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Rural Livelihood Diversification and its Measurement Issues: Focus India[1]

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Summary (Riassunto): *The rural structural distinctiveness in terms of resource endowments and factors of production often has bearings on livelihood and well-being of their people, constraining improvement in the economic conditions of farm households solely through farming operations. There is an emerging consensus that the livelihood security and well being of rural households improve with the blending of non-farm economic activities with farm activities and such diversification of rural livelihood positively impacts the farm efficiency. This paper delves into its multiple dimensions and its measurement with respective conceptual framework, indicators, and data inputs from multiple sources and data limitations, with focus on analytical inferences for India. Accordingly the paper articulates the need for further studies on its different dimensions, improvement in the measurement, and data exploration for furthering the Wye Group agenda of rural livelihood development.*

Keywords: Rural households, Labour force

1. Introduction

The issues concerning rural development are largely centered on the iniquitous income, opportunities and access of its populace. These inequities assume accentuated proportions when compared with urban segments. There is fundamental structural

[1] Views expressed in this paper are of author.

differentiation between rural and urban segments in terms of respective factors of production due to the distinct characteristic of rural economies. On account of relatively much intense and intrinsic relationship with natural endowments, the rural economies are generally oriented to production of primary goods. There is a fair generalization in stating that aggregated income accrual to the rural households from production of such primary goods is higher than the urban households. The rural sectors, in turn are net suppliers of primary produce and generally, the net consumers of secondary and tertiary goods and services. The demographics, human and natural resource endowments and their linkages lead to varying permutations of the dichotomy of economic activities and income generation of people and the resultant inter and intra regional differentiations in livelihood and well-being.

The rural urban structural dichotomy is sharper and more dynamic in developing countries. Firstly, the urban expansion and contraction of the share of primary sector (read agriculture) in their GDP is adjunct to the overall development process. If demographic structures in a region are rigid or less dynamic than the pace of restructurings of subsectors resultant to economic growth, the rural urban divide in terms of per capita income accrual is poised for further widening. Secondly, to meet the food security of increasing population, the food factory (the primary agricultural production) would have to be operated more intensely and this process, being land based, would remain located in non urban areas. In other words, there is practically no scope of relocation of agricultural activities, a flexibility enjoyed by non-farm activities. Thirdly, in medium and long term, growth of agrarian segments cannot be placed at the ambitious levels of urban based and urban biased manufacturing and service sectors. It may be argued that even in the event of accelerated economic growth, as witnessed in same of the developing countries with prominent agrarian presence such as India and China, the growth ambitions from agriculture sector would need to be moderate and sustainable with concern for stress on natural resources of water and soil and due to the technological constraints.

The demographic pressure and socio economic inequalities in rural domains of developing countries further complexes the relationship between humans and endowment. For instance, about 30% of world population is in the developing countries of South and South – East Asia with less than 7% world landmass. As derived from FAO Statistics (FAO 2005) this region has almost 40% of world's agricultural dependent population with less than 20% global arable land resources. With such uneven distribution of production assets, low levels of literacy, skills, awareness and connectivity and limitations of alternative options for livelihood, the high prevalence of poverty in these regions becomes the structural corollary.

Against this background, the scope of increasing real income of farmers and bringing sustained improvement in their well being, solely through farming operations, is seriously constrained. There is concern on the incidence of deep rooting of poverty amongst the households depending on single income from farm activities (UN -Wye Group, 2007). The rural economies in developed countries are relatively more diversified and majority of their rural households have larger share of non farm income accrual. The empirical

evidences of change in rural economic and activity composition of developing economies are being documented (FAO-RIGA 2007) and more rural families are earning from non-farm work, the process is slow in several regions due to limited skills and opportunities. The earnings from agriculture continue to be a fundamental source of livelihood for 90 percent of rural households, particularly the poor.

While emphasizing the catalytic role of accelerated agricultural growth for development and overall economic growth, the planning processes have also viewed (World Bank, 2008, Planning Commission of India, 2007) that such agricultural growth may not to be the source of increasing direct employment and earning per head. Considering the negligible employment elasticity to agricultural growth, creation of non-agricultural opportunities, diversification of rural economy and expansion of Rural Non Farm Employment are adjunct to the strategies of managing vulnerabilities associated to the farm sector and bringing meaningful structural change in the rural socio-economic conditions.

Any strategy towards the development and improvement of wellbeing of population therefore needs to take into account these fundamental issues in relation to agrarian structures. The scientific understanding of these differentiations becomes a prerequisite for evolving and implementing development agenda. For sustainable improvement in the rural livelihood, particularly in developing economies, studies on various aspects of the rural economic diversification are the contemporary policy requirements[2]. Since this subject takes into account a wider perspective of economic activities in rural domain, the data profile required to examine its varying dimensions is also expected to be much larger and complex. Often the statistics and indicators are not available from single source in desired format and confirming to the conceptual requirements. It necessitates the mining of rural development statistics for deriving relevant indicators needed for synthesizing rural economy, rural household livelihood and their wellbeing .

2. Rural Economic Diversification - Multiple dimensions

The term "Economic Diversification" relates to the production of diverse goods and services in a production boundary. In turn, it also relates to pursuance of diverse economic activities by the people of a geographic domain for producing larger range of goods and services. Eventually, the diversity of production and economic activities of the people

[2] Rural development used to be a sectoral issue with agriculture as the main focus. In many developing countries agriculture is still the corner stone of the rural economy. In the OECD countries, on the other hand, it has more and more become a territorial concept, dealing with spatial differences in problems and perspectives, opportunities and options. It is also a multisectoral concept, concerned with a wide range of demographic, economic, social and environmental issues. It stresses the importance of cross-sectoral, horizontal integration of activities and policies. Finally, rural development is a dynamic concept, concerned with medium to long term changes and adjustments in technology and ecology, economy and society. Rural indicator should therefore provide information on a variety of economic and social factors.- The Wye Group Handbook 'Rural Households Livelihood and Well-Being' United Nations 2007-pp10.

results into income flows from diverse sources. Such diversification is triggered by the use of resources for production of goods and services from available alternative choices. Often the process of alternative choices also takes into account the efficiency of resource use as well as the opportunity of resource use. Resource allocation itself may get triggered, generally by economic forces, though sometimes there may be non economic reasons, compelling the people to undertake alternative activities. The study domains of economic diversification therefore are certain production boundaries on time and space, and require appropriate observational units and quantitative indicators. Lately, the subject is involving the social scientists to assess its incidence and impact on well being of populace.

As stated above, there is general acknowledgement that not only the economic condition of rural household improves with the blending of non-farm economic activities with farm activities; it has positive impact on efficiency of their farm enterprises. It integrates with the multiti-pronged strategy in the framework of action against poverty, stimulating enhancement of entitlement and access. The **opportunities, empowerment and security** are the three factors that have complimentary and supplementary role in neutralization of economic deprivation. These three factors are also closely associated with the process of economic diversification. If the opportunity of doing multiple activities enhances returns and exposure and thereby empowers the economic and social wellbeing, the empowerment through literacy, skill, knowledge, awareness, resources and connectivity improves the capacity and scope of harnessing the opportunities. The resultant derivatives are augmented remuneration and returns from diverse sources, contributing to stability of economic condition, security, reduction in vulnerability and risk mitigation. Therefore, studies on different dimensions of diversification of rural economy, improvement in the measurement, factorization and impact and exploration of its indicators are needed for furthering rural livelihood development and well-being.

One of the basic forms of rural economic diversification is the **crop diversification**. The diversified cropping pattern in a region emerges due to allocation of arable land resources for cultivation of number of alternative crops. The Indian agrarian space is endowed with diversity of agro-climatic conditions and varying degree of augmentation of farming resource through irrigation infrastructure, crop specific farming technologies, diversified demand and post harvest linkages. Such on farm diversification helps in reducing farming risk due to climatic, market and other such aberrations and often improves resource use efficiency (Joshi et. el 2007). However, the crop diversification has been subjected to resource endowment of farmers in terms of land, water, technology, seeds and soil besides externalities such as agro climatic conditions, sustainability and the response to market (Haque 1999, Mehta 2005). The skewed distribution of infrastructure such as road, transportation, market, post harvest handling, irrigation and power are found to be the impediments for both horizontal and vertical diversification[3]. Nevertheless, the

[3] Horizontal crop diversification: addition of more crops to the existing cropping systems, which is the broadening of the base of the system , Vertical crop diversification : the extent and stage of industrialization of the crops with practicing of enterprises like agro-forestry, dryland horticulture, medicinal and aromatic plants, other high value and economic shrubs.

crop diversification not only indicates the options and opportunities of cropping, it also harmonises the supply to demand of diverse commodities and in the process diffuses the price volatility in the market.

These studies have assessed the dynamics of crop diversification on aggregate allocation of arable land to different crops in a region as well as diversified value of output and related inferences. One may note that in India, at micro level, the operational holding size is small (Average operational holding is 1.3 Hectares) and individual farmers have limited scope of diversification in his farms.

An extension of the same to more meaningful form of **farm sector diversification** is through animal husbandry, poultry and fisheries and its measurement in terms of value of outputs. It has been widely acknowledged that in semi arid central and western India having lesser scope of multiple cropping, animal husbandry reduces the vulnerability of farmers. In the regions where forward integration of small cattle holders has been strengthened by institutions such as cooperatives, the economic conditions of farmers have improved. The cooperatives, self help groups and other institutions of marketing etc. have stimulated the process of on-farm and off- farm diversification by putting the opportunity, empowerment and security as the rural development package. The extension of farming activities to certain on farm post harvest operations not only adds to the farm gate value creation it also expands the production entrepreneurship of the farmers to services.

From the point of view of diversification of economy in the production boundary, one may also look into the existence of enterprises in the rural areas and producing non agricultural goods and services. In India, there is a significant presence of small and tiny non agricultural enterprises in the rural areas. There is preponderance of informal and unorganized enterprises in the rural economy, both in terms of their number as well as workforce. Out of total own account enterprises (without hired workers), 11.1 million (92%) non agricultural manufacturing and 9 million (91%) of service sector (excluding domestic trading) enterprises are located in rural sector (NSS 62nd and 63rd Round, reference period 2005-06 and 2006-07 respectively). However, in terms of GDP, these rural enterprises have much smaller share.

The rural non agricultural entrepreneurial diversification may not be simply assessable in terms of their number and GDP share. There are aspects of economy of scale, operating efficiency and technology used in the corresponding large enterprises located in industrial hubs, which are not easily measurable but impinge on efficacy of rural non farm diversification[4].

[4] In all countries, establishment size, in terms of persons employed, is smaller in rural than in urbanized regions. The average size of establishments differs considerably and systematically among types of regions and countries, the smallest establishments are found in predominately rural regions. As a result, the average size and structure of enterprises and establishments in relation to employment change should be highlighted. In the context of industrial structure, it should be noted that specialization in many rural economies has made them particularly vulnerable to business cycles and resource depletion, for instance in mining and forestry.

The diversification through crops and on and off farm production offers limited perspective of rural economic diversification. It is confined to the production boundary of agriculture and allied sector and producing entrepreneurial units of the farms. Without undermining the significance of such diversification, that eventually strengthens integration of farming with post farming and off-farming activities, the economic gain to its stakeholders will be restricted to the growth potential of farm sector. For the rural economy to sustain in the long run, the scope of its diversification would necessitate expansion to the wider dimensions of **livelihood diversification**. The vulnerability of livelihood in rural agrarian segments of developing countries has been acknowledged and the livelihood security is one of the central themes needing attention in the liberalized and market reformed agricultural trade regime. The rural livelihood diversification therefore is an integral dimension of development agenda for strengthening rural livelihood and sustaining livelihood security.

There are two ways to look into livelihood diversification. One, the individuals and / or their groups perform different activities. In other words, the individuals are capable to engage in the alternative choices in the labour market and undertake different forms of rural employment; both farm as well as nonfarm. From the point of view of rural development, the **rural employment diversification** is considered to be driving force (UN-Wye Group 2007). Two, the **rural income diversification** enabling individuals or households to have income sourced from the diversified sources. There is differentiation in employment diversification and income diversification as both are broadly complementary but may not necessarily be synonymous. The employment diversification is measured in terms of labour force participation in diverse industries and occupation. The wages and remunerations from different employment would add up to income. However, the income diversification is more comprehensive, since it would also account for transfer payments (rents, interests, dividends etc.) to individuals.

As stated above, the crop and farm diversification have potential to augment income and strengthen livelihood. But due to its confinement to labour participation in the farm related activity, it remains diversified in the limited sense. Further, the domain of crop and on farm diversification is the production boundary of primary goods, hence the stability and security of livelihood remains vulnerable despite such diversification. The domain of rural livelihood may extend beyond the rural production boundary. The commutation of rural people to urban neighborhood for their work and jobs as well as income transfers from urban to rural add to the wider dimensions of livelihood diversification. Following sections delve on measurement issue concerning rural livelihood diversification with specific reference to India.

.OECD study quoted in The Wye Group Handbook 'Rural Households Livelihood and Well-Being' United Nations 2007-pp31.

3. Rural Livelihood Diversification : Some measurement issues

The livelihood, either in terms of income or activity participation, is the issue to be measured first in its micro existence where it relates to the individuals residing in different population domains. However, from the point of view of generation of statistics on socio economic characteristics, an individual is identified through the household. *"A central feature of the household is that there is a high degree of pooling of income and expenditure. This means that assessment at the level of the household is more meaningful in representing the potential command over goods and services than would be the case if the incomes of the individual members were treated separately. (The Wye Group Handbook 'Rural Households Livelihood and Well-Being' United Nations 2007-pp181)"*

Household is a multi activity unit. It is the matrix of individuals and the activities pursued by them. The rural farm households (there are issues in defining the term farm household) in the context of their farm and non farm own account enterprises are the managerial units with varying degree of participation of their members. The household labour force surveys (example, National Sample Survey in India, illustrated in next section) dissect the household to capture the labour force and the work participation of its members in different industries and occupation. Hence the derivatives of livelihood diversification in terms of employment and labour force participation can be easily derived from these results. There may still be need to develop composite indicators of work participation for the household, aggregating multiple activities pursued by the members of the households. The labour force enquiry, generally accounts for multiple activities performed by individuals.

There are limitations and constraints in deriving household income and its distribution over individuals as well as in the industry- occupation classifications. The estimation of household income requires assessment of financial flows in the matrix of individuals and the activities within the households. These financial flows may accrue from the wage work, imputations of non wage work and flows from the savings and stocks. When the household activities are unorganized, informal and overlapping as is the case for farm related activities mixed with off farm and non farm activities, accounting such flows becomes difficult during survey investigations. It also needs to be appreciated that in such a complex ambit of financial flows, income derivations would need certain concepts and definitions. The survey cost, informant fatigue and qualitative aspects of data also pose constraints in data generation endeavourers. Comparatively, the methodologies, indicators and data on labour force participation are stabilized and standardized in the periodic labour force enquiry. However, measurement of diversified income of rural household appears to be most relevant for assessing rural livelihood diversification, though it is felt that it may require considerable effort to generate data for this purpose.

As stated earlier, various indices measuring diversification of rural economy such as crop and farm diversification and rural livelihood diversification, both in terms of work

participation in economic activities as well as income diversification require distinct sets of data. A synopsis of the same is given in Table-1.

Table 1: *Metadata for measurement of rural economic diversification (Reference India)*

Diversification Measures	Data required	Data Source
Crop Diversification		
In terms of Area	Season-wise, crop-wise area	Agricultural Statistics
In terms of Value of output	crop-wise value of output apportioned season-wise (National – sub-national)	National Account Statistics
II. Farm Sector Diversification	Crop-wise, subsector-wise (Crops, Horticulture, Livestock, Fisheries, forestry) value of output (National – sub-national)	National Account Statistics
III Livelihood Diversification		
Employment Diversification	Population work participation rates in different activities (aggregate, household classified) (National – sub-national)	NSSO labour force surveys
Income Diversification	(National – sub-national)	Data limitation
	Income accrual from different economic activities (aggregate, household classified) and transfer payments (National – sub-national)	

It is also important to have a perspective of various indicators of rural diversification. Table-2 gives indices of diversification [5] in respect of federal states on India. Different scholars may arrive at different value of the index, depending upon the combinations of factors taken into consideration. In the following illustration, the index value for farm sector diversification will increase if one takes crops in segregation of foodgrains, oilseeds and other crops. Therefore, for any comparative inference, some degree of uniformity and harmonization of data would be necessary. This however, is subjected to harmonized availability of data for different domains.

[5] Simpson Index of Diversity: (1 - $\sum P_i^2$) where, P_i is the proportionate area of i^{th} crop activity or enterprise or value in the gross cropped area or total value of output. The index scales in the range of 0 to 1 with the degree of crop diversification in the respective geographical domain.

Table 2: *Different rural diversification indices (India – sub national)*

State Category (Sub National)	Diversification Measures				Other Explanatory Indicators (% incidence of rural poverty) (2004-05) !
	Crop Diversification Index *		Farm Sector Diversification (2004-05) #	Livelihood Diversification Employment Diversification (2004-05) $	
	Area based (2000-01)	Value based			
RICE-WHEAT STATES					
Punjab	0.730	0.721	0.534	0.665	6
Haryana	0.800	0.810	0.546	0.663	9
Uttar Pradesh	0.801	0.878	0.590	0.509	32
RICE DOMINANT STATES					
Bihar	0.708	0.912	0.726	0.400	33
Orissa	0.725	0.876	0.696	0.524	40
West Bengal	0.742	0.909	0.728	0.577	24
OTHER STATES					
Andhra Pradesh	0.893	0.903	0.707	0.469	8
Gujarat	0.906	0.925	0.653	0.424	14
Karnataka	0.943	0.935	0.716	0.330	12
Madhya Pradesh	0.906	0.916	0.592	0.321	30
Maharashtra	0.940	0.943	0.716	0.358	22
Rajasthan	0.909	0.912	0.609	0.500	14
Tamil Nadu	0.889	0.897	0.706	0.546	17

** Mehta (2005),*
 # Authors computation using National Account Statistics (Diversification group Crop, Horticulture, Livestock and Fisheries)
$ Authors computation using NSS Employment Unemployment survey (61st rd) (Diversification group: agriculture, mining & quarrying, manufacturing, electricity and water supply, construction, hospitality, transport and communication, other services)
! Data Source: Planning Commission

Above analysis reveals some interesting inferences on rural diversification. The indices of rural livelihood diversification are invariably lower than the indices of crop diversification. Punjab and Haryana, the agriculturally advanced regions of India have prominence of seasonal mono-cropping pattern and this is reflected in the lower values of their indices of crop diversification. These regions are also having high cropping intensity that provides more time engagement to farm households in agricultural activities. Yet, these regions also have relatively higher livelihood diversification. Incidentally, both these states have low prevalence of rural poverty. Contrary to this, the regions of Madhya Pradesh, Maharashtra and Bihar have more diversified agriculture but low livelihood diversification. These states have high prevalence of rural poverty. Though, the livelihood diversification

in terms of work participation in different economic activities explains the rural economy more comprehensively, something still remains un-explained in the absence of income data, since it not only captures returns from the activity participation, it also accounts for transfer payments, that is quite significant well being factor in some regions. Moreover, above indices are based on aggregates. The household labour force data can be organized to asses household-wise aggregate status of livelihood diversification, making it more relevant to the household as an economic and entrepreneurial entity.

The next section provides empirical analysis of rural livelihood diversification in terms of employment in India, based on the results of National Sample Survey Organisation (NSSO) of India. The NSSO conducts nationwide multistage stratified sample surveys on various socio-economic aspects and is the prime source of data on key rural development indicators. The scope, subject and indicator coverage of NSSO surveys is given in Appendix – 1.

4. NSS concepts and measurement of Rural Livelihood Diversification

The quinquennial Employment and Unemployment Surveys (EUS) of NSSO provide national and sub national temporal data on Labour Force Participation Rate (LFPR) and Worker Population Ratios (WPR) since the 27th round (October 1972-September 1973) and the results of latest available 61st round (July 2004 – June 2005) are seventh quinquennial in this series. These surveys follow comparable and established concepts of usual and current activity status in the industry / occupation classification of the activity of persons, compatible with ILO concepts. The sample size of NSS 61st round EUS was 79,306 sample households in 7,999 sample villages and 45,374 sample households in 4,602 sample urban blocks.

The NSS concepts identify labour force in terms of activity status of persons that is the activity participation of a person in economic and non-economic activities during the reference period. It identifies the person through household as defined in NSS concepts[6]. In this process, it is possible that the location of activity may be different from location of household. Further, in EUS, NSS captures the economic domain in which the economic activities are performed by the person, following the National Industrial Classification (NIC 1998). The nature of occupation and operations are classified under the National Classification of Occupations (NCO 1968). Accordingly, the activity participation is segregated in economic domain of agricultural and non agricultural enterprises, besides identifying the self employed labour force in agriculture and agricultural labour.

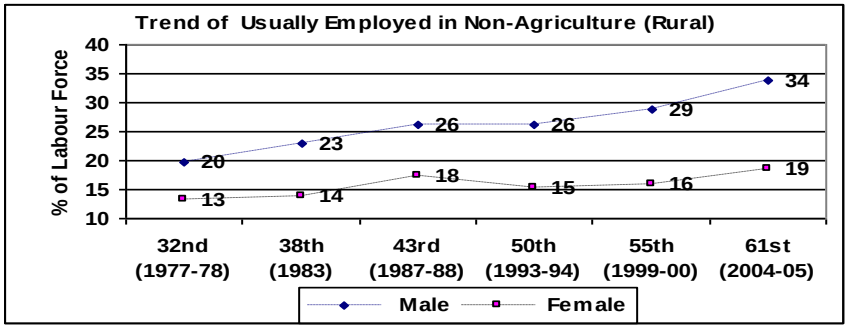
[6] A group of persons normally living together and taking food from a common kitchen constitutes a household. A household may contain one or more members. Members of a household may or may not be related by blood, marriage or adoption to one another. For further details and interpretations of household definition "Concepts and Definitions Used in NSS" may be referred

The published results of NSS do not classify farm households which inter-alia may imply all households with at least one member active in the industry and /or occupation classification of agriculture. The NSS 61st round results do classify households in (a) economic classification depending upon major income share from the activities of all the active members and (b) occupation classification depending upon the aggregate major time disposition of all the active members of the household. Thus the households classified under "Self employed in agriculture households" and "agricultural labour households" may not be the total domain of farm households. Though, the segregation of farm households in the NSS sample is possible through re-tabulation of unit-wise data, the Rural Non Farm Employment (RNFE) indicators and the inferences can be drawn from the available results, keeping in view the aforesaid conceptual considerations (Mehta 2007).

The usual activity status of the persons (reference period 365 days) in the EUS is identified in the industry and occupation classification either as primary activity, or as secondary activity, in terms of time disposition and not in terms of income generation. If the activity of a person is tertiary in nature, it is not getting reflected. However, the tertiary activities are captured in the current daily activity status (reference period 7 days). In the present analysis, **LFPR (**Labour Force Participation Rate) is taken on principal usual activity basis i.e. on the basis of major time disposition in the activities in the reference period of preceding 365 days. The inferences can also be drawn from the standardized concepts of current daily and current weekly status simultaneously available from the NSS surveys. Some key inferences on RNFE and rural livelihood diversification for the Nation and sub national (federal states) level are as follows:

a. Over the years, there is an increasing trend of RNFE, particularly for males. During 2004-05, usually active male labour force in non-agriculture was 34 percent, 5 percent points higher than in 1999-2000 (55th Round). This was highest percentage point increase during any other quinquennial intervals of NSS Employment Unemployment Surveys (Figure-1).
b. The trend of RNFE has accelerated in recent years. Incidentally, this period coincides with the period of economic liberalization and with accelerating growth of overall economy. However, the trend is not gender neutral and female participation in RNFE has not shown any significant increase over the decades.

Figure-1: *Trend of LFPR in RNFE*



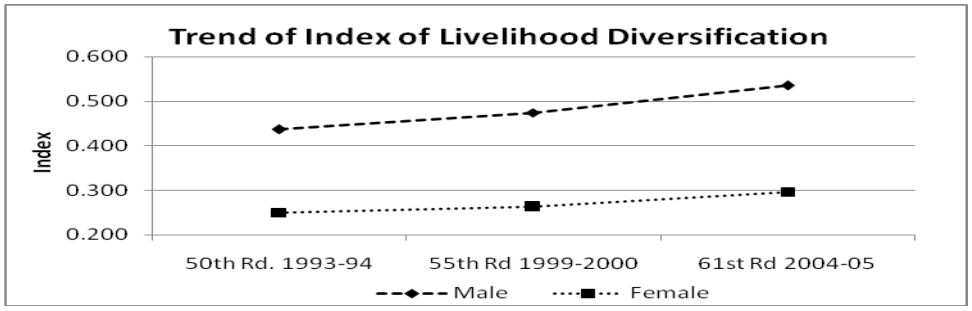
c. Despite the constraints of agriculture sector to further absorb the workforce, the rural employment continues to be predominantly agrarian and 66.5 percent of usually employed male persons, 83.3 percent female persons and 70.8 percent of all persons are engaged in agriculture (Table-3). There is slow but steady decline in rural work participation in agriculture. The work participation in non agriculture is also becoming diversified and the progression of rural livelihood diversification over the NSS rounds is reflected by its index. The pace of diversification in respect of females is much slower compared to the male counterparts (Figure-2).

Table 3: *Percent distribution of usually employed persons by broad industry division*

Broad Industry Division	**Male**			**Female**		
	50th Rd (1993-94)	**55th Rd (1999-00)**	**61st Rd (2004-05)**	**50th Rd (1993-94)**	**55th Rd (1999-00)**	**61st Rd (2004-05)**
Agriculture	74.1	71.4	66.5	86.2	85.4	83.3
Mining and Quarrying	0.6	0.6	0.7	0.4	0.3	0.3
Manufacturing	7.0	7.3	7.9	7.0	7.6	8.4
Electricity, Water, etc.	0.3	0.2	0.2			
Construction	3.2	4.5	6.8	0.9	1.1	1.5
Trade, Hotel & Restaurant	5.5	5.8	8.3	2.1	2.0	2.5
Transport, Storage & Communication	2.2	3.2	3.8	0.1	0.1	0.2
Other Services	7.0	6.1	5.9	3.4	3.7	3.9
All	100	100	100	100	100	100
Livelihood Diversification Index	0.437	0.475	0.535	0.250	0.263	0.297

Data Source: NSS 61st Round Report no. 515

Figure 2*: Trend of rural livelihood diversification for male and female labour force*



d. Amongst the non-farm activities, perceptible change in the activity status is witnessed in service sector mainly in construction, trade, hotel and restaurant. The impulses to increase RNFE in manufacturing and transport, storage and

communication have been relatively weak. Rather, there is a decline in the LFPR in other services in rural areas.

e. There is also a varying sub national pattern in absorption of LFPR in RNFE in the industry divisions (Table 4). Construction sector is most widely absorbing industry division outside agriculture, particularly of male labour force. At sub national level, in Kerala the distribution of LFPR in RNFE is most well distributed over the industry groups. However, in general, manufacturing and services, the two main growth derivers of overall economy, are not having that pronounced a role in stimulating rural labour force engagement.

Table 4: *Dominant industry divisions contributing to LFPR in RNFE in States*

Broad Industry Division	**States with 10% or more LFPR in RNFE in broad industry divisions**		
	Male	**Female**	**Persons**
Mining and Quarrying			
Manufacturing	Gujarat (10), Haryana (12), J&K (10), Kerala (10), TN (13),	J&K (30), Jharkhand (10), Kerala (24), Orissa (17), TN (15), WB (29)	J&K (12), Kerala (14), Orissa (11), TN (14), WB (12)
Electricity, Water, etc.			
Construction	Haryana (13), HP (19), J&K (10), Jharkhand (15), Kerala (15), Punjab (14), Rajasthan (14), Tripura (12), Uttaranchal (11)		Haryana (11), HP (11), Jharkhand (11), Kerala (12), Punjab (13), Rajasthan (11), Tripura (12)
Trade, Hotel & Restaurant	Assam (12), Haryana (11), Kerala (12), Tripura (12), WB (12)		Assam (11), Kerala(13), Tripura(11), WB (10)
Transport, Storage & Communication	Kerala (10),		
Other Services	J&K (11), Kerala (10), Tripura (26)	Assam (10), J&K (12), Kerala (23), Punjab (36), Tripura (36), WB (12)	J&K (12), Kerala (13), Tripura (26)

Source: Author's compilation from NSS 61st Round Report no. 515 (Figures in bracket are % LFPR)

f. The NSS results, besides measuring the activity status and LFPR for persons, also provide useful information on household type, taking into account the aggregate of economic activities pursued by the household members. Table-5 gives the distribution of rural households in household type, classified as major economic contribution from the numerous activities pursued by the active household members.

Table 5: *Percentage distribution of households by household type (Rural)*

Household Type	% households
1. Self-employed in Agriculture	35.9
2. Self-employed in Non-Agriculture	15.8
3. Total self-employed (1+2)	**51.7**
4.Agricultural labour	25.8
5. Other labour	10.9
6. Total Rural labour (4+5)	**36.7**
7. Others	11.6
8. All	**100.0**
9. Agricultural Households (1+4)	**61.7**

Data Source: NSS 61st Round Report no. 515

g. The rural activity profile in the NSS results is also available in the segregation of land ownership of the households. Table-6 gives the distribution of households and household activity type according to land ownership. There is skewed distribution of self employment and rural labour in non-agriculture for the households with land ownership less than one hectare. The percentage of these household types is 85.5 and 83.8 respectively corresponding to 71 percent of the total households belonging to such marginal land ownership. In the household categories owning land more than one hectares, the distribution of self employed households in non-agriculture is relatively lower. Amongst the landless, the propensity of households in non-agricultural labour type and of other activities is higher. This indicates the significance of "push factor" in RNFE prevalent in the preponderant land marginalization in the agrarian economy.

Table 6: *Percentage distribution of rural households by size class of land owned*

Size class of land owned (Hectares)	Household distribution	Household Type in economic activity class		
		Self employed in non agriculture	Rural labour non-agriculture	Other Household
Land Less	6.6	6.7	11.9	20.5
Less than 1HA	71.0	85.5	83.8	68.5
1-2 HA	11.7	4.7	2.8	6.1
2-4 HA	7.2	2.2	1.1	3.4
More than 4HA	3.5	0.1	0.5	1.6
All Classes	100.0	100.0	100.0	100.0

Data Source: NSS 61st Round Report no. 515

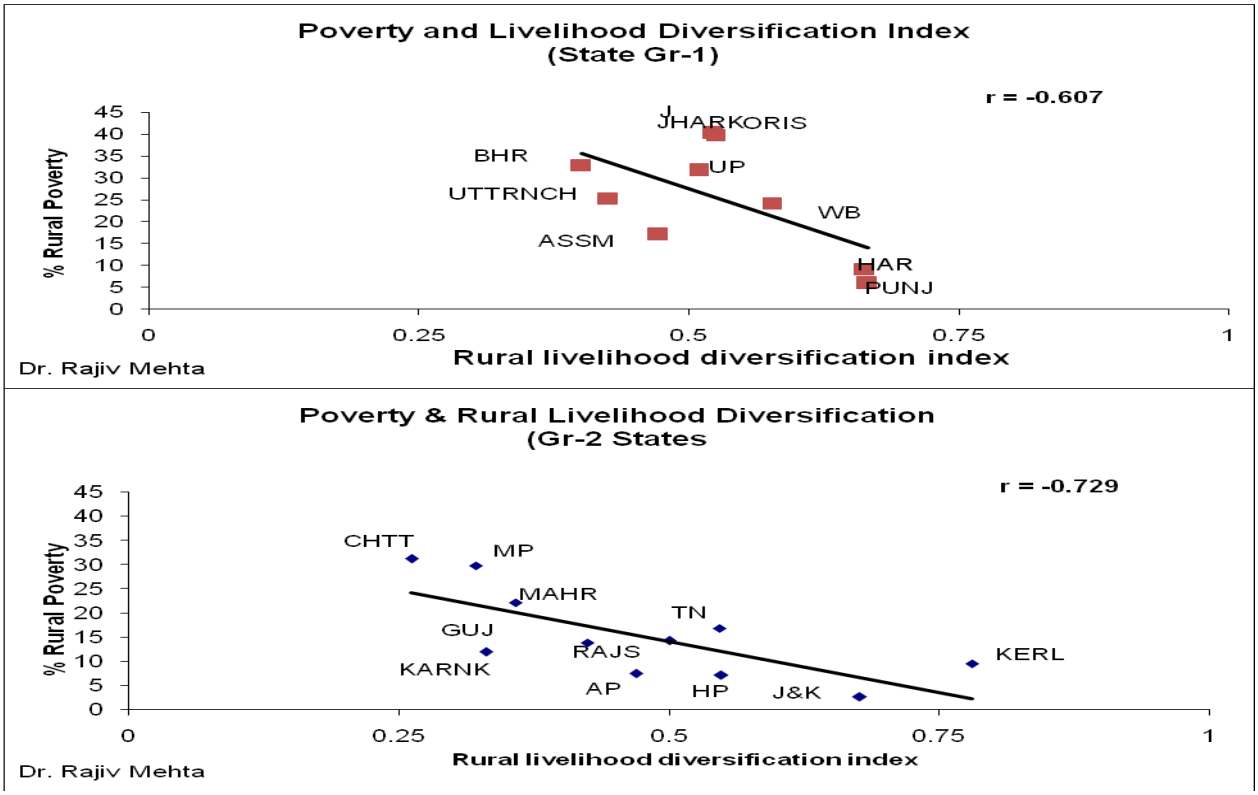
h. **Development correlates of rural diversification:** As stated earlier, RNFE is considered to be an important development catalyst, particularly for defusing the rural poverty (Jha, 2006) and ushering inclusiveness in the growth process. The index of rural livelihood diversification is the composite indicator for labour force participation in agriculture and various non agricultural activities. Though the cause and effects of poverty incidence has multiple dimensions, there are evident correlations in index of rural livelihood diversification and rural poverty incidence (measured through 61st Round consumer expenditure survey).

The agrarian space of the country is very heterogeneous. This heterogeneity brings down the correlation between the considered parameters. Therefore, the correlation has been worked for the states grouped in two broad and more homogenous groups[7]. The states of indo-gangetic plane are traditionally agrarian with prominence of food grain cultivation. The cropping pattern of these states is also subjected to the specific policies and technology intervention, focused on food security. In the other group of states, the agriculture has been more diverse and market oriented. The key inferences are summerised below.

- Rural poverty and index of rural livelihood diversification are negatively correlated. This negative correlation improves on segregation of states in the broad homogenous groups (Figure- 3). Moreover, in respect of Group – 2 states, where the agriculture is less dependent on assured irrigation, crop diversification is generally higher and agriculture is more susceptible to vagaries of nature; the negative correlation between incidence of poverty and the index of rural livelihood diversification is more pronounced.
- While the poverty and illiteracy are positively correlated there exists negative correlation between illiteracy and rural livelihood diversification substantiating the role of education and skill in diversification of activity profile of rural India. In the economically better states like Punjab and Haryana with lower incidence of rural poverty, agriculture is relatively advance and more intensive and crop diversification is low due to dominance of rice and wheat in the cropping pattern. Yet, the livelihood diversification is 0.665 and 0.663 respectively compared to national aggregate of 0.535 for the NSS 61st round reference year 2004-05. Amongst the major States, the index of rural livelihood diversification is highest in case of Kerala (0.780) and state also has high rural literacy and low incidence of rural poverty.

[7] Group-1 (States of Indo Gangatic plane) : Assam, Bihar, Haryana, Jharkhand, Orrisa, Punjab, Uttranchal, Uttar Pradesh (UP), West Bengal (WB)
Group-2 (Other than Group 1) : Andhra Pradesh (AP), Chhatishgarh, Gujarat, Himachal Pradesh (HP), Jammu & Kashmir (J&K), Karnataka, Kerala, Madhya Pradesh (MP), Maharashtra, Rajasthan, Tamil Nadu (TN),

Figure 3: *Relationships between incidence of rural poverty and livelihood diversification*



5. Concluding observations

The Handbook of Rural Household's Livelihood and Wellbeing was a significant milestone in documenting the dichotomy of rural and urban economies as well as agrarian and non agrarian professions in a comprehensive logical framework. In the process, it had dealt at length on the needs of data and indicators for measuring conditions of rural household economies. There is a realistic realization on limitations of generalization of these perspectives over the countries, particularly for developed and developing countries, yet the standardization of measurements in broad coverage of concepts and definition is also acknowledged. This stepping-stone provides scope for further profiling the statistical indicators on livelihood stability and security of rural and particularly farm households. Measurements of rural livelihood diversification and its impact on and relationship to empowerment, opportunity and security of rural population is an important area to be focused in furthering the agenda of Wye Group.

The present paper has emphasized the data needs for deeper synthesis of rural economic composition. There is relatively a better availability of data and inferences on livelihood measurement in terms of work participation as compared to income assessment for the rural households. This may not be a generalization, yet may be holding in case of several statistical systems. However, the household income data definitely enhances the scope of such analysis and resultant policy inferences. There are problems in generating rural household income data in the disaggregation of the income sources. This is more so in cases of preponderances of informal, unorganized and mixed activities in households. Nevertheless, given the complementary nature of these two alternative approaches, the indicators on rural livelihood diversification may be further improved and taken amongst the development indicators.

For profiling the indicators of rural livelihood diversification, certain aspects that may need to be specifically considered are the dynamic assessment of status of rural non-farm employment in the national and sub-national context; major non-farm activities undertaken by the rural households; identify stimulants of rural diversification in terms of empowerment and opportunity for the rural population and their indicators, measures taken for promotion of rural non-farm employment and responses; interventions for capacity building of farm households through HRD, knowledge dissemination, awareness, etc.; institutional support mechanism to encourage and facilitate non-farm employment such as marketing, credit, etc.; provision of infrastructure, specially for promoting diversified employment; extent of involvement of local government bodies, NGOs, cooperatives and policy and programme intervention to facilitation and stimulation of rural non-farm employment.

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Appendix – 1

National Sample Survey Organisation (Please visit NSSO website at www.mospi.gov.in)

The National Sample Survey Organisation (NSSO) is the part of Ministry of Statistics and Programme Implementation, Govt. of India and has been conducting nationwide sample surveys on various socio-economic aspects since its inception in 1950. These surveys are conducted in the form of rounds extending normally over a period of one year though in certain cases the survey period was six months. The NSSO is the main source of large range of rural development statistics. The results of NSSO are generated both for the rural and urban sectors. The subject coverage and corresponding major indicators in the NSSO rounds are:

- **Consumer Expenditure**: Level and Pattern of Household Consumer Expenditure; Differences in Level of Consumption among Socio-Economic Groups;Nutritional Intake; Commodity-wise Consumption; Adequacy of Food; Use of Energy and Durable Goods; etc.
- **Employment-Unemployment and Migration:** Labour Force Parameters by age, sex, industry / occupation classification, , Employment / Unemployment Situation among Religious Groups; Unemployment Situation among Social Groups; Employment / Unemployment Situation in Cities and Towns; Participation of Indian Women in Household Work and other Specified Activities; Non-Agricultural Workers in Informal Sector etc. Nature, Reason and other Aspects of Migration;
- **Household Wealth / Finance**: Household Assets and Liabilities; Household Indebtedness; Household Borrowings and Repayments; Household Capital Expenditure;
- **Health & Hygiene:** Morbidity and Treatment of Ailments; Health Care and Condition of Aged; Maternal and Child Health Care; Profile of disabled Persons; Housing condition, drinking water, sanitation and hygiene; Conditions of urban slums; etc.
- **Education:** Literacy and Levels of Education; Attendance in Educational Institution: Its Level, Expenditure on Education (64^{th} Rd.), Status of Education and Vocational Training; Economic Activities and School Attendance by Children; etc.
- **Non Agricultural enterprises**: **Manufacturing**: Size, Employment and Other Key Estimates; Salient Features; Assets and Borrowings of Enterprises; **Trade**: State Level Results for Small Trading Units; **Services**: Salient Features and Characteristics of Enterprises in Unorganized Service Sector; etc.; **Informal Sector**
- **Land Holdings, Livestock Holdings and other agrarian issues:** Household Ownership Holdings; Seasonal Variation and Other Aspects; Consumption by Farmer Households; Access to Modern Technology for Farming; Income, Expenditure and Productive Assets; Some Aspects of Farming; Cultivation of Selected Crops; Ownership of Livestock etc.
- **Others**: Common Property Resources; Travel by Indian Households; Village facilities in India, Culture, Prices, Situation Assessment of Farmers etc.