Stakeholder's Dependence on Natural Asset for Livelihood under Integrated Watershed Management Programme (IWMP) in Selected Watersheds-A Study from Himachal Pradesh

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Abstract. Livelihood has been defined by renowned Scientists or agency in different ways with broader to specific terms. In context to the watershed management, livelihood plays a very crucial role, as it is the core area of the programme. One of the important assets amongst the five assets of livelihood, natural asset has been seen as the most dependable. The adoption of livelihood framework which is most sustainable, can be recommended for policy inclusion for effective implementation at the ground level. The paper is emphasized on the impressions of livelihood options and practices at the grass root level in the selected watershed area and the suggestive inclusions to be made to have the sustainable solutions on livelihood with specific reference to the natural asset.

Keywords: Natural Asset, Sustainable, Livelihood, IWMP

1 Introduction

1.1 Watershed Development Programmes in Indian Context

A report from UNDP (Mihir Shah *et al*, 1998) states that there is a concentration of distress and poverty in the the rainfed and drylands especially in hilly and tribal area. The Ministry of Agriculture started a scheme of Integrated Watershed Management in the Catchments of Flood Prone Rivers (FPR) in 1980-81. During the 1980s, several successful experiences like Sukhomajri in Haryana and Ralegaon Siddhi in Western Maharashtra, came to be reported where watersheds had been treated fully. The Ministry of Agriculture launched a scheme for propagation of water harvesting/conservation technology in rainfed areas in 19 identified locations in 1982-83. In October 1984, the Ministry of Rural Development (MoRD) adopted this approach in 22 other locations in rainfed areas. With experience gained from all these, the concept of integrated watershed development was first institutionalized with the launching of the National Watershed Development Programme of Rainfed Areas (NWDPRA) in 1990, covering 99 districts in 16 states. Meanwhile, conservation work was ongoing in the

Drought Prone Areas Programme (DPAP) launched by MoRD in 1972-73. The objective of this programme was to tackle the special problems of areas constantly affected by severe drought conditions. In 1977-78, the MoRD started a special programme for hot desert areas of Rajasthan, Gujarat and Haryana and cold desert areas of Jammu & Kashmir and Himachal Pradesh (which were earlier under DPAP) called Desert Development Programme (DDP). The livelihood potential of the watershed development programme has not been realized in the previous pogrammes, the report of the Technical Committee on Watershed Programmes in India (DoLR, 2006) says.

1.2 Current Programme

Department of land resources has started implementing Integrated Watershed Management Programme (IWMP) since 2009-10. The scheme is extended to all States and UTs. The objectives of IWMP are harnessing, conserving and developing degraded natural resources such as soil, water and vegetative cover; prevention of soil run-off; rain water harvesting and recharging of ground water table; increasing the productivity of crops; introduction of multi-cropping and diverse agro-based activities; promoting sustainable livelihoods and increasing the household incomes; etc. The programme is being implemented as per the Common Guildlines for Watershed Development Projects, 2008. The components of the IWMP *inter alia* include institution & capacity building, DPR preparation, entry point activities, watershed works, production system & microenterprises, livelihood, monitoring & evaluation.

1.3 Livelihood Concept

Generally, 'development' in broader term is used to improve the quality of life. The concept of sustainable livelihood has been incorporated by many development agencies in India. The Planning Commission (now *Niti Aayog*) has always included the livelihood enhancement through the watershed development programmes. The progress in this aspect could not be very effective and the traditional practices and political influences were felt as the major flaws in their in-effectiveness. Thus, the latest inclusion of various livelihood components in watershed development programmes, seems the outcome of previous learnings in the sector.

A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide

sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (Chambers & Conway, 1992). Any change in capabilities, asset ownership or processes may lead to adoption of a considerable change in the livelihood strategy. The processes which occur and impact the livelihood strategies can be classified as social, cultural, ecological, political, institutional and demographic (Planning Department, GoHP, 2008). The livelihood approach divide individuals into different sectors according to their access to assets (including both material and social resources) and their capabilities to combine them to livelihood strategies for a means of living (Stephen Morse, Nora McNamara and Moses Acholo, 2009).

1.4 **Different models of Livelihood:**

The different models of livelihood depicting the sustainable livelihood framework were given by different agencies from time to time. The common filament that ties all the agencies is that they link their concepts back to the work done by Chambers and Conway in the early 1990s and the definition of livelihood. CARE has worked on the participatory approach amongst the stakeholders before attempting the new livelihood framework and was focussed on core programming principles besides using the light conceptual framework.The framework of livelihood given by Oxfam is broad and is not very effective in case of understanding the link between environmental change and poverty, although it was the major reason for introducing the approach within Oxfam. The another approach followed by UNDP has stressed upon developing the skills of local people and not to use external experts for conducting the livelihood analysis. It focuses on the flexibility of the livelihood framework to cope up with the changes and differences. The another focus area of UNDP approach is the Capacity Building of the stakeholders to fully understand the new concepts of livelihood. However, the gender analysis and intra-household issues were appearing to be neglected in UNDP's livelihood framework. The most reasonable and widely accepted model for sustainable livelihood was given by DFID in the year 2000 and focused on the gradualist approach. The emphasis was given on five capitals and the policies, laws etc. influencing the livelihood strategy internally and externally for the better outcome.

1.5 Sustainable Livelihood Framework:

The sustainable livelihoods approach is a systematic way of keeping and thriving for the objectives, scope, and priorities for development activities. It is based on evolving thinking about the poor and vulnerable lives and the importance of policies and institutions influencing their lives. It helps frame development activities that are:

- people-centered
- responsive and participatory
- multilevel
- conducted in partnership with the public and private sectors
- dynamic
- sustainable

1.6 Vulnerability Context:

The seasonality, shocks and trends that affect people's livelihoods is referred as the Vulnerability Context. The key feature of these factors is that they are not susceptible to control by local people in short and medium term. Importance lies in the identifications of means by which the negative impacts of Vulnerability Context can be minimised. This may be done through building greater resilience and improving overall livelihood security. The reach of poor towards the assets lacks as compared to their richer counterparts and responds very less to have positive trends. (*Source: Sustainable Livelihoods Guidance Sheets, DFID; 2000).* A typical topography of study area shows the vulnerability context in the form of seasonality, shocks and trends and surely changes the access to assets and consequently the livelihood of residents under the watershed area.

1.7. Natural Capital of livelihood

The natural resource stock including land, aquatic resources, trees and forest products, wildlife, wild foods and fibres, biodiversity, environmental services and biological sphere from where the livelihood of a household is derived, comprise the Natural Capital. Sustainable Livelihood Framework, described by various international organizations, have shown that the relationship between natural capital and the Vulnerability Context is very close. There are many

natural processes which even have the devastating effects on the livelihood of the poor (e.g. fire, earthquakes, tsunamis etc.).

1.7 Importance of Natural Capital:

Natural Capital plays a vital role to those who derive all or part of their livelihoods from resource-based activities (farming, fishing, gathering in forests, mineral extraction, etc.). However, its significance goes way afar this. The survival seems to be very tough without the help of major environmental services and the food/energy produced from natural capital. All other capitals of livelihood are directly or indirectly dependent upon this capital. Health (human capital) will tend to suffer in areas where air quality is poor as a result of industrial activities or natural disasters (e.g. forest fires). And although our understanding of linkages between resources remains limited, we know that we depend for our health and well-being upon the continued functioning of complex ecosystems (which are often undervalued until the adverse effects of disturbing them become apparent).

2. Research Methodology

2.1 Profile of the study area:

A North-West Indian hill state, Himachal Pradesh, is a mountainous state and constitute a natural watershed because of its typical drainage system. The four major tributaries i.e. Chenab, Ravi, Beas and Sutlej of river Indus and river Yamuna (which gradually feeds into river Ganges) forms a complete network of watershed in Himachal Pradesh. It is situated within the latitude of 30°22'40" North to 33°12'40" North and longitude of 75°45' 55" E to 79°04' 20" E, having a total area of 55,673 sq. km. The livelihood of Himachal Pradesh is mostly dependent on agriculture and horticulture. However, about 85% of the area in Himachal Pradesh is rainfed. H.P. has incidence of poverty of 28.44 percent which is lower than the national average. Even rural poverty at 30.34% is less than the average for all other Indian States. Of course, the incidence of poverty in rural tribal areas is higher at 63.74 percent than the all-India average of 51.94 percent (*Impact assessment study of socio-economic development programmes by Asia Pacific Socio–Economic Research Institute, New Delhi, 2000*). The study area included the following watersheds from two agro-climatic zones i.e. High Hill Zone and Shivalik High Hill Zone, out of four in Himachal Pardesh: Watershed-I (Nagar-Katrain) and Watershed-II (Chamba)

2.2 Collection of Data

In order to study the livelihood activities in watershed area, methodology included collection of primary and secondary data. The *primary data* include the interviews with multi-stakeholders, focus group discussions, meeting with user groups and self- help groups followed by field visits to the watershed sites. The qualitative data drawn from the experiences gained in field visits as well as interviews held with all the stakeholders was also used for the study. The *secondary data* has been drawn from the previous evaluation studies and the records available with the Gram Panchayats and Project Implementing Agencies besides using MIS application.

3. Objectives of the Study

i. To study different livelihood activities being implemented in the watershed area.

ii. To analyze the livelihood activities in relation to the natural capital of livelihood.

iii. To summarize the findings of the study and recommend the way forward.

The secondary data forms the major portion of the study. In view of the above background, this paper intends to review the existing space for livelihood components in watershed development programme and its shift in Himachal Pradesh. This paper is driven mostly from the secondary information and observations of authors during field hours for several years.

4. Experiments and Cases

4.1 Watershed Naggar- Katrain

4.1.1 Profile of Study Area

The study area has tough terrain and very undulating topography. The precipitation in the form of rain is very high during the period from July to September, which sometimes even turns into cloudburst and finally reduces to very low in the autumn season and low to very high snowfall in the winter season (December- March). The maize, beans and paddy are the major *kharif* crops and the wheat & oats constitute the major *rabi* crops in the study area. Besides this, the people are extensively growing apples and some stone fruits in the higher to middle belts of the watershed area. The people in middle and lower belts are growing the vegetables like cabbage, cauliflower, Capsicum, radish etc. The livestock is another source of living in the study area. The natural sources of water are very few and limited to the lower belt of the study area.

4.1.2 Vulnerability Context

The area falls under rainfed agriculture. There are evidences of flash floods in the past. Thus, people have the access to the natural asset in the watershed area but the dependence on livestocks is more than harvesting the horticultural crops. The most negative impacts of vulnerability are less productions of horticultural crops (e.g. apple, pear, pome-granate, peach, plum etc.), erosion of fertile land in run-off, huge wastage of agricultural crops (e.g. vegetables) and resulting into the lesser generation of economy.

4.1.3 Livelihood Strategy

The major stakeholders of watershed area under Integrated Watershed Management Programme (IWMP) at village level comprised, User Groups (UGs) having equity sharing of resources or the assets created through the programme and Self Help Groups (SHGs) having population mostly from the assetless or landless categories deriving direct benefits from the programme through harvesting natural resources at the preliminary steps.

The detail of User Groups (UGs) formed in different sample watersheds is as below:

Table 1: **Detail of Number of UGs & Type of Activities in the sample micro-watersheds**

			Micro- watersheds			
S. No.	Particulars	Unit	Shaleen	Hallan-II	Devgarh	Hallan-I
I.	Number of User Groups	No's	7	8	7	6
II.	Type of activities/work	-	Crate wire structures, rooftop rainwater harvesting structures, water tank	Crate wire structures, check dams, gabion structures, rooftop rainwater harvesting structures, water tank	Crate wire structures, Bawdi, rooftop rainwater harvesting	Crate wire structures, Bawdi,

The SHGs formed in the watershed area are mainly involved in activities like knitting, weaving and handloom.

Table 2: **Details of Self Help Groups & Types of Activities in the sample micro-watersheds**

			Micro- watersheds			
S. No.	Particulars	Unit	Shaleen	Hallan-II	Devgarh	Hallan-I
I.	Self Help Groups					
	Achievement	No's.	2	2	2	1
II.	Type of Activities SHGs involved		Knitting & weaving	Knitting & weaving	Khaddi (handloom)	Knitting & weaving

The type of activities which SHG are involved in, were exactly in line with the actual demands of the SHGs and properly following the Livelihood Action Plan (LAP).

4.1.4 Asset Garnered

The stakeholders under IWMP Projects in the area are mostly inclined towards the natural asset of livelihood. The key stakeholders i.e. SHGs and UGs in the watershed area are fetching their livelihood from the most dependable and reachable asset i.e. Natural Asset.

4.2 Watershed Chamba

4.2.1 Profile of Study Area

The study area has mountainous and extremely tough terrain, which is hard to access. The area witnesses medium to heavy rains during rainy season, fog and snowfall in winters and a temperature of about 34-36^0 C in summers. However, the area falls under rainfed agriculture. In the agriculture yields, maize, beans and black grams constitute major *kharif* crops wheras wheat and mustard are the major *rabi* crops in the area. Some vegetables like potatoes and peas are grown in some parts. People have ownership of the livestock mainly cows, sheep and buffaloes. The water resources are not plenty.

4.2.2 Vulnerability Context

Several parts of the watershed area are highly prone to the natural hazards like earthquake and landslides. Sometimes, erratic rainfall also disturbs the natural cycle. The most devastating impacts of these hazards results into the less productivity and lowered quality of the produce, which ultimately have the negative impact on the overall livelihood of the community residing in the watershed area.

4.2.3 Livelihood Strategy

The primary stakeholders at the grassroot level who have direct stakes related to livelihood, constitute User Groups and the Self Help Groups including both categories i.e. who are having the land resources and the others who are landless or assetless. The user groups have the proper usage of the assets, created under IWMP Project, for the irrigation, livestock needs and other related purposes which in turn giving a boom to the agriculture and horticulture produce besides enriching the animal husbandry, thus, finally uplifting the livelihood of people with more pace. The another category i.e. SHGs have opted, through a consultation with the Project Implementing Agencies and Gram Panchayat, for fetching a better livelihood through harvesting the locally available raw

material and producing the articles which have great need and demand in the local market. The detail of User Groups (UGs) formed in different sample watersheds is as below:

Table 3: **Detail of Number of UGs & Type of Activities in the sample Micro-watersheds**

S. No.	Particulars	Unit	Jhulada	Micro-watersheds		Protha
				Sungal	Sirhkund	
I.	Number of User Groups	No's	13	1	6	4
II.	Type of activities/work	-	Drinking water pipeline, Irrigation, Roof Top Rain Water Harvesting, Protection Wall, Panihar and Chari	Drinking Water Pipeline	Water Storage Tanks, Panihar	Plantation, Irrigation, Water storage

Table 4: **Details of Self Help Groups & Types of Activities in the sample Micro-watersheds**

				Micro-watersheds		
S. No.	Particulars	Unit	Jhulada	Sungal	Sirhkund	Protha
I.	Self Help Groups					
	Achievement	No's.	14	3	6	7
II	Group Members		Women	Women	Women	Men
III	Type of Activities SHGs involved		Knitting & weaving, Pickle making, cultivation of Off-season vegetables	Bag making	Jute Bag making, local pickle (chukh), off-season vegetables, tailoring etc.	Brass Band

4.2.4 Asset Garnered

Despite of having the vulnerability factors in the sample watershed, the community (especially the User and Self Help Groups) have shown the trust on the Natural Asset. The natural asset is being variously used to get inflated financial assets with the help of human, physical and social assets already available in the area.

5. Findings

i. The community under watershed area, whose stakes are directly involved in relation to the livelihood, are fetching their livelihood from the natural assets.

ii. The access to the natural assets is highly influenced by the local climate and environment of the study area.

iii. The role of policies or guidelines is not very influential but the synchronization between the theme of broad guidelines and actual implementation in watershed area can be seen.

iv. The direct relation between the access to natural capital and gain in the financial capital can be seen in the watershed area.

v. Fetching the livelihood by harvesting natural assets is very close to the spirit of watershed management programme.

6. Conclusions and Recommendations

i. **Dependence on Natural Asset**: The study area from two different agro-climatic zones have similar options for the livelihood, which is through harvesting of natural resources. The dependence on natural asset should be seen aligned with the other capitals of livelihood for a sustainable livelihood framework on the ground.

ii. **Backward and Forward Linkages**: These should be very strong and vary from one area to another as per their geographical, socio-economic status.

iii. **Policies Implications**: The policies should be framed in such a way that they are actually applicable to the local areas for implementation. The participatory approach can be the most appropriate method to develop such policies.

iv. **Synchronization of Capitals/Assets**: One capital of livelihood should facilitate the progression of another capital so that sustainable livelihood model may be generated at micro-level.

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