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Eco-tourism

A Sustainable Livelihood Option for Mountainous Communities in Uttarkashi, Uttarakhand, India

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ABSTRACT

Eco-tourism has gained a widespread acceptance in the tourism industry in recent past years and the 'mountain tourism' is identified as a fastest growing sector within this. The Lakes are being visited from many years and the tourism and recreation activities are considered as important ecosystem services of the Lakes.

The present study was conducted on the various aspects of tourism in Dodital Lake and its impact on socio-economic status, employability, biodiversity conservation as well as impacts on the Lake Environment in some selected villages. The preliminary data was collected with the help of structured and semi-structured questionnaire and also from the secondary sources in the district. The results of the study revealed that about 95% of the household in these villages depends on the agriculture as major livelihood source with rearing animal as supplementary option. The tourism is being considered as promising source of income generation and helpful to prevent the migration of youth for employment. Approximately 60% of the household from these villages were involved in the various tourism activities and their average annual income was estimated much higher than the households involve in agriculture only.

The preliminary results are also shows that traditional livelihood sector is influencing due to tourism but being play an important role in the living standards of the household. However, the tourism in the Dodital area has been identified as a key of solid waste disposal and affecting the lake Environment. The need of well planned and sustainable eco-tourism approach in the region is well supported in this paper, could be beneficial for both the people and ecosystem.

Keywords; *Agriculture, Eco-tourism, Fragile, High altitude Wetland, Sustainable, Livelihoods*

JEL Classification:

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Introduction

Mountains are an important ecosystem services and have a significant role in economic development, environmental protection, ecological sustainability, and human wellbeing (ICIMOD, 2011). The diversity, abundance as well as uniqueness of the biodiversity components in various habitats in mountains retain the aesthetic and the serenity (Kaur and Balodi, 2014). The Himalaya containing about 40 per cent of the world's poor (Rasul, 2012) and tourism play an important role in their livelihood (FAO, 2005). Its mountain are considered as youngest and one of the geologically active in the world (Naithani et al, 2009).

The majority of the population in the Himalaya region is in poverty among which between 17% and 36% are living in absolute poverty (World Bank, 2006) and more than 75% of mountain women are below the poverty line (Sherpa, 2007).

The fragile mountains also comprises with various other ecosystem including high altitude Lakes (WWF-India, 2006, Balodi and Kaur, 2014). These important ecosystems harbors rich biodiversity and regulate multiple ecological functions and having potential to contribute to improving the livelihoods of poor, endemic, rural, landless and socially marginalized communities in the form of goods and services (UNESCO-WWAP, 2006).

In recent years with development in basic infrastructure the mountains has gained a wide acceptance as tourism hot-spot and received an increasing number of tourists every years (Kruk, E., 2011). With a paradigm shift in the tourism development, the High Altitude Lakes became the target places. This form of tourism is commonly given a term as Eco-tourism which can be define as "Environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature, promotes conservation, has low negative visitor impact, and provides for beneficially active socio-economic involvement of local populations" (IUCN, 1996). Also, stated as "purposeful travel that creates cultural and natural historical understanding, promote conservation of the ecosystem with deriving economic benefits which linked with the existence of the natural resources that support it (Bandy, 1996).

According to the World Tourism Organization it is the travel with specified objective of such as education, recreation, enjoying aesthetic and

biodiversity, understanding the culture of any area by optimum activities not having serious impact on the ecosystem as a whole with local community involvement, for socio-economic development (Wood M., 2002).

These various socio-economical and ecological aspects make eco-tourism, as a fastest growing sector of the world's largest service industry that is increasing by 20% a year, about 6 times the rate of growth of the tourism industry (Mathew, 2005). India has a diverse economy and the service sector which has seen high rates of growth in recent years. However, in spite of this urban and rural poverty remains a significant problem (UNDP-WTO, 2008). Uttarakhand is endowed with 64.8% of its area under forests (FSI-ISFR, 2013) hence supporting rich biodiversity with a variety of flora and fauna, scenic beauty, lofty snow-capped peaks overlooking meadows, clear mountain lakes, numerous rivers and streams. These natural sites are part of the cultural ethos of the local communities and hold religious sanctity continue to attract tourist and pilgrims from all parts of the world and also play an important role in economic development (Naithani, 2013). The state is known for the home of 'spiritual tourism' or 'sacred tourism' also due to its religious diversity and cultural heritage ((UNDP-WTO, 2008). Thus it becomes imperative for the state to conserve its rich biodiversity while at the same time promote ecologically sustained tourism which aims at providing livelihood for its people. Taking this in account Eco-tourism is being promoted by the state Government to conserve the environment and sustain the well being of local people so that future generations may continue to experience the destinations relatively untouched by human interventions. However, the lack of proper implementation of rule and regulation in tourism activities in the state cause an adverse environmental problem.

The present study was conducted in some selected villages of Uttarkashi district where Dodital Lake holds enormous religious belief and well known tourist destination, characterized with unique biodiversity, landscapes and scenic beauty. The present study was conducted on the various aspects of Eco-tourism in Dodital Lake and its socio-economic influence to the local communities as well biodiversity conservation.

2. Material and Methods

2.1 Study Area

The present study was conducted in Bhatwari block of Uttarkashi District in the Uttarakhand state. The three villages which are located nearest to the Dodital were considered for the study, are namely Agoda, Dandalaka and Dasda situated between 30°50'45"N and 78°28'35"E. at 2100 m asl. The Dodital Lake is surrounded by dense forest and mountain at three sides, is situated at 3031 m asl between 30° 53'51" N and 78° 31'33" E, fed by snow fed stream originated from a alpine meadows at three side of the lake. The outlet of Dodital Lake partially forms river Asi Ganga, a tributary to River Bhagirathi.

2.2 Biodiversity Status

The area is blessed with rich floral and faunal biodiversity with different forest structure. The vegetation ranges from Sub-Tropical Pine Forest to Alpine Scrubs and Herbs. The forests comprise mainly of *Pinus spp.*, *Quercus spp.*, *Lyonia ovalifolia*, *Alnus nepalensis*, *Rhododendron spp.*, *Abies pindrow*, *Cedrus deodara*, *Picea smithiana* and *Taxus spp.*, *Acer spp.*, *Juglans regia*, *Betula utilis* and in shrubs *Neolitsea pallens*, *Pyrus pashia*, *Berberis aristata*, *Rubus spp.*, *R. campanulatum*, *Arundinaria spp.*, etc. In alpine pastures species used medicinal herbs such as *Aconitum heterophyllum*, *Picrorhiza kurrooa*, *Jurinea macropcephala*, *Nardostachys grandiflora* and *Dactylorhiza hatagirea*, etc are found (Balodi & Kaur, 2014).

The area also supports a variety of faunal species such as Himalayan Musk deer (*Moschus chrysogaster*), Himalayan tahr (*Hemitragus jemlahicus*), Snow leopard (*Panthera uncia*), Himalayan Goral (*Naemorhedus goral*), Black bear (*Ursus thibetanus*), Common leopard (*Panthera pardus*), Hanuman langur (*Semnopithecus entellus*), Rhesus Macaque (*Macaca mulatta*), etc. In term of avifauna the area provides home to about 200 species. The various species of reptiles, amphibian and insects are also found in the study area (Balodi & Kaur, 2014).

2.3 Methodology

The survey was conducted with the help of structured and semi structured questionnaire in three villages for entire households (160) which captured data on demography, livelihood practices, and engagement in tourism related activities and income generated from

different sources and perceptions of tourist. The secondary data was collected from different Government departments such as Forest Department, Department of Tourism, District Statistical Department, Gram Panchayat, etc. The data was analyzed using Origin 6.1 Data Analysis and Technical Graphics software.

3. Results

3.1 Socio-economic Profile

3.1.1 Demographic and Educational Profile

The three villages comprises of a total of 160 household with a population of 781 individuals both male and females. The total population consists of 51% of female and 49% of male individuals. A total of 78% of individuals are literate while 28% are illiterate (Figure 1). The female Literacy rate was 59% while male Literacy rate was 83% among the population.

3.1.2 Involvement in Livelihood Practices

The households are involved in various income generating activities to sustain their livelihoods. The main source of income generation in this area is agriculture followed by animal husbandry and tourism but laboring play a major part in all of them. Households are also engaged in other occupations such as carpentry, masonry, and teaching, or other government services.

A total of 95% of households were involved in agriculture, 90% in animal husbandry and about 60% of households were involved in Tourism Related Activities (TRAs) while 90% of households were involved in laboring activities (Figure 2). The data shows involvement in designated activities that is even if one member is involved from the same household.

3.1.3 Average Annual Income

The household in these villages involved in various livelihood generating activities and earn substantial money to fulfill their needs. The major part of the income among all households comes from agriculture sector which is followed by tourism. The average annual income of households in these three villages was estimated approximately INR 29,958 (Figure 3). The average annual income of households engaged in eco-tourism related activities has grown up to many

fold than the households dependent only on agriculture and animal husbandry.

3.2 Involvement in Tourism Related Activities

Eco-tourism is emerging as a promising livelihood practice in the region and households which are involved in the TRAs are in various job profile. Some of the households are the lodge owner and Dhaba owner while most of the members involved as nature guides, instructors, mule owners, group organizer, cooks and porters. Some households are involved in multiple sectors within TRAs (Figure 4).

In the term of eco-tourism services the activities like trekking, mountaineering, rock climbing, skiing, snow biking, angling, rafting, bird watching, training in various schools, training camps, etc., are being provided by the practicer. Some households also provide home stay facilities to the tourists. These services are provided in whole Asi Ganga Valley, as well as within the district, throughout Uttarakhand and various other cities of the country. The most of the guides are trained by the Nehru Institute of Mountaineering, Uttarkashi as well as in some training camps organized by the Uttarakhand Forest Department. The youth are self employed in TRAs and many are also associated with the well known adventure companies and earning a good emolument. The involvement of women in TRAs was also found during the study.

The tourist flow in the region is seasonal and eco-tourism based livelihood is not a persistent income source but individual involve in TRAs received an amount of Rs 400 to 1500 per day depending upon the expertise and experience to guide the visitors. The household involved in TRAs received an average of Rs. 3000-4000 per month during the active months.

3.3 Trends of Tourists Arrival

The Dodital is most the targeted destination for the national and international visitors. Tourist season is intensively found in the summer but flow is throughout the years except December to February. The tourist visited this region arrived as various categories such as pilgrims, adventurous group, trekkers, nature lover, researchers and civil services trainees, etc. The Dodital is preferred to visit for escaping from overcrowding in easily approachable areas. The data collected from District tourism department reveals that from the year 2004 to 2012 about 11016543 national tourists visited Uttarkashi, out of them 47416 (2.3%) people visited at Dodital

and about 21545 international tourists visited Uttarkashi out of which 1098 (0.19%) people visited Dodital. The area received good number of visitors from last three years but it was decreases due to flood disaster in the valley (Figure 5).

3.4 Role of Tourism in Livelihood

Eco-tourism has an important role in the life of inhabitant communities in the region. The survey results on community perception shows that tourism has change their living standard and educational status and played an important role to reduce migration from these villages. The results also revealed that the households which are not directly involved in TRAs also being benefitted in the form of increasing basic facilities to the region (Figure 6). The figure shows that 55% of household believed that tourism has completely changed their livelihood while 20% household accepted that it has moderately impact on their livelihood. The 14% of households said that tourism has a good role in changing their livelihood while 8% said average and 3% households said that there is no role of tourism in their livelihood.

3.5 Tourism and Environmental Threats

The raising concern of solid waste management is increasing with increase in number of visitors and related tourist activities, in camping site, trekking route and nearby the lake. The major type of waste found include polythene bags, left behind materials of different consumed food and beverages, and wrappers of toffee, chips, etc. This is being the major problem in high altitude region including lake areas. The open defecation nearby lake and track was also a major threat to the water quality.

Since the area is located near the source of main river Bhagirathi tributaries which contributing the pollution in the river Asi Ganga and other water sources too. The growth in tourism has assumed enormous proportion which effecting the carrying capacity, which is critical to the environment.

4. Discussion

Tourism is a major engine for generating employment and sustainable livelihoods to cope up with the poverty, among which eco-tourism is realizing as an innovative livelihood option for the mountain region. There is undeniable scope to promote eco-tourism and income retention for the

poor in the Indian Himalayan region by facilitating links between tourism and the local product system. As the Government providing subsidies on developing tourism related infrastructure in the region and increasing trends in tourist arrival every year indicate huge potential to sustaining the livelihood by TRAs. Trekking and mountaineering are being major tourism activities that have potential to uplift thousands of mountain people out of poverty. The increasing interest of local youth in eco-tourism may be very fruitful if they have provided special training with major concern to conservation of natural resources of the area. The opportunities are immense if the initiative taken for linking local craft industry with the tourism. But there are also various challenges hamper the proliferation of tourism in the region. The region is under considerable pressure due to the unsustainable infrastructure development, and day by day increasing dependency of local population on natural resources. The uncontrolled grazing, fuel and fodder demand along with global climate change impact and naturally occurred disaster in the region hold back the socio-economic development time to time. This affects the arrival of visitors in the region and major involvement of outer people as tour operators encroached the opportunities of local inhabitants. The lack of awareness among the communities, tourists and lack of good policies for eco-tourism contributing in generation of pollution and damaging of natural beauty being another challenge.

5. Conclusion

Tourism has an important role in to sustain the livelihood of the communities in the region. The increasing trends in tourist arrival assumes potential of the growth in this sector but at the same time putting pressure on the ecosystems. The area is ecologically and geographically very sensitive and need special care in order to provide adequate infrastructure facilities to pilgrims, tourists, shopkeeper, villagers who are directly affected by the growth of tourism, at the same time care for environment. With the growth in tourist arrival and changing lifestyle the special care needed to sustain the local identity, traditions, culture and heritage of the region. The appropriate policies implementation in respect of eco-tourism development and natural resource conservation for the region needed must. A well planned eco-tourism practices and their promotion for the region will work as a tool for sustainable social and economic development.

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Appendix: Figures Used¹

Figure:1

Figure 1: Demographic and Educational Status of Households

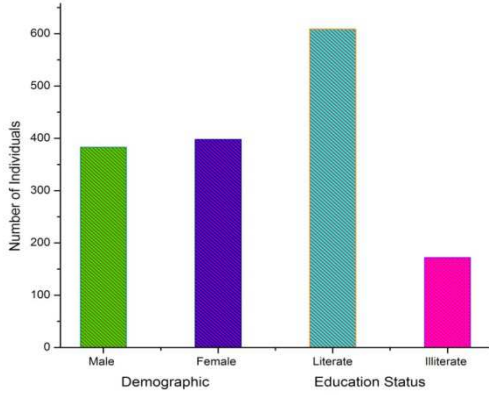


Figure: 2

Figure 2: Involvement of Households in Various Livelihood Practices

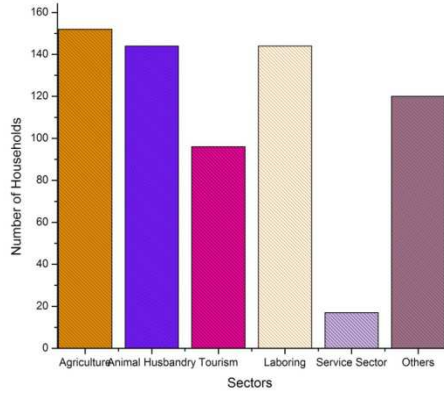


Figure: 3

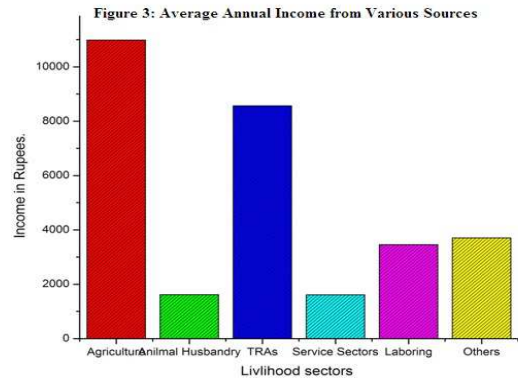
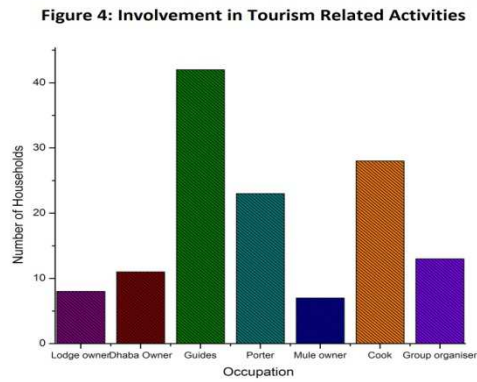


Figure: 4



¹ Source: Figures from Uttarkashi Forest Division

Figure: 5

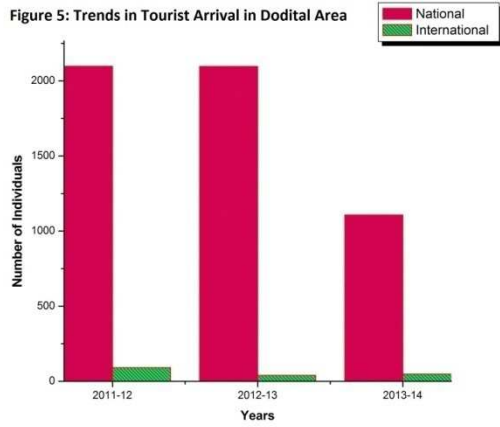


Figure: 6

