

Nonfarm based Livelihood in Rural Sikkim: An Analysis

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ABSTRACT

Contemporary literatures on rural livelihoods reveal these days rural livelihoods are highly diversified and largely dependent on nonfarm activities in most of the places. An inquiry of this problem in context of Sikkim has found a similar story. Using data obtained from 300 rural households through multistage random sampling from all four districts of Sikkim, this paper tries to see the situation of nonfarm livelihoods in rural Sikkim. It was found that casual nonfarm employment occupies the most common livelihood source, followed by regular nonfarm employment and self-employment. Nonfarm income occupies a high share in household income in most of the households. Factor causing nonfarm work participation are average education of the households, credits and finance, Household asset possession, family size and operational holdings. Despite farming activities being central to several rural households, nonfarm income occupies a higher share in most of the cases.

Keywords: Nonfarm activities, Sikkim, rural households, diversification, urbanization

Rural nonfarm sector is one of the most important and discussed topic in context of rural development in developing countries. Taken as an alternative to farm sector in terms of making livelihoods and poverty reduction (J.R. Davis, 2003; Reardon, Berdegue, Barrett, & Stamoulis, 2007), it has occupied a very prominent place in rural development studies. The presence of 'non-agricultural activities in rural space was identified globally in different types of land system and settlement patterns (Berhanu, Colman, & Fayissa, 2007; Bryceson, 2002; Manjur, Amare, HaileMariam, & Tekle, 2014; Saha & Bahal, 2014). And owing to research throughout the world, it has also become evident that the 'agricultural sector by itself has become incapable of meeting the living of people in creating employment opportunities to rural masses in the wake of rising population (Barrett, Reardon, & Webb, 2001; Ellis, 2000b; Rigg, 2006; Yaro, 2006). In developing countries, the rural labour force is growing rapidly (Mahmud, 1996), the land available for the expansion of agriculture has become scarce, making employment opportunities short for the

increased work force in farm sector (J.O. Lanjouw & Lanjouw, 2001). Not only that, the farm sector has been reported with many problems like shrinking farm incomes (B. Davis, Winters, Carletto, *et al.*, 2009; Karlsson & Bryceson, 2014; Kashyap & Mehta, 2007; Rigg, 2006), and other vulnerabilities like crop failures (Ellis, 2000a, 2005). On the other hand rural areas also confront with problems like slow or almost no industrialization and limited absorption capacity in the manufacturing sector elsewhere (Pandey, 2015) Therefore, rural households are not purely agricultural households and making non-farm employment (NFE) is an emerging phenomenon in the developing countries since 1960s (J.R. Davis, 2003; Hymer & Resnick, 1969; Saith, 1992; Vaidyanathan, 1986).

Rural nonfarm activities include all economic activities outside agriculture in a rural setting (Haggblade, Hazell, & Reardon, 2007; Ranis & Stewart, 1993). According to International Standard Industrial Classification (ISIC), agriculture includes all the primary production of unprocessed plants and animal products (UN, 2008), so all other

activities apart from agriculture are nonfarm activities. All nonagricultural activities like mining, manufacturing, utilities, construction, commerce, transport, financial, and personal services those carried out in the rural space are commonly referred to as nonfarm activities (Ellis, 2000b; Haggblade *et al.*, 2007). The incomes either in cash or kind earned from all nonfarm activities are collectively called as nonfarm incomes (Ellis, 1998, 2000b).

The need for a separate study of rural nonfarm activities arises because the usual classification of workers on employment and occupation might not correctly estimate the extent of nonfarm activities due to its part time or seasonal nature (Anderson & Leiserson, 1980). Thus as an alternative to farming as well as a compliment to the farming sector in many cases, non farm sector has occupied a vital place in rural development studies. Certain nonfarm activities are said to be traditionally carried out in every society like Jajmani in Indian context, and some are emerging with development and time.

Statement of the Problem

While studying livelihood status of some selected rural households in Sikkim, it was found that households have a high share of income from nonfarm activities. The Sikkim being mountain agriculture dependent state and having launched organic farming mission, every rural household has a diversified livelihood and high share of nonfarm income. This finding re questions the finding of Rigg (2006) which says farming income in many cases is insufficient to meet livelihood pursuits. Or is it due to other factors? If so, what are the factors influencing the growth of the nonfarm sectors in Sikkim? How long has it been into existence? To answer all these questions pertaining to nonfarm activities, this paper tries to give an answer.

LITERATURE AND CONCEPTUAL REVIEW

Till 1960s the studies on rural nonfarm income and employment as a development perspective in developing countries were almost negligible and decennial population census was the only source of information for rural India (Vaidyanathan, 1986). Several reasons were cited for the emergence of rural nonfarm employment including growing labour force with less employment opportunities,

fragmenting land available for agriculture and intersectoral -spatial linkages in the labour markets (Bigsten & Tengstam, 2011; Escobal, 2001; J.O. Lanjouw & Lanjouw, 2001; Reardon, Berdegue, & Escobar, 2001; Shukla, 1991). The increase in employment opportunities in rural areas was through the expansion of non agricultural activities (Briones, 2006; Haggblade & Hazell, 1989) and the empirical research of various such nonfarm activities in the rural space since late 1980s, gave a very clear implication of livelihood diversification opportunities (B. Davis, Winters, Reardon, & Stamoulis, 2009; Reardon, 1997).

Nonfarm activities being heterogeneous in nature (Barrett *et al.*, 2001; Reardon *et al.*, 2001), therefore lacking definitional clarity (Saith, 1992). It encompasses a wide range of activities which are not agricultural. It includes varieties of work like business, transport, wage works, services, manufacturing, construction, mining and even processing and trade of farm products in the rural space. It also includes the urban works done by commuters from rural residence (J.O. Lanjouw & Lanjouw, 2001) and work like self employment and wage employment. Self employment could be at the household level or at a micro or a small enterprise level and wage employment could be high paying skilled and low paying unskilled employment (Rahut, 2006). Nonfarm activities have changed the whole traditional pattern of labour use in rural areas as labour is utilized in striking diverse activities ranging from home based cottage industries to sophisticated multinational agribusiness firms, from casual labour works to high paid services (Haggblade, 2007; Rahut, 2006). It grows faster than agriculture (Hossain, 2004) and is important for all categories of households including landless and near landless households (Haggblade, Hazell, & Reardon, 2010).

Haggblade (2007) classifies the emergence of rural nonfarm economy from four different perspectives namely agricultural growth linkages, rural nonfarm employment, household livelihood, and regional development. Agricultural growth linkages regards the growth of nonfarm activities as an outcome of farm growth perspective and farm and nonfarm activities expand hand in hand; rural nonfarm employment views it from the firm perspective, household livelihood views it from the hearth

perspective, and the regional development views it the spatial perspective. Owing to these different perspectives, rural nonfarm sector has been studied by different spheres of academia and therefore the factors causing the expansion of nonfarm activities are classified into economic as well as non economic factors (Anderson & Leiserson, 1980). Because of several problems, employment to a larger mass of people in agriculture is largely diminishing and areas with diversified agriculture are only being able to absorb a small chunk of rural population in this sector (Toor, Bhullar, & Kaur, 2007). People engaged in those singled cropped areas are being made to search for other alternative forms of employments (Bhakar, Banafar, Singh, & Gauraha, 2007). The decision of the rural household members to enter into rural nonfarm activities is guided by number of factors which are generalized into pull and push factors like higher earnings and incentives in nonfarm sector, farming risk, land constraints and vulnerabilities etc (Reardon *et al.*, 2001).

The emergence of nonfarm employment has changed the whole understanding of rural activities. In a way shifting of labourers from farm sector to nonfarm sector has also been taken as an optic of economic development. Not only that the historical perspectives of the household with men on work and women on household productions have also been altered. The concept of the male as a sole breadwinner in a household has been changed with the concept of dual earner through nonfarm employment (Harkness, 2008). And it also dropped a message to every rural individual that it is equally important to attain skill of every other work apart from farming. Emergence of nonfarm activities has been a boon to rural work force in number of ways like additional labour absorption (Haggblade & Hazell, 1989; Meyer & Larson, 1978; Saith, 1992), exhibiting equitable income distribution (J.O. Lanjouw & Lanjouw, 2001; Möllers & Buchenrieder, 2011; Vatta & Sidhu, 2010), major source of household income (Bezu, Barrett, & Holden, 2012; Janvry & Sadoulet, 2001) and reducing rural poverty (Corral & Reardon, 2001; Janvry & Sadoulet, 2001; P. Lanjouw & Shariff, 2004). It helps in arresting rural to urban migration (Reddy, Reddy, Nagaraj, & Bantilan, 2014) since rural urban migration is opportunity driven, enhancing food security (Ruben & Van den berg, 2001), acts

as a source of saving (Deininger & Olinto, 2001), provides more return than farm sector (Jolliffe, 2004) and hence enhancing the saving capacity of the households to farm areas etc. And moreover decreasing farm productivity, diminishing marginal productivity of labour, land fragmentation, land loss due to landslides and urbanization in the state (Barua, Katyaini, Mili, & Gooch, 2014) collectively bound the rural households to participate in non-farm activities for survival or maximizing income and migrating elsewhere. The growth and concentration of nonfarm activities in the rural areas localizes employments opportunities for the rural masses (Anderson & Leiserson, 1980) thus helping individuals to make a living locally (Swenson & Otto, 1997). Nonfarm activities requiring relatively lesser capital (Haggblade *et al.*, 2010) are easy to start and also are well enumerative.

In India several works on nonfarm employments have been done and includes works like that of Vaidyanathan (1986), Shukla (1991), Vatta and Sidhu (2010), Ray (1994), Ghosal (2007), Bhaumik (2007) and many others. Apart from Rahut and Scharf (2008), there is a dearth of spatially relevant direct research on nonfarm employment in context of Sikkim. Every census in India shows the shrinking of the total rural population (Tambe, Arrawatia, & Ganeriwala, 2012) and this is well evident in context of rural Sikkim. This might have been due to the squeezing of the rural space by factors like creation of residential complexes, educational institutions and industrial estates and other likely rural infrastructures. Besides increasing education of rural masses and other relevant transformation, there is a rising concern for rural employment generation. So there has always been an increasing interest on rural non-farm employment to study how the rural livelihood problem is routed out. Operation land holding in Sikkim clearly shows a majority of marginal and small rural houses with small scale farming, so a discussion on nonfarm employment shows a measure to improve the livelihood status of those households.

As because of fragile eco-system agriculture is not able to provide food security and sustainable livelihood to household in Sikkim. And moreover decreasing farm productivity, diminishing marginal productivity of labour, land fragmentation, land loss due to landslides and urbanization in the

state (Barua *et al.*, 2014) collectively bound the rural households to participate in non-farm activities for survival or maximizing income and migrating elsewhere. Nonfarm income acts as a compliment to the farming sector as the nonfarm income is reinvested in the farm. An increase in rural houses increases the chance of having a nonfarm job (Swenson & Otto, 1997), Sikkim which is experiencing an increased rural houses is also similarly circumstanced. Improving farm income also leads to participation in some selective nonfarm activities as a potential substitute to farming sector in the near future (Anderson & Leiserson, 1980). Also the ability of the households to adapt into enhanced capital stock plays a decisive role in nonfarm participation (Thulstrup, 2015) and so is the story with Sikkim.

Objectives

1. To study the composition and contribution of nonfarm activities in rural household's livelihood in Sikkim.
2. To study the factors causing participation into nonfarm activities.

Methodology

For the analysis part, the study is largely based on primary data. The study area is the rural areas of Sikkim where from 300 rural households were surveyed using multistage random sampling from all four districts.

At first all four districts were selected and from every district, one subdivision was randomly selected, from every subdivision one block was randomly selected, and from every block two villages were randomly selected. So from the total eight villages selected, ten percent of the rural households were randomly selected making a sample of 300 households. The different aspects of making a living were surveyed with structured schedules and the informed member of the. Data was collected on household and individual characteristics like total operational land holdings, total cultivable lands, the lists of all income generating activities in cash and kind, education of the members, number of live stocks, total annual income, number of working members and dependents and many other relevant parameters.

Multiple regression technique has been used to study the factors causing non-farm diversification and is expressed as follows:

$$D = \beta_0 + \beta_1 X_1 + U \quad \dots(1)$$

where D represents the dependent variable (Nonfarm Diversification index) in this case. β_1 represents the vector of parameters which explain the variation in the dependent variable, X_1 represents the vector of explanatory variables the list of which is given in table 6 and U represents the vector of the unexplained variables in the model. For calculating the extent of non-farm diversification; Simpson's Diversity index has been used. The formula for Simpson's Diversity index is similarly used by Roy and Khatun (2012) and Saha and Bahal (2014) in West Bengal.

$$SDI = 1 - \sum p_i^2 \quad \dots(2)$$

where $i = 1, \dots, n$, n = number of income generating sources. The value of SDI lies in between 0 and 1, 0 signifies absence of diversification and 1 signifies complete diversification. Given below is the complete list of explanatory variables. Descriptive statistics has also been used to throw light on objectives.

Household Physical Asset Score (HPAS) is a composite score constructed in this work to capture the availability of various physical assets at household level. The maximum possible value could be 8 and minimum possible value could be 0. The availability of the constituent asset was marked by 1 and its unavailability by 0. The constituent assets are phone availability, vehicle, computer, internet, concrete house, other machines³, TV and Tractor/Farm⁴ equipments. Similar technique used by Rajesh Raj, Sen, Annigeri, Kulkarni, and Revankar (2015) to construct an educational infrastructure index gave a cue to develop Household Physical Asset Score (HPAS).

Regional Dummy is taken giving score 1 to East Sikkim district which is relatively industrialized and developed as compared to other districts and 0 to rest.

RESULTS AND ANALYSIS

The table 1 shows the work force profile of Sikkim from Census 1981 to 2011. It is seen that there is a

steady decline in the number of people depending on primary agriculture and commensurately there is an increase in the number of peoples on secondary and tertiary sectors. Even though a slow change, yet it can be implied that the state has undergone a change in the employment structure over the years.

Table 1: Changes in the working populations in Sikkim

	1981	1991	2001	2011
Population	316,385	406,457	540,851	610,577
Total Workers	152,814	168,721	263,043	308,138
Main Workers	147,436	164,392	212,904	230,397
Cultivation	88,610	97,834	101,200	82,707
Agricultural Labourers	4,887	13,793	9,081	11,582
Workers in Household Industry	1,586	1,309	3,168	2,888
Other Workers	52,353	55,785	99,455	133,220
Marginal Workers	5,378	4,329	50,139	77,741
Non Workers	163,571	237,736	277,808	302,439
% of Total Workers to population	48	42	49	50
% of Main Workers to population	47	40	39	38

Note Figures are rounded off

Source: Census 1981, 1991, 2001 and 2011.

The non-farm activities performed in the Sikkim broadly comprises activities like petty trade, small and medium scale manufacturing, owning transport, small scale enterprises, subcontract of works by urban based firms, unskilled wage labour, different self employment activities, government and private services etc which are very much heterogeneous in nature. And also due to the dearth of research in the particular area, there is little account of various non-farm activities in a detailed way. As the National Sample Survey organization surveys capture just the participation in various activities and do not contain the quantitative data on household income. These data are unsuitable for measuring the extent of dependence of population in particular source of income.

Major sources of Nonfarm Employment in Sikkim: There are some important sources of nonfarm employment in Sikkim; firstly government is the largest employer and a major source of nonfarm employment. There are several thousand employees

working in the government sector. Second source is also related to government in the form of rural wage employment under MGNREGA. Several households participate in MGNREGA and income generated from it is also a major source of making a living in rural areas. Private employment is also an important contributor to rural livelihood. There is also a tendency observed among the educated mass to migrate to urban areas and remittances forms an important contributor of household income in their respective households. Other casual employments are also an important contributor of employment to less educated and willing to work. There are several avenues at homes, infrastructure constructions, public related work, small firms etc for casual employment. Several small scale firms and different pharmaceutical industries mostly in east and south Sikkim has also contributed to nonfarm employment generations. State has also witnessed the opening of several institutions like schools in every village, Panchayat Ghar, Block offices, dispensaries and others thus rendering the creation of nonfarm jobs and other services to the eligible workforce. Lastly self-employment is an important contributor of rural livelihood and self employment in the form of transport, tourist home stays and other enterprise formation has helped in generating a source of livelihood.

The study conducted on 300 rural households, about 298 households (99.3%) engage in a variety of non-farm activities. Owing to different reasons, strong differences emerge in the types of rural nonfarm activities undertaken spatially as well as among households (Haggblade *et al.*, 2010). This is so because of additions of newer activities in the rural areas in many forms and accordingly creating additional employment and income generation. Thus considering the different aspects of the work undertaken and taking cue from P. Lanjouw and Shariff (2004), non-farm economic activities carried out in Sikkim can be broadly grouped into three main categories unskilled non-farm casual wage activities, skilled non-farm regular activities, own enterprise activities. The growth of nonfarm sector according to J.O. Lanjouw and Lanjouw (2001) takes place either through multiplicity of activities or increase in the scale of the existing ones. These two components can be judged by the rising earning opportunities of the labourers and rising income

from the activities. Owing to dearth of prior research in nonfarm employment in Sikkim, one cannot in fact prove its growth, even though by showing currently undertaken different nonfarm activities. In case of Sikkim nonfarm activities are small scaled in nature and are employing significantly using lesser capitals as similar to that mentioned by Meyer and Larson (1978) in context of East Asian countries.

Table 2: Types of Main Non-Farm Activity engaged in Sample Household by District

Category of non-farm activity	Name of the District				Total (%age)	
	East	West	North	South		
Casual non-farm activity	78	59	22	42	201	67
Regular nonfarm activity	41	15	15	34	105	35
Self-employment	28	11	9	22	70	23.3

Source: Field Survey

Table above shows the distribution of households participating in main categories of non-farm activities. It shows that non-farm activities under Casual Non-Farm Activity are practiced by about 67 percent households in East, West, North and South districts. These activities include casual labourers in construction, households' affairs, carpentry, masonry, weaving, knitting, potter, MGNREGA workers etc on temporary wage basis. Regular Non-Farm Activities are practiced by around 35% households in East, West, North and South Sikkim which includes private teacher, govt. employee, employees working in some private firms etc. Self-Employment like shop-keeping, contractors, driving, micro and small enterprises etc includes the self employment activities and comprises 23.3 percent of rural households on an average in all the districts.

Duration of Existence of Non-Farm Activities

Analysis of length of time that non-farm activities have existed in operation is important in the study of rural non-farm activities as it provides information on the history of non-farm activities, growth and sustainability in the study area (Bryceson, 2002).

The analysis of duration of existence also gives us an understanding about how different nonfarm activities came into existence.

Table 3: Duration of existence of household in non-farm activity

Year of existence	Name of District				Total (%age)	
	East	West	North	South		
≤4	10	6	3	5	24	8
5-8	73	41	12	37	163	54.3
9-12	12	14	8	8	42	14
13-16	7	5	3	6	21	7
17-20	6	5	2	2	15	5
20+	15	4	2	14	35	11.7
Total	123	76	30	71	300	100

Source: Field Survey

Using the above table, the study found that the majority of non-farm activities in the area have been in existence for the period less than 8 years. This is mainly due to the implementation of MGNREGA. Only 11.7% of activities have more than 21 years of existence. 76.3% of the have been in existence in non-farm employment for less than 12 years. Year of existence of nonfarm activities more than 12 years are those activities which have been carried out since long before like services etc. The discussion with respondents in the study area revealed that several factors have contributed to the observed variations in length of time of non-farm activities. These factors include natural population growth which has increased pressure on land which is the most important productive resource in the study villages and the increased number of customers which has increased demand of goods and services produced by non-farm activities.

Income Obtained from Rural Non-Farm Activities

Various studies concur that a substantial part of rural household income is generated from engagement in non-farm activities (Ellis, 2000b; Reardon, 1997). This study collected information on household income by asking respondents to estimate the amount of income earned from farm, non-farm and other activities engaged in with reference to the year 2015. Despite the poor records of earnings by the surveyed households, income from different economic activities was collected separately. The Table below shows the estimated annual earnings from non-farm activities. It shows that the majority of households earned income between ₹ 0-25000

(22.3%) and ₹ 25001-50000 (18.3%), 65.3% of total household income lies within ₹ 100000.

Table 4: Annual household income from nonfarm activities

Annual earnings (in ₹)	Name of District				Total (%tage)	
	East	West	North	South		
0-25000	33	25	5	4	67	22.3
25001-50000	17	18	4	16	55	18.3
50001-75000	15	12	4	12	43	14.4
75001-100000	14	7	2	8	31	10.3
100001-125000	7	3	1	4	15	5
125001-150000	4	4	6	8	22	7.3
150001-175000	4	0	1	3	8	2.7
175001-200000	4	1	2	4	11	3.7
Above 200000	25	6	5	12	48	16
Total	123	77	30	71	300	100

Source: Field Survey

This study attempted to estimate the contribution and importance of income earned from non-farm activities to total household annual earnings. It shows income earned from non-farm activities to total household earnings for different rural households. The table above shows that a large chunk almost about 22.3 percentage of households have nonfarm income in between rupees 0 -25000, followed by 18.3% in between 25001 to 50000, 14.3 in 50001 -75000 and so on. Overall what we can infer is that nonfarm income occupies an important position in every rural household and comprises a significant level of income to make a living.

Table 5: District wise share of earning from Non-Farm Activities of Household to total household earning

Share (%)	Name of District				Total (%tage)	
	East	West	North	South		
0-10	9	5	0	2	16	5.3
11-20	11	11	3	2	27	9.23
21-30	7	10	1	0	18	12.31
31-40	7	5	1	7	20	9.23
41-50	7	8	2	3	20	10.77
51-60	9	10	1	6	26	15.38
61-70	15	9	2	11	37	12.31
71-80	8	10	8	16	42	10.77
81-90	21	6	5	10	42	9.23
91-100	29	2	7	14	52	10.77
Total	123	76	30	71	65	100

Source: Field Survey

This analysis is done primarily to understand which characteristics are important in determining whether the household will obtain income from one sector against another. Six income sources are estimated these are: agriculture product income sold, livestock income, casual non-farm income, regular non-farm income, self employment, pension and remittances (unearned income). Total income defined here is sum total of income obtained from all the given sources. The table below shows the percentage of total non-farm income to total income, the result indicates that nonfarm income constitutes an important share of every rural household. It is shown that a maximum percentage of (15.3%) household falls in the group of 51-60% of nonfarm income shares, followed by 61-70 and 21-30 having 12.3%. In other words it follows that nonfarm income occupies a significant strength of total household income.

Determinants of nonfarm work participation

Participation by households in non-farm activities by rural households is caused by many factors. According to Ellis (2000a) rural households may decide to participate in non-farm activities in response to economic hardship or in response to emerging economic opportunities. The decision of rural households to incorporate nonfarm activities in their livelihood portfolio according to Reardon *et al.* (2007) depends upon two major factors namely incentives and individual and household capacity. Incentives include the comparative profit and risk of both farm and nonfarm activities and capacity includes different characteristics like assets, human capital (Berdegue, Ramirez, Reardon, & Escobar, 2001; Headey, Taffesse, & You, 2014) credit facilities, infrastructure, location (Canagarajah, Newman, & Bhattamishra, 2001), migration (Wouterse & Taylor, 2008) etc which aids households to undertake nonfarm activities. Literature on nonfarm activities have classified the factors causing nonfarm participation into pull and push factors (Barrett *et al.*, 2001; J. O. Lanjouw & Lanjouw, 2001), where push factors are those which propel households to nonfarm activities and pull factors include all those which encourage or excite towards nonfarm activities. Push factors includes economic hardship like insufficient farm income (Kamanga, Vedeld, & Sjaastad, 2009), poverty (Soltani, Angelsen, Eid,

Naieni, & Shamekhi, 2012) and vulnerabilities and pull factors includes those like regular and high income (Reardon, 1997) etc. There are several context specific, temporal and spatial factors which causes rural household's involvement into nonfarm activities.

Table 6: Regression result showing determinants of nonfarm work participation in Sikkim

Variable	Co-efficients	Standard error
Intercept	-.112	.059
Household head's age in years	0.027	0.3210
Number of dependents	-0.016**	0.007
Family Size	0.003*	0.005
Average number of years of formal education	0.101*	0.009
Distance to market	0.002	0.004
Distance to road	-0.008	0.011
Operational Land Holding	-0.5420**	0.3176
Banking and Credit Support	3.262**	1.5543
HH Physical Asset Score (HPSC)	7.591**	3.4385
Compound cluster	1.652	0.003
Gender of HH head	0.3790	0.1954
Regional Dummy	0.027**	0.017
Support from relative	0.015	0.049
Dependent variable	sdi	
Adjusted R ²	0.738	
F- Value	48.11	
No. of observation	300	

Source: Field survey, 2015-16

Note: * and ** denote significance at 1 percent and 5 percent respectively.

Regression results from table 6 shows the factors causing nonfarm participation, among them household head's age, family size, average household member's education, credit and banking facility, household Physical Asset score, compound clustering, household head's gender and regional dummy to have a positive influence on diversification. Similarly number of dependents in the household, distance to market, distance to road and operational land holding have found to exert a negative influence on nonfarm work participation. Among all the above mentioned variables, regional dummy, HPAC, banking and credit support, operational land holding, numbers of dependents, family size and average household education in number of years have been found to be statistically significant. It is quite obvious that owing to declining land sizes, households totally cannot depend on farming so need to diversify, lesser distance to market and road, higher level of asset possession, family size, human capital etc also provide better scope for diversification. The adjusted R² value (0.7160) and F-value (48.11) both indicate that the model is reasonably good.

CONCLUSION

Non-farm activities play an important role in determining the rural household income in rural areas of Sikkim. A key determinant of success in participation in the more remunerative non-farm activities is education, credit, asset possession, infrastructures etc. Education being the key factor is advantageous in alleviating poverty for those with little land and few migration opportunities if non-farm is to compensate these asset disadvantages. Getting rural households out of poverty and making better livelihood, thus requires considerable effort to keep the young in schools and prepare them to access non-agricultural employment.

Even though nonfarm employment occupies an important role, there are so many problems associated to it. Firstly the scale of nonfarm employment is very small and therefore there are lesser opportunities and not many can get livelihood opportunities from it. Secondly apart from government, private sectors and business has not flourished to a great extend and therefore hindering the expansion of nonfarm employment. Thirdly owing to a very sparse population in most of the villages, enterprise formation is not very lucrative, thus enterprises have to be urban depended and makes it seasonal. Infrastructure has not developed to a great extend and small scale industries utilizing local resources have not come up.

Also there is also a dearth of skills and capitals among people, thus making nonfarm sector relatively undeveloped. And finally people have very high expectations and are not hard working, thus enterprises are not flourished to a significant extend. We can conclude from the discussion that the rural non-farm sector play vital role in generating livelihood, alleviating poverty. However, agriculture provides the livelihoods to the rural poor, it is non-farm sector which provide the safety net against the unforeseen contingencies in future. But the non-farm sector is facing various constraints like dearth of credit and finance, commodity/product market failure, infrastructure constraints (lack of power/water supply/roads) and lack of adequate or appropriate training opportunities to address the skill shortage. So, proper strategy is needed to cope with all these constraint to facilitate the non-farm sector in full-fledged manner.

ENDNOTES

- 1 A nonfarm activity is also called nonagricultural activity as both imply the same thing, so both the words are interchangeably used in this work.
- 2 Farm sector and agricultural sector is also used interchangeably.
- 3 Machines like sewing machine and other construction machines etc
- 4 Tractors are not used everywhere in the hilly terrain, so farm equipments includes all machines and instruments.

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