

Livelihood Portfolio and Designed Intervention: the Case for Arunachal Pradesh



Lijum Nochi, Debajit Bhuyan

Abstract: Livelihood is in vogue as a concept, approach, method, practice perspective or as a framework for analysis. The intention of this paper is not to delve into the intricacies and simplify the web of shock managements in terms of the five capitals, as in literatures. Instead the attempt here is to cross-examine as to identify within which category or spectrum of income-consumption function the households lies. Further, it is also to underline certain broad outlines that have emerged and are indicative of portfolio of livelihood alternatives in income-consumption shock managements. The study is indicative of the factum that households are at the lower spectrum of the income-consumption pyramid. Being at the lower stratum of the hierarchy, the stressed households are vulnerable to income-consumption shocks. Nonetheless, household either by their own learning or because of intervention and awareness have diversified their livelihoods into a portfolio of activities. Keeping in mind the welfare nature of dispensation and that the majority of the households being BPL (Below Poverty Line) a designed positive intervention is a must.

Keywords: Livelihood Portfolio, Mean Years of Schooling, Interventions and Arunachal Pradesh.

I. INTRODUCTION

The origin of livelihood can be traced back to initial works of Chambers in Mid 1980s, further refined by Conway during early 1990s, finally culminating into their classic paper *Sustainable Rural Livelihoods: Practical Concept for the 21st Century*. The attempt was to work out a detailed analytical frame to encapsulate all dimensions. Thereupon, the concept was further refined by the IDS, University of Sussex, DFID, OXFAM, UNDP and so forth. As of today, livelihood is in vogue as a concept, approach, method, practice perspective or as a framework for analysis. Put simply, livelihood comprises of capabilities and assets to cope and recover from stresses and shocks in maintaining sustainable living with a proviso for progeny.

Thus, it can be perceived as a process by which rural families construct a diverse portfolio of activities and social support capabilities for survival and to improve their standards of living (Ellis; 1998). In doing so, access to capital determines the degree of choices and flexibility that households have over various strategies.

As such, they may lie anywhere on the wide spectrum from survival to coping up or with more available alternatives of adapting (Cox; 2011). Put in plain simple word, livelihood comprises portfolio of alternative strategies so as to even out the income-consumption function, accumulation thereof. Consequently, the two opposing extremes of livelihood diversification are either at the higher income-consumption echelon or under duress. For the former.

It is more a luxury as those in the group can discount greater adversities at lower rate rendering them being risk lover. Those under stressed income-consumption functions are more likely to be risk averse and plausibly render themselves to move recursively towards unsustainable subsistence alternatives including nature based extractions.

In this regard, there is plethora of literature pertaining to concept itself and in both experimental and empirical front, for instance, Decron and Krishnan; 1996, Ellis; 1998, Hussein and Nelson; 1998, Gupta; 2005, Orr et.al.; 2006, Evans and Hindley; 2009, Chand et.al.; 2009, Doward et.al.; 2009, Cox; 2011 and so forth. While there are pool of researches in this front, a gap exists for the hill state of Arunachal Pradesh in the North Eastern Region of India. As such, the pertinent question is to cross-examine the factum; as to within which spectrum in the income-consumption echelon the households lie, in general and how the livelihoods are being managed through portfolio of diversified activities.

II. OBJECTIVES

The intention of this paper is not to delve into the intricacies and simplify the web of shock managements in terms of the five capitals, as in literatures. Instead the attempt here is to cross-examine as to identify within which category or spectrum of income-consumption function the households lies. Further, it is also to underline certain broad outlines that have emerged and are indicative of portfolio of livelihood alternatives in income-consumption shock managements. Hence, the objectives of the study are to

1. Analyse the socio-demographic state and,
2. The diverse portfolio of livelihood alternatives

III. DATA AND METHODOLOGY

The study is based on the primary field survey. Data pertaining to household information was collected using a structured household schedule. It was then followed by collection of information through semi-structures questionnaire, open ended interviews and finally, focussed group discussion. The sample districts are the mid zone districts of Arunachal Pradesh, particularly, East Siang, West Siang, Lower Siang District and West Siang.

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A total numbers of 116 households were surveyed with best effort put upon to enumerate all the required informations in line with census method. A households follows the standard definition of members sharing consumption expenditure whatever be the individual membership contribution make.

Mean Year of Schooling was computed using the UIS (UNESCO Institute of Statistic) formulae. Which is given as

$$MYS =$$

$$\sum_a \sum_l HS_{al} \times YS_{al}$$

Where, HS_{al} is the proportion of the population in the age group 'a' for which the level of education 'l' is the highest level attained. Also, YS_{al} is the official duration of the level of education 'l' for age group 'a' at the time when this age group was in school.

If the official duration of each level of education remains constant over time, the formula for MYS (Mean Years of Schooling) can be simplified as follows,

$$MYS = \sum_l HS_l \times YS_l$$

Where, HS_l is the proportion for which the level of education 'l' is the highest level attained and YS_l is the official level of education 'l' Since, the duration for each level remained static since decades at each level of schooling, the simplified formula holds. As such, the MYS (Mean Years of Schooling) is calculated based on the latter formulation.

IV. RESULTS AND DISCUSSION

The major findings of the study are discussed and summarised as furnished in the Table 1 below.

Table 1: Details of the Households

Total Sample Households	116
Total Population	807
Overall Average Age (in years)	29.82
Male Average Age (in years)	30.1
Female Average Age (in years)	29.65
Average Family Size	6.96
Percentage of Literate	74.10
Percentage of Illiterate	17.84
Average MYS for age group less than 25 years	8.35
Percentage of BPL Households	91.38(106)
MGNREGA Household	96.55(112)
Percentage of Persons Enrolled Under MGNREGA (Absolute Counts)	63.21(469)
Occupation as Percentages of Population	
Farmers	26.55
Govt Sector	12.13
Private Sector	3.91
Continuing Education	39.22
Others (Old Aged, Retired and Housewives)	18.19

Note: Figure within the bracket indicates absolute number. Source: Field data

Table 2: Mean Year of Schooling (MYS) by Age Group

Age Group	Percentage
MYS 6-10	3.16
MYS 11-15	6.18
MYS 16-20	11.02
MYS 21-25	12.38
MYS less than 25	8.35
MYS 26-30	10.12
MYS 31-35	9.85
MYS 36-40	8.16

Source: Field Data.

V. THE SOCIO-DEMOGRAPHIC STATE

The 116 household surveyed had a total population of 807 individuals, of which, about 50.43 percent were male (407 males) and 49.57 percent female (400 females). The overall age of the total sample, irrespective of gender, is 29.82 years. However, the gender specific age for male is marginally higher at 30.10 years compared to 29.65 for female. Another important dimension about the households is that of the big family size. On the average, the family size is almost seven (6.96) individuals per household. Large households membership, at the backdrop of being poverty stricken, is but a multiplier to the agony.

While literacy represents minimum formal education, attempt is made to take an account of those who could read, write, and do simple arithmetic. In case of literacy (Table 1), the overall literate population is 74.10 percent and the rest 17.84 percent are illiterate.

The proportion of population in various categories discussed above provides brief idea of educational status, Mean Years of School (MYS henceforth) gives us a relatively clear picture and is more representative. As such, the MYS is completed, for various age categories (Table 2).

For the age group 6-10 years, the MYS is 3.16 years. With regard to age group 11-15 years and 16-20 years, the MYS figures are at 6.81 and 11.02 years respectively. Further, it is 10.12 and 9.85 years for the age group 26-30 and 31-35 respectively. For the age group 36-40 the MYS is 8.16. MYS was also computed for all those above 5 years and below the age of 25 years, and it is around 8.35 years for the overall study area. The MYS yields a positive picture assuring that any intervention would be anticipated well by educated class of population.

With regard to the economic characteristics of households about 91.38 percent are registered as BPL (Below Poverty Line). This is further assured by the number of households registered under the Mahatma Gandhi National Rural Employment Guarantee Act (henceforth MGNREGA), which gives as a right to members of BPL households, at least, 100 (Hundred) days of employment at pre-fixed minimum wages by the government.

The 96.55 percent of households registered under MGNREGA with issued job cards and about 63.21 (469) persons seeking jobs is evident about households being poor (Table 1).

A large proportion of household members, nearly 40 percent (39.22 percent), are the ones continuing their education. Except for those in the services (government and private sectors, 12.13 and 3.91 percent respectively) the peasant households; farmers who constitutes 26.55 percent has to bear the burden of smoothening the households income-consumption function. The rest of the population (categorised as others); mostly retired persons, old aged individuals and housewives, (18.19 percent), too are partly dependent upon the peasant households. It can be inferred, therefore, that there is deficit in available household labour to be devoted in productive activities to smoothen household's income-consumption functions. These at the backdrop of poverty ostensibly is detrimental to sustainable practices which accentuates the plausibility of a diversified livelihood in negation and in recursive reverse order of unsustainable practices thereby magnifying the traditional nature based extractions.

Notwithstanding above, the broad profile tends to point elsewhere. The general trend shows that households are trying to manage income-consumption in a much more rationale way with outmost emphasis upon sustainable practices. In fact, the households and members thereof are well aware of the unsustainable practices and it is not in their interest to dwell on such practices. This does not, however, relegate the temporal cushioning, but such decisions are at the backdrop of a longer vision to transit to more sustainable livelihood options.

VI. LIVELIHOOD STRATEGIES

One important dimension in livelihood study is the way in which the processes are carried out. About 83.62 percent of households were cultivators, and about 71.55 percent of the households had the sedentary cultivation of staple i.e. wet paddy cultivation. However, this practice was carried out through the institution of sharecropping. The cultivation of staple through peasants own household is, at best, at a nascent stage or is negligible by any proportion. In fact, a greater proportion of activities; except for circumstantial participation, is either carried by either sharecroppers or at best by wage labourers.

Table 3: Household Farm Practices

Livelihood Alternatives	Percentage of Household
Cultivators	83.62
Wet Paddy Cultivation	71.55
Un-irrigated Dry Farming	48.28
Shifting Cultivation	54.31
Plantation	68.1
Gardening	28.45
Livestock	54.31
Poultry	26.72
Piggery	23.28

Fishery	3.45
Natural Capital	
Fishing	100
Hunting	24.14
Trapping	18.96
Extraction/Gathering	26.72

Source: Field Survey

Usually the un-irrigated lands are devoted to dry farming mostly seasonal cash crops; mustard, lentils, ginger, turmeric and so forth, and more than often cultivated hiring wage labourers, mostly the sharecroppers. The 54.31 percent of the peasant households were themselves engaged in shifting cultivation including plantation, in addition to the 28.45 percent of the households who were, too, engaged in gardening.

About 54.31 percent of the households maintained some or other form of livestock, especially, bovine cattle. The maintenance of these cattle is, however, undertaken mostly by herdsman; except *Gayal (Bos Frontalis)* for which there exist a traditional institution for its management. With respect to livestock management one traditional but of diminishing practice is that of backyard poultry and piggery. However, about 26.72 and 23.28 percent of the households still practiced the age old tradition. Fishery is one extraneous and new livelihood alternatives put forth through government interventions. While it accounts popular amongst only 3.45 percent of the household, it is picking up rapidly.

It is evident that the households have diversified to more lurking sustainable options. Nonetheless, the nature based extraction for subsistence seems discouraging, for all households still venture into fishing, in addition to hunting (24.14 percent), trapping (18.96 percent) and gathering or extraction (26.72).

It is evident that the households, in addition to principal farming activity do maintain a diversified portfolio of livelihood alternatives or options. A close qualitative cross examination yields quite a different perspective than the above quantitative information. In case of the access to natural capital or nature based livelihood alternatives except for extraction and gathering of forest produces; gathering cane, logging, mining, quarrying and likes, which are negligible, other exploitations, are but mostly for household's domestic requirements and immediate consumption.

Table 4: Land Use Classifications

Land Uses	Per HH (in Acres)	Percentage of Total Land Holdings
Total Land Holdings	19.45	100
Homestead	0.78	4.01
Staples (Irrigated)	3.04	15.63
Cultivable Land (Un-irrigated)	1.46	7.51
Hilly Slopes	14.17	72.85

Source: Field Survey

One major factor contributing to livelihood of the rural gentry is the availability of land and availability of options for its various uses. It can be seen (Table 4) that on the average the land availability per household is as high as 19.45 acre of which nearly an acre 0.78 (4.01 percent) is dedicated as homestead.

With respect to sedentary cultivation, usually staple cultivation on an irrigated plot the average size of holding is as low as 3.04 acre per household, constituting 15.63 percent of the total landholdings. The cultivable un-irrigated land; usually used to grow cash crops like lentils, mustard, turmeric, ginger etc, constitutes about 7.51 percent of the total landholding which is about 1.46 acres. Rest of the 72.85 percent of landholdings, accounting to 14.17 acres is hilly slopes suitable either for shifting cultivation or for plantations. Thus, households do not have much scope to diversify their alternatives.

Notwithstanding the above, households are gradually turning up to plantations, usually rubber, tea, citrus fruits, bamboo and likes. While shifting cultivation still persist, the implications of government interventions and more through learning by doing, peasants are moving towards more sedentary and sustainable livelihood options. Also, although negligible, self cultivation of staples through sedentary practice by giving away sharecropping arrangement is also an emerging reality. Nonetheless, the harsh reality is the predominance of poverty which for most of the times, renders the households under duress to cushion off their income-consumption function. This has been the pertinent cause of access to natural capital for extraction and gathering and for the persistence of unsustainable shifting cultivation.

VII. CONCLUSION

The study is indicative of the factum that households are at the lower spectrum of the income-consumption pyramid. Being at the lower stratum of the hierarchy, the stressed households are vulnerable to income-consumption shocks, which they try to fend by diversifying the portfolio of livelihood alternatives. As land is one important determinant in securing consumption security of the households, livelihood options are also necessarily conditioned by the availability, type and nature of land. In spite of the best effort by the households to diversify livelihood portfolio they fall back to some unsustainable practices; partly due to poverty and partly due to the topology of available land, to cushion off the shocks. Nonetheless, it is conclusive that households have the tendency to diversify their livelihood into portfolio of activities in smoothing their income-consumption functions. It can be surmised that the recurring nature of stresses tends the households to cushion off the shock and fall back upon natural capital for extraction and gathering and such other unsustainable practices. Nonetheless, household either by their own learning or because of intervention and awareness have diversified their livelihoods into a portfolio of activities.

A lot can still be achieved without much cost involved. Keeping in mind the welfare nature of dispensation and that the majority of the households being BPL (Below Poverty Line) a designed positive intervention is a must. One, the staple requirement; which usually tends the households to cushion off the shocks

through shifting cultivation, can be fended by bringing the available un-irrigated cultivable land under irrigation. In addition to it, better quality seeds, fertilizers and mechanization at subsidized rate can be provided to change the motivation and enhance productivity, thereby securing the food security of the households. Second, the protein requirement; which leads to community fishing, hunting and trapping for games can be secured by incentivising the backyard poultry, piggery and small fisheries orthrough welfare transfer till the transition or shift is complete. Finally, the hilly slopes which are otherwise suitable only for shifting cultivation be converted to appropriate plantations. In doing so, care has to be taken about gestation period in consonance with the shifting fallow cycle; else the poverty stricken households may turn out risk averse, yielding no net benefit out of the positive intervention whatsoever.

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