



livelihoods

today and tomorrow

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‘Kshetram’

Ecologically Fragile and Marginalized (EFM) Zones in India

Our country's strength is its diversity, but at the same time it poses regional imbalances on various socio-economic dimensions. Each region in our country has resources that support the local population's diverse livelihoods. Our country's economy has been primarily based on agriculture and related activities. With increase in population and decrease in land holdings, the dependency on primary livelihoods is at risk and has accelerated distress migration of people in search of employment to major cities. This article is a comprehensive review of livelihoods spread across in our country, as these diverse livelihoods support a large number of people, with resources in the backdrop. We also look at the emerging issues and challenges in the livelihoods domain.



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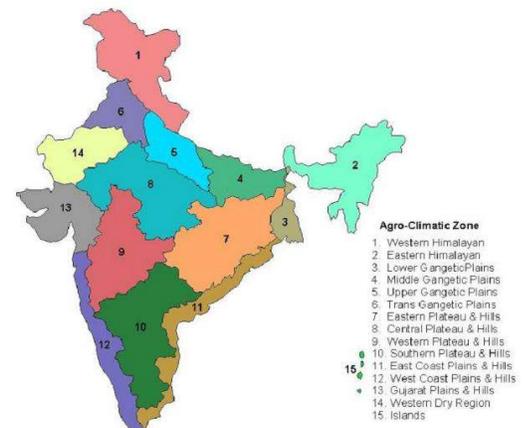
We all feel proud of our country's "Unity in Diversity." Our country has different zones supporting diverse populations and their livelihoods beginning from forests, deserts, coastal lands, wetlands, dry lands, mountains, hill regions, islands, nomads, to hinterlands. Few regions have abundance of resources and while a few have very scarce resources too. Irrespective of the resource base, local populations over centuries have adapted to vulnerabilities, developed coping mechanisms, altered and expanded in new livelihoods arenas. We begin our review with forests- In our country; it has been observed that wherever there is a large concentration of forests, there is also high concentration of tribal as well as rural populations.

Livelihoods of these populations are dependent on forests resources. India's biodiversity is rich and unique. It is one of the 12 mega diversity countries in the world. Our country is home to a vast variety of flora and fauna. According to the World Bank (WB) 1996 Report, we had 6% of flowering plant species and 14% of the world's avian fauna; with nearly 45,000 species of plants and around 81,250, fauna recorded species. We have 80 National Parks (NPs) and 441 Sanctuaries as Protected Areas (PAs). After agriculture, forest sector is the largest provider of livelihoods for about 100 million of population. Forests are the main source of livelihood for more than half of India's 70 million tribal people, the most disadvantaged section who subsist on forests. A huge population is living close to the forests with their livelihoods interwoven and critically linked to the forest ecosystems.

This eco-system provides a variety of goods and services, which include collection of edible fruits, flowers, tubers, roots, leaves for food, medicines; firewood for cooking materials, for agricultural implements, house construction, fencing; fodder for livestock and grazing of livestock in forests. Rural and tribal populations collect a range of marketable NTFPs from the forests throughout the year to sustain and supplement their livelihoods. Activities related to NTFPs provide employment during lean periods in agricultural cycle and also act as buffer against risk and household emergencies. Populations living on forest fringes not just collect various forest products for their own consumption, but also for commercial sale, which supplements their income. Forests are not only a source of subsistence income for millions of poor households, but also provide employment to poor in these hinterlands.

In forest fringe villages, local population's livelihoods include agriculture as well as livestock rearing; these two are the major source of livelihoods, which are extensively dependent on forests for various inputs. Populations rear both bovine and ruminant livestock and forests along with other local common land are the major source of grass and tree fodder. Farmers' livelihoods with forests are inextricably interwoven, where farmers collect small timber, poles and other materials from forest for making agricultural implements, fencing the agricultural fields, leaf litter for manure, herbs and medical plants to deal with pests and so on. Forest eco-systems provide key livelihoods to a large base of population ranging from hunter-gatherers, foraging communities, shifting cultivators to farmers from plains region/ rural communities.

Agro-climatic zones of India



On the other side, in the western region of our country we have deserts! Deserts in Rajasthan and Gujarat account for over 80% of the arid zone in India. Livelihoods of people living in arid zones are tough. These regions are characterized by poor natural resource base, perpetual drought, very high temperatures, very low precipitation, scarcity of water, low content of organic matter. Populations inhabiting these regions have their key livelihoods centered on livestock rearing. They rear small ruminants such as goats, sheep, camels and donkeys to supplement their income from agriculture. The crops which grow with minimal rainfall such as bajra, cluster beans and green gram etc are grown here. In the arid zone, due to limited livelihood options, distress migration is another important livelihood activity and many of the people get engaged in labour work. Mostly men migrate, while women are left behind in the villages and face a difficult life owing to scarcity of water, fuel and fodder.

The productivity is low from the livestock reared due to absence of worthy breeds and scientific management. Handicrafts cottage industries are another key livelihood activity in arid zones. Production of handicrafts is the largest source of income among rural populations after agriculture. There are more than 200 million artisans who depend on this sector for a livelihood and from a poor resource region, this is an important way of livelihood. The main reason for disenchantment among rural populations for agriculture is the difficulty in eking out a sufficient living from it especially from arid zones. Coming to our coastal areas, our country is blessed with a huge coastline of more than 7500 km, characterized by a variety of coastal ecosystems and coastal resources, located in 14 states and Union Territories (UT) spread over 75 districts. The huge resource base is supporting millions of people through coastal livelihoods.

The coastal region is highly heterogeneous and very complex. These belts possess variety of resources, habitats and they are also very rich in biodiversity and can be considered as one of the most productive ecosystems on the earth. The coastline of our country is characterized by several eco-systems and resources. Coastal regions are the hub of large economic activities. The coastal belts provide easy access to oceans, rivers, beaches and other natural areas and are a good source for raw material and food. The regions are rich ecologically and are home to a large variety of eco-systems i.e., mangroves, water bodies, seaweeds, coral reefs, fisheries and other marine life.

Livelihoods of populations living in coastal belts are diversified, as there exist a number of manufacturing units, construction of ports, jetties, trade, ship breaking, large export based manufacturing including oil refinery and petroleum based industries, agriculture, tourism, aquaculture and fisheries. Coastal livelihoods in eastern coast and western coast are unique and have distinctiveness. The main feature of Western Ghats is heavy rainfall and evergreen dense forests and coastal plains and Arabian sea. The local populations are engaged in production of salt as an important livelihood activity. Western coast is home to flourishing textile and diamond industry and a significant number of local populations are involved in these livelihoods.

In Konkan belt, agriculture is an important livelihood activity. Various crops i.e., rice, coconuts, spices and mangoes are cultivated and grown. The city of Mumbai is the biggest industrial and commercial centre in India, providing multiple livelihoods to the migrant populations. In forests of Karnataka and Kerala, elephants are domesticated by the local populations for helping with hauling timber. The Ghats are also home to traditional buffalo rearers; an important livelihood activity. The populations supplement their income by selling milk and milk products. The other livestock reared in this belt are goats; this is due to the hilly terrain and availability of the species in the terrain. Pigs are also reared. Agriculture is the mainstay livelihood activity in Malabar Coast, and commercial crops such as rubber, mango, spices, cashew, spices, coconuts, banana, coffee and cocoa are grown here. It is an important livelihood activity for majority of the local population. Eastern Ghats' livelihoods are unique and distinct. Agriculture is the main occupation. The crops such as rice, cereals, coconuts, groundnut, sugarcane are grown in Coromandal coast. Tea is planted on the slopes of Nilgiri hills. The belt also has rich deposits of iron ore, copper, bauxite,

limestone. Fishing is an important activity. The region has dense semi-deciduous forests covering the region and they are central to the lives of tribal communities who inhabit the region. Livestock rearing is another key livelihood activity. There are many breeds of cattle found here and they are mainly kept for draught and dun. Backyard poultry is a common livelihood and we can find diverse species of poultry.

Local populations dwelling in coastal belts have different livelihoods and the pattern is unique to the region. Fishing is a key livelihood activity, as they consume sea food and it is not available all the time; thus, the communities also take to agriculture and livestock rearing, which is quite distinct from pastoral and forest-based systems. There is a vast difference between the eastern coast and the western coast of the country in geographical and economic terms. The east coast is broader and plains are formed by the deltas of many large rivers viz., Mahanadi, Godavari, Krishna and Cauvery. Shepherd communities migrate with their animals from the coast upwards into the hills of the Eastern Ghats and back again. Apart from intensive agriculture, modern aquaculture activities are proliferated in the eastern coastal states, whereas in the western coastal states, numbers of ports and industries have come up.

The western coast has a large number of Small Scale Industries (SSIs) in the region, with Ahmedabad having highest number of SSI units and majority of these units are concentrated around the Narmada Estuary in Bharuch district. In the coastal belts, tourism has emerged as a major economic activity in coastal states, such as Goa, Kerala and Odisha. It provides livelihoods to local populations. In the hilly regions, livelihoods are unique. Indian sub-continent has seven principal mountain ranges and the largest is Himalayas. The populations inhabiting hilly regions live in fragile landscapes, and marginalization makes it even more sensitive to environmental degradation. Nearly 50% of the world’s bio-diversity hot spots and 32% of the global protected areas lie in these mountains, and they provide economic benefits at local, national, regional and international levels.

Livelihoods in mountain region range from tourism to agriculture, as these eco-systems provide crucial resources and services. Pastoralism too is an important livelihood activity. Livestock such as buffaloes, sheep, goats, camels, cattle, donkeys and yaks are reared. The hill regions receive good number of domestic tourists as well as foreign tourists and tourism is an integral part of their livelihood activity. The local populations run small business enterprises for the tourists; thereby generating income as well as employment. Apart from tourism, forestry is an important occupation of local communities. Commercial tea plantation has been the mainstay of livelihoods and economy too. These tea plantations provide direct employment to many households (plucking season) and also ancillary job to many more in value addition sector i.e., tea packaging, chest-tea plywood and so on.

In the Himalayan belts, apart from agriculture on which the economy is largely based, handicrafts such as zari-zardosi embroidery work on cloth material, furniture manufacturing, brassware, ready-made garments, textile weaving, wine making, food processing industries provide livelihoods. In zones of Uttarakhand, due to rich fauna and flora, the native communities inhabiting the region have their livelihoods surrounded around Pteridophytes, as forests provide important source of food, fodder, medicines and other household articles too. The native population holds huge traditional knowledge and provides services to the other communities. These hilly regions have a flourishing Dairy industry, as the region has close proximity to forests areas and it is easy to arrange for fodder. Mountain regions have rich alluvial soils and the traditional communities inhabiting the region since ages have finest skill in mud craft terracotta figurines, one of the key livelihoods for these traditional communities.

Few zones are dominated by Muslim population, and being landless, their livelihoods center around working in cottage industries i.e, carpet manufacturing, zari work and handloom sector. In case of hilly rain-fed regions, they are predominantly inhabited by the indigenous communities who primarily depend on subsistence farming, and cultivate millets, paddy and other rain-fed crops. The crop cultivation is highly diversified. Backyard poultry, livestock rearing, kitchen gardening are other livelihood activities the populations are engaged in to supplement

their income. Collection of NTFPs is another important livelihood activity. Value addition done to the collected NTFPs is a livelihood, as they supplement their income.

Nomads! A group of communities, who travel from place to place for eking out livelihoods which include being salt traders, fortune tellers, conjurers, Ayurvedic healers, jugglers, acrobats, actors, story tellers, snake charmers, animal doctors, tattooists, grindstone makers, basket makers, itinerants, dancers and dramatists. These nomads work as village watchmen and are also into begging. They prepare brooms, manufacture fish-hooks and also act as snake-charmers. The nomad community's population constitutes 1.2% of the total population. The community provides different kind of services. Livelihoods in islands such as the Andaman & Nicobar and the Laccadives are primarily based on forests, coconuts and the sea. In livestock, pigs are reared by the local populations and the species found are distinct when compared to the mainland. Small and marginal farmers depend on common lands like grazing lands, forests for fodder and often settle for animal breeds and varieties which do not require much maintenance and consume small quantities of fodder. Landless farmers normally keep rearing small ruminants or poultry or sometimes do not rear any animals.

Dry lands/ Drought prone regions of India have difficult climatic situations. Local populations secure their income and livelihoods by use of NTFPs harvesting, collection and processing. This creates several employment opportunities in the drought-prone belt. Farmers, tribals and landless labourers depend on NTFPs for sustaining their livelihood. In hinterlands of our country, there are local populations who depend on different tree products for sustenance and livelihood. The hinterlands suffer from several limitations, mainly high vulnerability due to natural calamities and poor infrastructural development, which makes agricultural productivity very low and livelihoods uncertain. The region is characterized as drought-prone and resource poor from agriculture point of view. Local populations, due to poor resource base, migrate towards cities for ensuring their livelihood.

Migration in dry lands/hinterlands/drought prone regions today is the key livelihood for larger populations. Working in industrial belts as daily wage labourers and on contracts has become a way of life for families who are severely affected by recurrence of drought. Livestock based livelihoods still hold key in this region. Livestock forms an integral part of the people living in dry lands and it is an important source of income. The region is encompassed with very poor resource base i.e., less forest cover, dependence on CPRs for grazing livestock, rain-fed agriculture and high climate variability. The dry lands with poor resource base have traditional farming systems, and it is livelihoods from trees that forms the backbone for practicing integrated farming systems, which were key for self-reliant and sustainable agriculture.

Few dry land regions are also home to cotton ginning industries, providing livelihood to local populations as daily wage labour in industries. In these zones, economy revolves around agriculture and home to many processing units. Textile industries and hub for power loom industry also dominate dry land regions. These manufacturing units located in dry regions, provide livelihoods to local populations. Each dry land zone is unique and is home to many micro, small enterprises and also artisan units. The units are highly diversified; agro-based, cotton textile, wooden, silk, artificial thread based clothes, jute, jute based, readymade garments, embroidery, paper, paper products, leather, chemical, rubber, plastic, petro based, mineral, metal based, engineering units, electricity machinery, repairing, servicing and others. These various small enterprises and artisan units provide livelihoods.

Trees in agro-ecosystems provide different products like gum, resins, floss, fibres, fodder, brooms, fruits etc., for subsistence. Farmers of hinterlands retain these trees on their farms to meet their diversified needs. Livelihoods in Sunderbans! Largest mangrove delta, of the world, with largest floral and fauna diversity, this region has 102 islands of which 58 are inhabited and 48 are forested. livelihoods of population inhabiting mangroves is agriculture, in fringe-villages. Collection of forest and forest products such as prawn-seed collection, unscientific fishing, wood

cutting, honey collection are other key livelihood activities, as mono-cropping is prevalent in the region. Sunderbans, is the largest estuarine mangrove forest in the world having high resource base providing livelihoods to millions residing in this zone.

Key livelihoods across our country are agriculture, horticulture, handicrafts, fishery, NTFPs, temple, livestock rearing (small and big ruminants), aquaculture, floriculture, kitchen garden, backyard poultry, cottage industry, tourism, dairy, manual scavenging, stone cutting, farm labour, pastoralism, nomads’ livelihoods, cobblers and industry sector. In recent decades, due to accelerated climate change, income predominantly from crop based livelihoods has dwindled; thus, affecting agriculture allied activities too. Agriculture and allied based livelihoods, which once dominated the household income, today have seen emergence of non-farm livelihoods as important income generators, irrespective of any region. Changing livelihoods have increased distress scenario at the household level, such as poverty, unemployment. The above factors have been accentuating migration to nearby cities and towns in search of non-farm activities, so as to supplement their farm income.

The growing shift in occupation structure of 70% of rural workforce from farm to non-farm activities is alarming. The non-farm livelihoods that have made inroads are construction work (roads, building etc.), transportation operations, small scale industry works, repairing activities, shop-keeping, salaried employment. Given the diversity of our country with rich resources against the population pressure today, supporting livelihoods of large number of people has become a matter of serious concern due to many external as well as internal factors affecting population’s lives and livelihoods. Close to 70% of our country is rain-fed and agriculture being the mainstay livelihood supporting large base of farm labour as employment and livelihood is shrinking due to climatic variability, irrespective of the regions. On the parallel front, the percentage of small entrepreneurs in recent decades has gone up and diversification in non-farm livelihoods sector is expanding, largely as unskilled labour!

Industrialization versus natural resources; juxtapositioned! Livelihoods of native dwellers are impacted negatively. In case of coastal belts, it has not been able to maintain the balance between economy and ecology, as they are facing serious problems with respect to life and livelihoods. In case of native populations living in forest belts; the large livestock population resulting in huge collection of tree fodder, is adversely affecting the quality of forests. On the desert front, the continuous degradation of resources, such as fodder and biomass, has put limits on development in desert areas. Resources such as permanent pastures are highly degraded and neglected. Excessive livestock grazing has led to disappearance of many plant species and decline in biomass yield.

Mountain eco-systems, the fragile landscapes are facing population growth, climate change and degradation of eco-systems. In hinterlands, degradation of resources resulted in distress migration round the year. Every region is experiencing its own challenges due to climate change and its adverse impact on local populations and their livelihoods. Erratic weather is a continuous challenge for agriculture and its allied sectors. Frequent droughts have resulted in diversion of agricultural land for non-agricultural use. Poor mangroves’ management resulted in damage of the flood plains, affecting fishermen livelihoods, adversely impacting catch investment in habitats. Poor industrial waste management across regions and lax management of wetlands continue to be a threat to livelihoods.

On a concluding note, the changing face of livelihoods across the country is a complex phenomenon of adversity that each region is experiencing. Therefore, there is a need for multi-sectoral, multidisciplinary approach that involves continual interaction and exchange between and amongst various sectors and disciplines. The inter-marriage between traditional knowledge and latest scientific methods is a must for enhancing people’s capacity to address both internal and external factors affecting their lives and livelihoods. ❖