The paper shares information on canopy tourism initiatives in India. These tourism initiatives have been analysed from the perspective of people’s participation in decision-making, project planning and implementation and their contribution to conservation. Case studies on the canopy tourism initiatives in Kerala – Elevated walkways in Thenmala and Tree houses in Waynad, provide an insight into this emerging form of tourism.

The idea of canopy tourism is gathering momentum throughout the world emerging from the South and Central American countries to the Asian countries, especially in South East Asia. Many states in India like Kerala, Maharashtra, Andaman and West Bengal have come up with similar initiatives in sensitive and ecological fragile areas. In some places it is just walkways or places of stay, while some are transporting mechanisms like ropeways and support adventure activities.

Methodology:
Information about different forms of canopy tourism was identified by secondary research. The case studies are based on field visits to Jungle Park, Green Magic- 1, Wayanad and Thenmala Ecotourism Project at Kerala. The Jungle Park, Green Magic Resort claims to have constructed the first tree top house in Asia. The Thenmala Ecotourism Project has an elevated walkway which is very similar to canopy walkways. Data from interviews with officials in both projects were also used to compile the case study.

Concepts & forms of canopy tourism

**Canopy Walkways**
Canopy walkways are bridges between and in the canopy of a forest; mostly linked up with platforms inside or around the trees. They were originally intended as access to the upper regions of ancient forests for scientists who conduct canopy research.

**Elevated Walkways**
Elevated walkways are walkways built across the canopy at different levels so that tourists are able to get a close look at the canopy from the walkways at different heights.

**Tree Houses**
Tree Houses are houses constructed in the trees just below the canopy. The birth of the concept of tree houses is linked to ways of living of tribal communities. Tribal communities in Kerala used to construct houses in the trees to protect themselves from animals. Tree houses for tourists were modelled on these original tree houses.

**Zip Line**
A zip-line (also known as a flying fox, zip wire, aerial runway, aerial rope slide, death slide or tyrolean crossing) consists of a pulley suspended on a cable mounted on an incline. It is designed to enable a user propelled by gravity to traverse from the top to the bottom of the inclined cable, usually made of stainless steel, by holding on or attaching to the freely moving pulley. Zip-lines come in many forms, most often used as a means of entertainment.

**Aerial Ropeways**
Aerial Ropeway is an arrangement of overhead cables suspended from towers and supporting travelling buckets used for transporting people, usually over rough terrain. Aerial ropeways are almost similar to “sky trams a high technology cableway that gives the opportunity of intermediate ride with short stops to observe the cloud forest biodiversity”. Though sky trams are not found in India.

**Canopy Tourism and its linkages to Ecotourism**
In the current scenario more and more ecologically sensitive areas are being opened up for tourism wherein in many adventure activities are promoted in the name of ecotourism. ‘Ecotourism’, which was meant to refer to a set of principles, has been reduced to a “product” that overlooks environmental, social and economic benefits to communities and ecosystems that it is supposed to deliver on. In this context, the following section looks at critical
components of ecotourism as it should be practised and the extent to which they are practised in existing canopy tourism projects.

Conservation
One of the important aspects of ecotourism is that tourism activities lead to conservation of the ecosystem, where it is operating. It incorporates principles of conservation of natural resources and biodiversity; rational utilisation of resource: land, water, conventional and non-conventional energy sources, for creation and maintenance of tourism infrastructure and facilities that are in coherence with the needs of local environment and culture. Any developmental project affects the ecosystem it operates in. For any ecotourism model, it is important that cumulative impact assessment is done prior and post projects to ensure that the impacts are minimal.

In the case of canopy tourism, the aspect of conservation has been overlooked. In most cases (walkways, ropeways) it requires heavy infrastructure development and investment. For example the Uttarakhand Tourism Board has recently invited bids for finalisation of ropeway projects. "The three ropeways include the celebrated Dehradun-Mussoorie ropeway that alone is expected to cost Rs.800 crore. The other two projects are the Jankichatti-Yamunotri and the Thuligad-Purnagiri ropeway that are much smaller, costing Rs 30 crore and Rs 17 crore, respectively.” The environmental impacts of such infrastructure heavy development are not measured prior or after the projects. Also to recover the cost of investment, it is difficult to limit tourist numbers. Usually mass tourism becomes necessary for such models for financial viability and the conservation aspects are not addressed.

Community participation & benefit sharing
Another important component that needs to be addressed is the community participation in the canopy tourism. For any tourism project to be sustainable, the involvement of local communities in the planning, implementation and monitoring phases of the project is essential. Involvement of local communities from the planning phase helps them in understanding the project in a broader sense and how the benefits emerging out of such projects could be channelled to the local community. It is also essential to involve local communities to engage with tourism development and plan tourism in more sustainable ways in line with traditional customs and practises and governance.

In canopy tourism, the participation and benefit sharing depends on the scale of the operations of the project. Since many of the canopy tourism models are aimed at high end tourists, small community based initiatives are non existent as they find it difficult to make these high investments.

Institutional Mechanisms
Ecotourism requires an institutional mechanism, where there is a scope for discussions on the objectives of tourism development, monitoring, decision making and benefit sharing mechanisms and a platform where people’s concerns are addressed. A multi-stakeholder platform involving the local communities, panchayats, tourism industry and the government involved in the development of the project needs to be constituted wherein tourism activities are regulated within the existing laws and policies to ensure that the project is environmentally, socially and economically sustainable.

Education & Interpretation
Another key element of ecotourism is the education and interpretation for the tourists. Educating the tourists about fragile ecosystems and their links to lives of local communities is an important component of minimising tourism impacts. Canopy Tourism provides an important scope for the education of tourists on these aspects. An education and interpretation programme would help them understand the importance of the canopy they are visiting and enjoy nature in a more environmentally sensitive manner.

Case Studies
Elevated walk Way at Thenmala, Kerala
This was commissioned in 2002 at the adventure zone of Thenmala Ecotourism Project (Government of Kerala undertaking) at Kollam, Kerala. The elevated walkway is built in an area, which was once reserved Forest. The land was given on lease to the irrigation department for the construction of Kallada Dam. After the construction work was over, this land area was transferred to tourism department for ecotourism development in the late 90s. The walkway which starts from a deck passes through the canopy and ends in a road at the upper part passes through the canopy at different levels. This walkway has total length of 120 metres and the maximum elevation point is 21feet. The walkway is supported by 11 reinforced concrete pillars and the steps and platforms are made out of huge quantity of
wood – ‘Kambakam’. The walkway connects 11 trees and was built at a cost of Rs. 25 lakhs. Around 25,000 tourists pass through this walkway annually. This is not uniform and during certain holidays, the number exceeds 250 tourists per day. At some points of time, the tourist number goes beyond 50, especially when an excursion group comes, making it unsafe. With many tourists at a time, the scope to peacefully enjoy the canopy or understand the ecosystem more closely is limited. An observation of the officials reveals that the nesting of the birds in the area has reduced. But since no record of nesting was taken prior to the project, the actual impact is not known. A number of Bonnet Macaques are seen in the canopies. There has been behavioural change in the monkeys with tourists feeding them. The monkeys have been reported to snatch food items from tourists. There is no participation of local community in the project. On a positive note all the trees in the zone are named and this helps the tourists to identify the trees

Tree Houses at Wayanad, Kerala
1. Jungle Park, Green Magic-1
The first tree house was built as an innovative tourism product in the late 90s by the Jungle Park, Green Magic -1. The idea was taken from the tribals building huts in trees to keep safe from elephants. The tree houses are erected in a coffee and cardamom plantation area. Certain types of trees like the ‘Koli’ are selected for the construction of tree houses due to their strength. The property has two tree houses. One of the tree houses got partially damaged recently. The two tree houses on the property are at a height of 90 feet and 135 feet. The cost of the construction ranges between Rs.15-20 lakhs. Every year after the rains the platform has to be changed and the ropes and the water bags used for the lift system to carry tourists up to the tree house have to be changed once in 6 months. The maintenance cost is also high as everything has to be carried from Vythri to the resort and then from the base of the tree to the top. The location is very remote and the road access has also to be maintained. One tree house requires 5 to 6 support staff in addition to ground infrastructure like kitchen, restaurant etc. Thus financial viability is higher when it is a part of a conventional resort. Tourists just enjoy the scenic spot, unique location and tranquillity. There is no element of education or interpretation about the canopy ecosystem or the flora and fauna. In tree houses, there is an element of risk and tourists are prohibited from drinking and kids are not allowed to stay from the danger of falling down. Smoking is also prohibited due to fear of causing fires. The participation of local community is limited to construction of tree huts and its maintenance. Since the tree houses are attached to the conventional resorts, which are in the ground, the day to day operations of the tree houses are also maintained by the staff of the resort.

2. Vythiri Resorts
The tree houses were constructed one year back. The Jungle Park Resort was closed down for some time. There was demand for tree houses by tourists as well as tour operators at this point of time and thus started the initiative. Two tree houses were constructed within a span of 4 months costing around 35 lakhs. The tree houses are erected in a property of 150 acres, where the resort area is 30 acres and the rest is plots and plantations. The tree houses on the property are at a height of 90 feet and 60 feet. Every year the bamboo roof and bamboo ply are to be changed and repainted. Stay in the tree house is expensive as the cost of accommodation goes up to Rs. 12000 per day. 95% of the guests are foreigners and the tree houses are booked for 300 days per year. The tree house needs 6 support staff to serve the guests. Tourists are taken for morning and evening trails and naturalist accompanies them, but education on canopy ecosystem is nil. Liquor consumption, smoking and children below 12 years are not permitted owing to safety reasons.

Analytical views of case studies in relation to ecotourism
The two case studies hardly satisfy the crucial components of ecotourism. In both the cases, investment is high (around 20 lakhs) though the projects have not contributed to conservation or provided benefits to the community. In the case of elevated walkway, we have observed the presence of birds and nesting reducing and changes in animal behaviour due to increasing tourism activities.

For the tree houses, also there is no element of conservation due to high requirement of natural resources for construction and maintenance activities at regular intervals.

In the elevated walkway, the tourists spend around 10 minutes and with no restrictions on number of tourists at a given time, the scope for peaceful watching and understanding of canopy is also limited. In both the cases, no efforts have been made to raise awareness about the sensitivity of the ecosystem or educating tourists about activities they can be engaged in like bird-watching, identifying the various species of insects or reptiles. The involvement of local communities in the planning of the project or accessing and routing benefits to them is absent. Since these
infrastructures are built without taking into consideration the long term impacts and benefits these will provide to local communities as in the case of elevated walkway or private entrepreneurship model as in the case of tree houses, no institutional structures have been created to look into the aspects of planning, monitoring or operation of these models.

**Conclusion**

The above case study models and other models like aerial ropeways, are investment heavy projects. Such huge infrastructure models are environmentally damaging and could never be considered as ecotourism models.

Many canopy style tourism projects are coming up in ecologically sensitive areas like Andaman & Nicobar Islands and it is important to look at whether these constructions are made in accordance with the existing legislations and building norms existing in the country. It is important to understand the socio-economic and environmental impacts of such projects.

While linking canopy tourism to ecotourism, it is essential to understand to what extent the project is sustainable. In models like tree houses, there is a need to involve local communities and stakeholders and ensuring they have access to benefits either through employment, sustainable local sourcing of raw material that contributes to local economy. An independent infrastructure may not be able to do this. Creation of interpretation centres, training local communities to work as trained guides for the tourists, providing facilities for bird watching, studying the canopy life – all could create additional possibilities for engagement of local communities and channelizing benefits to them.

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Contact us
info@equitabletourism.org
+91-80-2545-7607 / 2545-7659
EQUATIONS, # 415, 2C-Cross, 4th Main, OMBR Layout, Banaswadi, Bangalore 560043, India
www.equitabletourism.org