dominant, poorer households would be more diversified than others. On the other hand if diversification is primarily demand driven, we would expect a higher percentage of higher income household to engage more in nonfarm activities (Ranjan, 2006).

In a similar vein, Hossain (2004) also argued that the level of labour productivity in the RNFS vis-a-vis agriculture is a good indicator of the strength of the former. Therefore, if labour productivity in the non-farm sector is lower than the agricultural wage rate, it would support the hypothesis of ‘distress-push’ diversification. Higher labour productivity on the other hand is an evidence of existence of pull factors.

Buchenrieder and Mollers (2006) have constructed a basic welfare model to demonstrate that both types of diversification i.e. demand-pull and distress-push are beneficial for households and society. Figure 2.1 depicts the welfare gains arising due to labour force shifts from the agricultural sector to the non-farm economy. According to the authors, the motivation for distress-push diversification arises from incomplete agricultural labour markets which are typically found in developing and transition countries where high levels of disguised unemployment exist. Two labour supply curves are drawn in the model. S₁ represents the labour supply curve of the distress push shifters while S₂ is the supply curve of those who work in the agricultural sector and are potential shifters to the demand pull sector. The distinction between the two supply curves arises due to differences within the rural population in terms of individual capital assets and consequently, in terms of opportunity costs of agricultural labour.

In the event of existence of disguised unemployment, the average wage rate in agriculture is lower than the equilibrium wage rate because total agricultural earnings are divided among all household members, even those who do not contribute to the aggregate value added. The low or zero opportunity cost of
agricultural labour induces some family members to work at a lower distress push wage rate in the RNFS. As a result of distress push diversification, the average wage rate in the agricultural sector moves towards the equilibrium value. The welfare gain of the distress-push shifters is the difference between the shaded areas A and B. The shaded area B represents the wage loss for those who move out of the agricultural sector and A represents the wage gain for those who remain in
agriculture. Hence, there is an economic rationale for farm households to diversify, even if it means that one member of the household receives a below average wage rate as compared to farm activities because total household income will increase.

Similarly, Lanjouw et al. (2004) assert that although in most cases the RNFS is composed of qualitatively different categories, policy analysts should not neglect this sector. As pointed out by them “Such employment may nevertheless be very important from a welfare perspective for the following reasons: non-farm income may serve to reduce aggregate inequality; where there exists seasonal or longer-term unemployment in agriculture, households may benefit even from low non-farm earnings; and for certain sub-groups of the population that are unable to participate in the agricultural labour market, non-farm incomes offer some means to economic security.”

2.3 PRIME MOVERS OUTSIDE AGRICULTURE

While the growth of the RNFS is intimately connected with the state of agriculture in a region, the role of other factors in influencing RNF growth has also been acknowledged in literature. One such element is the proximity of rural areas to urban centres. An early theoretical model pertaining to rural-urban linkages and its impact on the RNFS was given by Hymer and Resnik (1969). In their framework, non-agricultural activities in rural areas were designated as “Z” activities to indicate the heterogeneity in this group. However, it was argued that Z activities essentially encompass inferior goods. As such it was predicted that the RNFS would decline as development proceeds, a decline attributable to the assumed tendency of rural consumers to substitute imported or urban produced goods for goods produced in rural areas. However, the Hymer-Resnik model though impressive was not conclusive as many countries experienced a spurt in non-farm activities despite the growth in their economies (Leindom, 1973).

Fei & Ranis (1993) have extended the Hymer-Resnik model by positing a two-part RNFS, with part of the sector engaged in producing traditional goods and services in households and villages (the low productivity activities) and the other in producing certain modern goods using more advanced production methods. They found a stimulating demand for the output of the modern non-farm sector in both local and urban markets. They therefore maintained that once the heterogeneity of
the rural non-farm sector is recognized one can more easily accept that some parts of the sector are dynamic

According to Visaria and Basant (1994) (cited in Basant et.al, 1998), urbanisation can influence the growth of rural non-farm sector in various ways.

a. With time an increasing number of rural localities get classified as towns as also boundaries of cities expand to engulf adjoining rural areas. Consequently, there is likely to be an apparent decrease in the size of the RNFS as urbanisation gathers momentum.

b. Urbanisation may render some rural non-farm activities unviable due to competition from cheaper and better products made in urban centres.

c. On the contrary, urbanisation may also extend the market for locally produced goods and services and facilitate the inflow of non-local capital to rural areas.

d. Urbanisation may throw up new employment opportunities for rural workers who may commute daily to the towns for work without changing their residence.

Shukla (1992) maintained that urbanisation may influence the RNFS through the supply side as well as on the demand side. On the supply side, urban centres may provide location and productive support to rural employment off the farm. On the demand side, small towns or large cities may provide either marketing opportunities or price/product competition for rural non-agricultural 'exports'. He further points out that agglomeration i.e. regional industrialisation confer broad localisation benefits on rural non-farm activities through a greater ease of technology transfer, input availability and business sophistication all of which serve to raise non-farm productivity. He argues that processes of urbanisation may have differential impacts on different types (secondary / tertiary) and forms (household / non-household) of non-agricultural activities, as does the effects of different sized towns and the regional spread of towns.

A stylised growth pattern of the RNFS based on rural-urban linkages has been formulated by Start (2001). According to Start, the RNFS evolves in four stages (Table 2.1). In stage one which is the pre-modern situation, the economy is rurally located and subsistence in nature. As agriculture or some other growth sector emerges and modernises in stage two, increased productivity and incomes impel rural diversification. However, in stage three, greater urban competition coupled with
reduced transportation costs and increased incomes spell the demise of the RNFS. Finally, in stage four, there occurs a revival of the RNFS as a fall out of the increased congestion and rising costs in the globalised urban economy. Although the sequential process outlined above suggests a homogeneous spatial pattern of development of RNFS, Start maintains that different rural locations will exhibit a mix of all stages in varying degrees, depending upon levels of agricultural development, rural income, rural infrastructure and urbanisation.

Kundu et.al (2003) found that during the post reform period, states with higher growth of urban population exhibited lower levels of RNFE. They point out that during the 1990’s many of the developed and highly urbanised states experienced high urban growth. However, this process of urbanisation has not resulted in better opportunities for rural non-farm workers through rural-urban linkages. They further note that persons engaged in traditional occupations, such as artisans, craftsmen, carpenters, goldsmiths, blacksmiths, etc have been badly hit by the state-of-the-art technological innovations during the post-reform era and forced to leave their profession.

Table 2.1: Stages of Development in the RNFE

<table>
<thead>
<tr>
<th>Stage of RNFE</th>
<th>Stage of Agricultural Development</th>
<th>Level of Rural Remoteness</th>
<th>Level of Urbanisation</th>
<th>Main Locus of Nonfarm Production</th>
<th>Level of Nonfarm Technology, Capitalisation and Returns</th>
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<tbody>
<tr>
<td>One – Tradition al</td>
<td>Pre-Modern &amp; Subsistence</td>
<td>High</td>
<td>Low</td>
<td>Rural (RNFE limited by low purchasing power)</td>
<td>Low: Traditional subsistence products</td>
</tr>
<tr>
<td>Two – Locally Linked</td>
<td>Modernising and improving technology-led agricultural growth</td>
<td>High</td>
<td>Low</td>
<td>Rural (RNFE expands through agricultural-led growth)</td>
<td>Low to Medium: Some technology and capital improvements</td>
</tr>
<tr>
<td>Three – Leakage to Urban Area</td>
<td>Modernising and improving: Improved urban marketing</td>
<td>Low (new roads open urban markets)</td>
<td>Low</td>
<td>Urban (RNFE competed away by urban goods and services)</td>
<td>Medium to High: As urban location allows investment and economies of scale, RNFE must modernise to survive.</td>
</tr>
<tr>
<td>Four – New Urban Linkages</td>
<td>Modernising and expanding: Increasing urban demand</td>
<td>Low</td>
<td>High (congest-ion and costs rise)</td>
<td>Shift to Rural: Flexible specialisation able to exploit rural advantage</td>
<td>Low to High: From cottage industry out-workers to modern ‘clustered’ and sub-contracted units</td>
</tr>
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Adapted from Start (2001)
Infrastructural development is cited as one of the “prime movers” outside agriculture which exerts a definite influence on the growth of the non-farm sector in rural areas (Coppard, 2001). Roads, electricity, telecommunications, and other infrastructure provide fundamental underpinnings for rural nonfarm activity (Ahmed and Donovan 1992; Ahmed and Hossain 1990; Binswanger et al. 1989; World Bank 1994). It is often stated that the most significant impact of infrastructure on the RNFS may come indirectly via its influence on agriculture. Thus, improved infrastructure serves to raise agricultural production and productivity which in turn spurs non-farm growth by way of production and consumption linkages. This proposition has indeed been corroborated by several studies. While analysing the growth linkages between farm and non-farm sector, Hazell and Haggblade (1991) found that in India the multiplier effects of agricultural growth on non-farm economy were enhanced by the state of rural infrastructure. Similarly, Harris (1991) also highlighted the role of infrastructure in maximising rural growth linkages.

However, the availability of infrastructural facilities is posited to have a direct impact on the RNFE as well. Roads, telecommunications, credit and electricity all contribute to increased rural non-farm activity as measured by either employment or income. A study by Jha (2005) involving 26 districts spread across thirteen states found that infrastructure was a strong determinant of RNFE. A recent study based on 60th round of NSS revealed infrastructure (proxied by road length, teledensity, and electricity consumption) as a significant determinant of participation in non-farm activities as workers and self-employed persons in rural areas (Gaiha and Imai, 2007). Reardon et.al(1998) emphasize the role of both soft infrastructure (e.g. extension, market information and education) and hard infrastructure (e.g. roads and telephone lines) in promoting RNF activities as they enable private firms to lower transaction costs in developing countries. Apart from lowering costs, good infrastructure in the form of transport links is essential if non-farm enterprises are to break away from dependence on limited demands in local markets and orient their marketing to the outside world (Meade, 1984). Also, better and relatively inexpensive transport facilities make it possible for rural workers to take up non-agricultural vocations in adjoining towns without changing their residence (Basant and Joshi, 1991). Two studies from China and India suggest that a 10 percent increase in rural road density would increase non-farm output and employment shares by 2 percent (Fan, Hazell

However, improvements in transportation can also usher in increased competition for rural enterprises, formerly protected by their remoteness. Islam (1997) points out that infrastructure improvement not only increase the supply of competing products, they can also contribute to a change in rural tastes and preferences, towards more urban products. Reardon et al. (1998) comment that the distributional impact of road improvements is uncertain and depends on the involvement of lower-asset households in activities favoured or harmed by improved market integration. Ahmed et.al (1990) maintain that activities which depend on export markets or imported inputs benefit from rural road construction while those which compete with urban manufacturers suffer.

While the impact of road development on non-farm activities may vary across regions and rural groups, rural electrification has an unambiguously positive role to play in propelling the development of the non-farm sector in developing countries. According to Craig and Gordon (2001), availability to electricity helps to create increased RNF opportunities in several ways:

a. by enabling the development of enterprises for which electricity is a prerequisite;

b. by reducing the costs of, for example, diesel-powered, small-scale milling to a viable level;

c. by providing lighting and hence increasing the hours that can be spent in (selected) RNF activities;

d. by releasing labour from time-consuming and low productivity chores such as manual pounding of grain.

Strong synergies between rural electrification and non-farm growth have been highlighted in several studies (Visaria 1995, Singh, 1994). The World Bank Investment Climate Survey for India indicates that power shortages were one of the most serious obstacles to the development of the nonfarm sector (World Bank, 2005).
The scope of government intervention in promoting the non-farm sector in rural areas has also been highlighted in literature. It is pointed out that the market left to it will not produce as rapid an expansion of the non-farm sector as desired and government intervention is needed to promote the non-farm economy. However, Fisher et al. (1997) point out that in India the rural non-farm sector has often been neglected by policy makers as a residual sub-sector that falls between agriculture and urban industry. They assert that there is no specific policy meant for the growth of the RNF economy and most policies fall under the ambit of the broad industrial policy (such as those meant for Khadi and Village industries) and the agricultural policy (agro-processing). Moreover, they argue that most policies meant for the non-farm sector are directed either towards preserving employment or providing subsidies rather than increasing productivity. They further point out that a number of sub-sectors have received promotional attention while others have been neglected. They argue that resource allocation to the sub-sectors is often not made on the basis of economic assessment but often on the basis of the sectors political significance, regional importance and locational concentration. They concluded that the RNFS is poorly served by the formal credit sector and therefore stress on the expansion of alternative development finance agencies for fuelling the growth of the non-farm sector.

Sen (1997) maintained that a significant rise in public expenditure in rural areas was an important reason behind employment diversification during the 1970’s and 1980’s. Ghosh (1995) has argued that public expenditure plays an important role in maintaining the demand for non-agricultural goods during periods of low agricultural incomes. A positive role of administrative, development and social services in generating RNF both directly and indirectly was observed by Samal (1997) in Orissa. Mukherjee et al. (2005) while making a comparative analysis of RNFS growth in India and China describe the RNFS in China as dynamic whereas they maintain that growth in output and employment in this sector in India is less satisfactory. They argue that the observed patterns in RNF development are the results of institutional differences between the two countries especially in their political systems, ownership structure and credit institutions.

Beginning with the 1990s, liberalisation and globalization of national economies has exposed the rural non-farm economy to new opportunities and threats. Liberalization by reducing direct government involvement in production and
marketing has opened up new market opportunities for the private sector, particularly in agricultural processing, input supply and trade. Relaxation of restrictions on foreign exchange and investments has unleashed a flow of foreign direct investment in Asia, Africa and Latin America. The rapidly changing circumstances may offer opportunities to some rural producers to access new markets. However, liberalization and globalization may expose other rural businesses to new challenges. Certain categories of rural non-farm activities have thrived in the past on account of effective protection from outside competition in the presence of high transport costs, restrictive production and trade policies, subsidized inputs and credit facilities. Globalization and liberalization remove many of these barriers thereby “de-protecting” the RNFS. The transition may lead to the demise of many traditional small-scale manufacturing activities whose products cannot compete with higher quality goods produced on a large scale with lower unit costs. Therefore in the initial phases of liberalisation, there may be significant job losses in the RNFS although this may be compensated in later years as new and more productive types of non-agricultural activities emerge(Haggblade et. al, 2002).

A potential threat to the RNFS in the globalisation era lies in the emergence of supermarket chains in the developing world. The expansion of supermarket in rural areas may radically alter product selection and market share in favour of imported brands at the expense of local farmers, processors, food suppliers and retailers. In India, as in other developing countries, supermarket chains have expanded rapidly leading to a consolidation and concentration of power and scale and therefore to an ever growing competitive pressure on small rural non-farm suppliers (Fernandes et.al, 2001). However, there is a paucity of studies in India dealing with the broad impacts of the globalisation process on the prospects of the RNFS.

2.4 PATTERNS OF NON-FARM SECTOR GROWTH

The general finding emerging from available data is that the nature of RNF activity differs significantly over regions and sub-regions. Reardon et.al (1998) suggest that depending upon the patterns in the level and composition of rural non-farm activity, it is possible to outline three different stages of rural non-farm sector transformation.
In stage one, the rural non-farm sector has production or expenditure linkage with agriculture with little dependence on rural-urban links. Production is usually home-based and carried out on a small scale with a view to catering to the local market. Agriculture employs majority of the rural workforce. In terms of farm/non-farm linkages, during this first stage agriculture tends to depend on local supplies of farm inputs and services and on local processing and distribution of farm products, usually carried out by small to medium-scale firms.

The second stage of RNF sector transformation is characterized by a tendency towards a greater mix of situations. Linkages appear with other sectors in addition to agriculture—for example tourism, mining and service sector activities, although the latter did grow out of a historical RNF sector transformation based on linkages with agriculture. The share of rural population dependent on farming is lower. There tends to be a greater weight of rural-urban links as the basis for RNF employment than in first-stage with nascent subcontracting of rural companies by urban or foreign businesses (mainly in light durables such as clothing) and a rapid rise in the labour force obliged to commute between the countryside and rural towns and intermediate cities. There is also a tendency for rapid "agro-industrialization" in commercial agricultural areas, both on a small scale and, particularly, on a medium to large scale. Another characteristic of this phase is the mixed levels of capital intensity, both within and across RNF subsectors. Thus, small-scale labour-intensive production in the countryside is observed alongside relatively capital-intensive enterprises producing the same output in local intermediate cities.

The third stage of RNF sector transformation is characterised by an intensification of the characteristics that differentiate the second stage from the first: rural-urban interface become stronger and more advanced forms of business linkages, such as subcontracting arrangements and labour commuting appear on the scene. A number of other tendencies also characterize this stage of transformation: the expansion of subcontracting beyond light durables to medium durables (such as vehicle parts); substantial RNF employment arising outside linkages with agriculture and rapid agro-industrialization in commercial agriculture.
2.5 HOUSEHOLD LEVEL DETERMINANTS OF RNFE

The distinction between demand pull and distress push diversification suggests that rural households face different motivations, prerequisites, constraints and outcomes for engaging in nonfarm vocations. For a policy perspective it is important to understand why individuals enter the non farm economy. Rural communities are not homogeneous social entities in which all families can be supposed to share similar adversities and prospects- households and individuals are differentiated by their assets (especially land and education), income and social status in their local communities (Leach et.al, 1997).

Asset ownership primarily in the form of land is said to be one of the most important determinants of livelihood diversification in rural areas. Theoretically, a negative relationship is likely to be observed between land holding size and the share of non farm income in total household income as land owning households are not compelled to diversify into non farm sector like the landless/marginal households. The inverse relation between size of land owned and involvement in RNFS has been corroborated by a number of studies. According to Hazell and Haggblade (1991), those with land less than 0.5 ha earn between thirty percent and ninety percent of their income from non-farm activities. The share of rural nonfarm earnings in total household income is usually highest for the smallest farm sizes in Latin America for example (Reardon et. al, 2001), or for Bangladesh (Hossain, 2004).

However, an inverse relationship between land ownership and entry into nonfarm occupations may not always be verified empirically. Two reasons may be cited for this argument. Firstly, access to land is only one among the many factors that influence entry into nonfarm employment. Second, successful farming may constitute an entry point for agricultural processing and trading and provide financial resources for investment in nonfarm enterprises, while at the same time constituting a safety net that enables riskier and potentially higher-return household investments. The relation between household physical assets and employment diversification is, thus, a complex one and cannot be determined a priori.

Human capital attributes comprising of age, skills and education widen the set of employment opportunities for individuals. Education is a significant determinant of RNF business sector success, wage levels and productivity. Better educated individuals are likely to possess skills which facilitate successful involvement in non-
farm activities, including the ability to manage a business, to process relevant information, to adapt to changing demand patterns, and to liaison with public and private service providers. They are also likely to have greater aspirations with regard to working outside agriculture. Education is also linked with higher productivity in trading, construction, service and manufacturing activities (Islam, 1997). Secondary education stimulates entrepreneurial capacity whilst primary education enhances work force productivity. The positive association between literacy and rural non-farm employment was noted by several studies including those of Chadha (1993), Fisher et al (1997), Narayanmoorthy et al (2002) at the all-India level and Basant (1993) in Gujarat; Jayaraj (1994) for Tamil Nadu, Eapen (1995) in Kerala and Samal (1997) in Orissa. However, it may be noted that it is particularly the non-traditional or modern non-farm activities that are strongly influenced by education. A recent study aimed at assessing rural non-farm employment and incomes in Eastern Himalayas show that education plays prominent and differential role across low-return and high-return nonfarm activities with higher educational levels of both males and females enable participation in the more remunerative nonfarm employment opportunities (Micevska et. al, 2007).

Household age composition is also often used empirically in explaining the degree of participation in the nonfarm economy. According to Chayanov (1966), the dependency ratio may be higher in older households, and the resultant subsistence pressure may increase the need to augment incomes from non-farm activities. Abdulai and Delgado (1999) found that the probability of participation in nonfarm activities increases with age up to 33 for men and 30 for women and is thereafter inversely related with age. Smith (2000) noted that it is generally the younger household members who migrate in search of non-farm, income-earning opportunities. Rao(2006) working with cross section data in rural Andhra Pradesh found that age of the head of household is negatively related to modern RNFE but positively to traditional RNFE.

The probability of engagement in the non-farm sector is positively related to household size. Three reasons may be cited for such a pre-supposition. First, even if RNFE activities is randomly distributed across persons, there are more persons in larger households, so there is a relatively greater chance that at least one working member will be in non-farm employment. Second, if all households have the same land area, than in bigger households one (or two) working members can ‘mind the
farm’ while other member(s) go to the RNFS. Third, once one member is engaged in non-farm activity, other younger members are likely to follow suit.

Most occupations in the Indian context are linked to caste. Thus, there may be entry barriers to nonfarm occupations due to the poor socio-economic status of the vulnerable sections such as OBC/SC/STs. Unni (1997) reports that social status (proxied by caste) in rural Gujarat, after controlling for education and other personal characteristics, exercises an important, independent, influence on access to high-productivity non-agricultural occupations. Similarly, a micro study conducted in Arunachal Pradesh revealed that the ST status of rural households reduces the probability of entering a non-farm occupation (Mishra, 2007). Lanjouw and Shariff (2004) conclude on the basis of NCAER data that in India, association between occupation and social status vary geographically. They find that in Western India, not only are scheduled casts less represented in cultivation and self/wage employment in the non-farm sector, they are also statistically less likely to be involved in non-farm casual wage employment compared to agricultural labour. On the contrary, caste is not found to be statistically significant in determining access to non-farm employment in Eastern India. Again in North-Central region and in the South, individuals belonging either to a scheduled caste or a scheduled tribe are relatively less likely to be involved in either non-farm own enterprise activities or non-farm salaried employment.

The peaks and troughs in labour demand from agriculture mean that many people in rural areas are seasonally unemployed. Consequently, non-farm activities are likely to provide a secondary occupation to rural workers during the lean agricultural season. It may however be emphasised that the types of employment which are available on seasonal basis are limited. Capital (both human and physical) intensive activities are not likely to be undertaken seasonally because it leaves capital underutilized during the agricultural peak season. This in turn means that labour productivity is unlikely to be very high and that traditional non-farm occupations are more likely to be pursued (Lanjouw and Feder, 2001).

Proximity to markets encourage both farm and non-farm vocations. Factors affecting market access are distance to markets, access to transport infrastructure and telecommunications, access to market information, the quality of goods and services produced, volumes produced etc. However, better roads and improved infrastructure can limit the capability of lower asset households to participate in the
RNFE because of increased competition from other areas. Narayanamoorthy et al (2002) used pucca road facility as a proxy for market access and found a significant association between this variable and rural non-farm employment. The village level study by Pandey et al (2002) in Orissa and Som et al (2002) in Madhya Pradesh mentioned poor road connections as an important marketing constraint in many communities. However, as pointed out by Escobal ((2005), improved infrastructure may not benefit the rural population in an equitable fashion because those who are better off in rural areas may obtain higher returns to infrastructure investments because of a larger private asset base or because of a better access to other public infrastructure.

2.6 RNFS AND HOUSEHOLD INCOMES IN INDIA

It is a well documented fact that rural households often have multiple sources of income, a phenomenon referred to as livelihood diversification. Thus, rural households can generate income from a wide range of non-agricultural activities apart from their farm and off-farm income sources. According to Ellis (1999), "livelihood diversification is the process by which households construct a diverse portfolio of activities and social support capabilities for survival and in order to improve their standard of living. It is an infinitely heterogeneous process differentiated in its causes and effects". Rural livelihood diversification has far reaching effects. The positive impacts of diversification into non-farm activities include reduction of income instability, risk mitigation and increase in household incomes. However, it is also maintained that rural income diversification may accentuate income inequality in rural areas especially when there exists entry barriers to high return non-farm activities (Lanjouw and Stern, 1998).

Internationally, the literature on livelihood diversification and non-farm incomes is growing rapidly owing to the realisation that rural areas are no longer predominantly agricultural and rural incomes are no longer farm based. Reardon et.al (2006) estimate that in the developing countries of Asia, Africa and Latin America local rural non-farm income constitutes roughly 40 percent of household incomes. However, in India, there is a relative paucity of studies on rural income diversification due the fact that no major national survey collects data on incomes (Bakshi, 2008). A report from the 55th round of NSS entitled Sources of Household Income in India 1999-2000 yielded information on the diversity of sources of
incomes (in terms of the number of households reporting incomes from a particular source) but nothing on the levels of income. In 2002-03, the NSS conducted a Special Assessment Survey for estimating incomes and expenditures of farming households only.

In 1993-94, the NCAER conducted a large-scale multi-state survey on incomes for compiling the National Human Development Report. Lanjouw and Shariff (2002) later used this data set for assessing the contribution of the non-farm sector to rural incomes. They estimated that in 1993-94, the non-farm sector accounted for about one-third (34 percent) of rural household income in India as opposed to fifty-five percent derived from cultivation and eight percent from agricultural wage labour. They noted that if all non-farm income sources are taken together, the importance of non-farm income is fairly evenly spread across income quintiles as opposed to agricultural wage labour which is a significant income source for the poorer quintiles. However, they assert that if one takes into account the heterogeneity within the RNFS, the picture is altered. Thus, while casual non-farm wage income falls monotonically as one moves to the upper quintiles, the share of incomes derived from regular salaried employment rises monotonically across income quintiles.

A second survey on sources of rural household incomes covering 27,010 rural households was conducted by the NCAER in 2004-05 thereby enabling a comparison with the earlier round. Shariff (2009) estimated that in 2004-05, the share of the non-farm sector in household incomes was 46.1 percent which was 11 percentage points higher than that recorded during 1993-94. In contrast, the share of income from cultivation declined to 33 percent from 55 percent while that derived from agricultural wage income increased from 7.9 percent to twelve percent. However, Shariff points out that a disturbing feature of non-farm income growth in the decade ending 2004-05 lies in the fact that that most of the increase in the contribution of the RNFS to household incomes was realised by a big jump in the share of casual non-agricultural labour by 6.5 percent. He further points out that the portion of rural household income derived from non-farm self-employment increased by a meagre 0.9 per cent during the reference decade.

Table 2.2 shows changes in the share of the non-farm sector across rural income quintiles during 1993-94 to 2004-05. It is evident that as per the latest survey, the top two income quintiles derive the largest share of income from the non-
farming sector. Further, these classes recorded the fastest increase in the share of income derived from the non-farm sector as compared to other income groups. As expected, casual/manual work is relatively important for the households at the lower band of income hierarchy. However, for all income groups the share of non-farm incomes as a proportion of total incomes increased.

The NCAER surveys were the only attempts made at the country wide level for analyzing the composition of rural household income. Most studies aimed at assessing the contribution of the non-farm sector to household incomes have a regional focus. A widely cited regional study analyzing the composition of rural incomes is that by Walker and Ryan who surveyed six villages in Andhra Pradesh and Maharashtra over the ten year period 1975-84 as a part of an ICRISAT project. They reported that though non-farm incomes did not account for more than thirty percent of household incomes, they helped to raise average incomes and reduce income variability. Two of the ICRISAT villages studied by Walker and Ryan were resurveyed after a gap of more than fifteen years in 2001 by Deb et.al (2002) with the objective of analysing how livelihood strategies have evolved over time. Using the Participatory Rapid Appraisal approach, the researchers found that in both villages the number of sources of income per household had increased during the period 1975-2001. Further, households with more land had more sources of income. Also, there was a marked increase in the share of NFS in net household income in both villages in 2001 as compared to 1975.

Table 2.2: RNFS Shares by Income Quintiles India, 1993-94 and 2004-05.

<table>
<thead>
<tr>
<th>Per Capita Income Quintiles</th>
<th>Casual Manual Work</th>
<th>Salaried/professional</th>
<th>Non-farm self employed</th>
<th>Total Non-Farm Shares across Income Quintiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quintile 1 (Lowest)</td>
<td>16.5</td>
<td>20.3</td>
<td>3.6</td>
<td>4.2</td>
</tr>
<tr>
<td>Quintile 2</td>
<td>13.6</td>
<td>22.1</td>
<td>8.7</td>
<td>7.5</td>
</tr>
<tr>
<td>Quintile 3 (Middle)</td>
<td>10.0</td>
<td>21.5</td>
<td>11.6</td>
<td>12.9</td>
</tr>
<tr>
<td>Quintile 4 (Highest)</td>
<td>6.0</td>
<td>17.9</td>
<td>11.8</td>
<td>18.7</td>
</tr>
<tr>
<td>Total</td>
<td>6.3</td>
<td>12.8</td>
<td>6.5</td>
<td>16.5</td>
</tr>
</tbody>
</table>

Adapted from Shariff (2009)

A micro level investigation by Sujithkumar (2007) in three villages of Vellore district of Tamil Nadu showed that the share of non-agricultural incomes in total incomes decreases with an increase in landholding status. A similar study conducted in rural Punjab by Vatta et.al (2007) showed that average number of income sources followed a negative relationship with the operational area. The analysis of income
data from a sample comprising of households with varying asset base showed that relatively poor rural households were more diversified in terms of sources of income as compared to the medium and large cultivating households. This implied that relatively poorer households were forced to diversify to sustain their meagre incomes. Bhaumik (2007) in his study based on 600 households in rural West Bengal also finds clear evidence of a negative relationship between percentage of non-farm incomes to total incomes and farm size. Rawal et.al(2008) working with village level data in rural Andhra Pradesh observed that there was no simple relationship between diversification out of the primary sector and the level of wealth. They found that while in an agriculturally developed village, the wealthiest households derived 77 percent of their incomes from agriculture and allied activities, in another village situated on a major highway, only twenty six percent of the incomes of the rich came from agriculture-related activities.

2.7 RURAL NON-FARM SECTOR IN ASSAM

There have been relatively few studies dealing with the size, composition and importance of the RNFS in Assam. In 1994, the NABARD constituted a Study group on the Rural Non-Farm Sector in Assam along with seven other states to analyze the chief characteristics of the rural non-farm economy of the state and identify the constraints and future prospects of growth. The report listed Cachar and Karimganj among the top five RNFS districts in terms of employment. The two districts were identified as constituting one of the three major clusters of contiguous districts for RNFS. It was noted that the catchment areas of the Brahmaputra and Barak rivers are well developed in terms of agriculture and thus the surplus in agriculture goes to non-agricultural income generating activities. The diverse structure of the RNFS in the state was also emphasised. Thus, while fish processing units were found to be dominant in districts along the Brahmaputra river, plantation product processing was concentrated in upper Assam. Similarly, fibre processing was revealed to be well spread out in central Assam belt while silk textile manufacturing was observed to be a prominent activity in Kamrup and parts of upper Assam (Bhimjiani et.al, 1994).

A survey of the Rural Non Farm Sector in Kamrup district found that majority of the non-farm enterprises in the district were new i.e. post 1990 and have come up in response to growing demand for products and services. It was noted that that the
role of formal training in starting new enterprises has been very limited. Paucity of capital and poor transport were found to be the most important constraints in the expansion of units. An interesting observation made in the report was that of a positive correlation between the scale of operations and mortality of the manufacturing firms. As long as the firms are catering to the local demand and remain small, the risk of closing down is low. But once they graduate to the next segment of catering to the outside market, the risk of mortality of enterprises increases markedly (Raghaviah, 2000).

A similar study conducted in Jorhat district attempted to identify and map the activities under the RNFS and profiling them in terms of high share, high growth and emergent activities. The study reported that while micro-enterprises were vibrant, the small and medium sector was stagnating in the district. Availability of local markets has been identified as the major driving force behind the growth of enterprises in the district. It was also mentioned that the rural non farm sector in the district was poorly served by the banking system. The report therefore advocated that newer models of credit delivery such as the formation of Joint Liability Groups should be explored. A survey of rural enterprises in Nalbari district listed poor road conditions, inability of customers to pay in cash and lack of institutional finance as the major obstacles inhibiting the expansion of the non-farm sector (Chakravorty, 2006).

2.8 CONCLUSION

The literature review outlined above has served to highlight various aspects of the rural non-farm sector in the context of rural transformation of a developing economy. It is beyond doubt that in India the non-farm sector has emerged as an important segment of the rural economy both in terms of its contribution to household incomes and its share in total employment. However, there exist significant spatial differences in the pattern of non-farm growth across states and regions. Thus, while in agriculturally developed areas, diversification into non-agricultural activities is often propelled by forward and backward linkages with agriculture, in agriculturally stagnant zones, rural non-farm sector acts as a sponge to absorb the surplus agricultural labour. Growth impulses for the non-farm sector may also emanate from outside the agricultural economy in the form of increased urbanisation, availability of local resources supporting specific industries, improvement of rural infrastructure and spread of globalisation. The literature review also helped to identify some of the
important factors which may influence participation in the non-farm sector by rural households, important ones being asset holdings, household size, household age and sex composition, levels of education, caste status, proximity to market centres etcetera. It is also evident that rural households have multiple sources of income and access to non-farm incomes serves to overcome income instability, minimize risk and enhance food security. In recent years, there have been numerous studies both at the macro level as well at the micro level focussing on various aspects of rural non-farm dynamics. In Assam also, a few studies have been made for assessing the size and importance of the RNFS. However, it emerges from the literature review that so far no attempt has been made for ascertaining the nature and significance of the RNFS in Barak Valley, although census records serve to highlight the fact that the region is favourably placed in terms of incidence of rural non-farm employment as compared to the rest of the state. Therefore, a detailed and in-depth analysis of the dynamics of the RNFS is essential for understanding the pattern of rural non-farm growth in the region and for the identification of the problems confronting this sector so that suitable policy prescriptions can be designed. In what follows in the subsequent chapters, an attempt has been made towards filling this gap.

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