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Design thinking, Tourism and its application on Community based Ecotourism (CBE)

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Abstract

Design Thinking (DT) has been applied to the corporate world with elan, and organizations have made DT their mainstay. Tourism in its Sustainable avatar can be seen in Community Based Ecotourism (CBE) which has brought to the forefront the Community who live in the forest fringes to adopt to business opportunities with support from the Government, primarily the Forest Departments (FD) across various states in India, and helped in the creation of special purpose vehicles (SPV) which have provided for livelihood options, income generating opportunities at the same point in time to preserve and conserve the ecology, environment, the flora and fauna, which is the mandate of the FD. The researcher paper talks about the efforts of applying DT to community-based business activities and with a population which may not be able to appreciate the larger nuances of business, as we seen in the modern contemporary term. The adoption of DT to businesses and organization, was easily juxtaposed on account of the understanding the associates/employees already had about DT. But when it came to the community helping them to understand the facets was tough, but once they understand that this is for their betterment, they have never looked back. We realized that the experiences provided by the communities were not short of the corporate world and look forward to implement this further as best practices.

Keywords: Design Thinking, Community Based Ecotourism, Special Purpose Vehicle

1. Communities, Community-Based Ecotourism (CBE) and the Forest Department

Community-Based Ecotourism (CBE) has been considered to be a concept of community resilience, that is referred to the capacity of an individual or community to cope with stress, overcome adversity or adapt positively to change (Amir, AF. 2015). The forest fringe communities and the communities that live (lived) within the forests in India have, in a manner felt the pressures of regulations that threaten their land and survival. The issues of relocation by the Forest Departments (FD) across the states; under the administrative nuances of preservation and conservation of the forests, the flora, the fauna. The Forest Administrative mechanism (The Indian Constitution has segregated powers to the Federal and State Governments through the Union and State List (Seventh Schedule) and Forests (17A) and Protection of Wild Animals and Birds (17B) following the forty-second amendment of 1976 came under the Concurrent List.) armed with a multitude of laws and a strong and specialized bureaucracy (The Forest Administration is managed by the Indian Forest Service (IFS) similar to the other All-India Services of Indian

Administrative Services (IAS) and Indian Police Services (IPS) who are deputed to the State Governments and the States own Cadre of Forest Officers who constitute a bulk of the service.) has ensured preservation and conservation of the forests across the country but has also got into an atmosphere of crossing swords with the forest communities who have been inhabitants and protectors of the Forests for a long time.

2. Ecotourism, Special Purpose Vehicle (SPV)

A Leading International nonprofit organization dedicated to promoting Ecotourism, established in 1990, The International Ecotourism Society (TIES), which has been at the forefront of ecotourism, providing guidelines and standards, training, technical assistance and educational resources, has defined, Ecotourism as "responsible travel to natural areas that conserves the environment and improves the well-being of local people." (TIES, 2019) It is a clear suggestion that the 'natural areas' are already out there, ready to be discovered by tourists (Bluwstein, J. 2017). In our Research and interaction with the FD and the Communities, we have seen that, if the FD expects the Communities, not to go back to the forests, to plunder the resources, out of anger and even at times set fire to the Forests. and if there is an opportunity to evolve the community to participate along with the FD, then wherever possible, Ecotourism becomes a special purpose vehicle (SPV) (Maria, Freeda, 2019), for as ecotourism development depends on local participation and support from the local community, local perception is commonly assessed to understand the performance of the ecotourism development under various governance systems (Bhuiyan, Md., 2011). The SPVs in India have fallen under the nomenclature of Eco-development Committees (EDC), and Ecotourism Management Committees (ETMC); which have brought about a scenario of Ecotourism that benefits the environment, the economy, the attractions in the area, and the local communities. In our research endeavours, it has been established that the local communities see this as an opportunity and become a society, supporting the FD in its objective of preservation and conservation. Whilst working with these communities, we realised that the FD with the human capital has seen the community be the front line in supporting the efforts of preservation and

conservation. Given this opportunity to work with the FD and the Communities, we as researchers found the opportunity to make use of *Design Thinking* (DT) as a framework that would support our efforts to guide the communities, not only see their immediate challenges but also create an impact (positive) on the larger issue of preservation and conservation. From a historical perspective, it has been seen that DT is a term used to represent a set of cognitive, strategic and practical processes by which design concepts are developed. Many of the key concepts and aspects of design thinking have been identified through studies, across different design domains, of design cognition and design activity in both laboratory and natural contexts (Visser, W. 2006). By all means, it can be rightly said, that DT encompasses processes such as context analysis, problem finding and framing, ideation and solution generating, creative thinking, sketching and drawing, modelling and prototyping, testing and evaluating (Cross, N. 2011). If one were to assuage further, it is clear that the Core features (Cross, N. 1990) of DT include the abilities to:

1. Resolve ill-defined or 'wicked' problems
2. Adopt solution-focused strategies
3. Use abductive and productive reasoning
4. Employ non-verbal, graphic/spatial modelling media, for example, sketching and prototyping.

3. Design thinking the milestones:

3.1 Tim Brown, The human-centered Design Toolkit

If one were to look at the historical evolution of DT, it is clear, that the thought process was towards creative techniques of the 1950s to the phenomenal principles of Viability (Business), Desirability (Human) and Feasibility (Technical), that were propounded by Tim Brown (Brown, Tim, 2009). Understanding various DT frameworks helped the research team to adopt the technique and framework that will augur well for the community as we consider the human-centred approaches to support and guide the community with various options. The framework was clear to the practitioner, who could easily adopt the three activities of Inspiration, Ideation and Implementation and ensure a human-centred approach towards the issue or the problem being faced and create a solution.
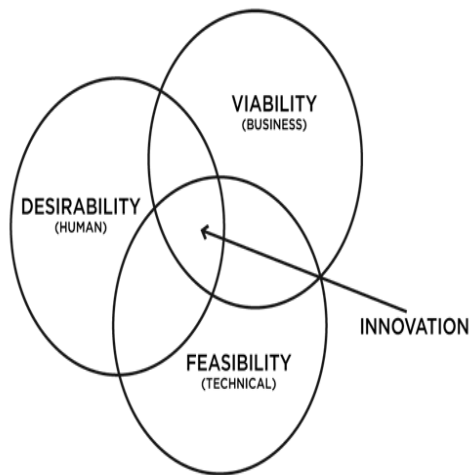
Illustration 1: Tim Brown (2009) The human-centred Design Toolkit (HCD)

3.2 Stanford d. School

Another framework that took the facet of DT to another level of thought process and implementation was the Stanford d. School/The Hasso Plattner Institute of Design, wherein the Principal protagonist, David Kelley (Ideo, 2021), Co-founder of the global design and innovation company IDEO and who founded Stanford University's Hasso Plattner Institute of Design (known as d.school). As the Donald W. Whittier Professor in Mechanical Engineering, David Kelley initiated the "five-level journey framework" which had a focus on Empathize, Define, Ideate, Prototype and Test (EDIPT); which became a defining facet for a large number of DT practitioners.
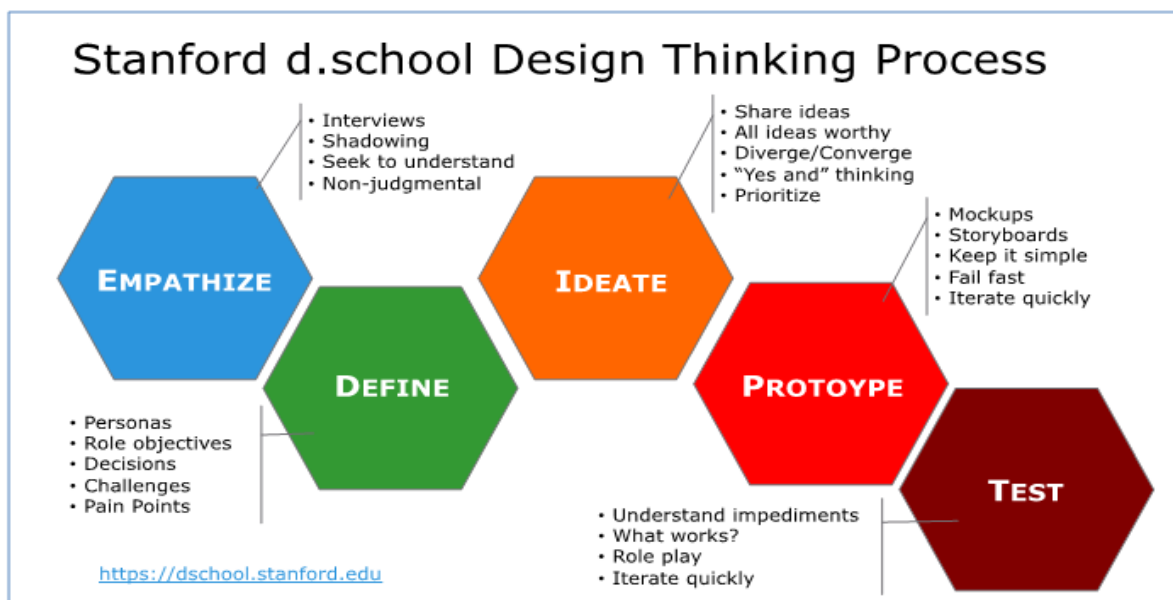

Illustration 2: Stanford d.school Design Thinking Process

3.3 The Idea Couture (Idea Couture, 2020) DT framework:

The Idea Couture, Inc (Bloomberg, 2020), is a global strategic innovation and experience design firm established in 2007 and based in San Francisco and Toronto, besides other cities across the world. Idea Couture DT framework, provided for an integrated approach, by combining with 'futures thinking' and applied wholesome methodology as a means to achieve a business strategy for customer experience innovation. It was branded as the D-School + B-School (D-School/Multidisciplinary capabilities ~ B-School/Strategic and Analytical Thinking), Idea Couture grew by combining the nuances of System Thinking, Business Strategy and Design while blending futures thinking to make sense of Tomorrow's market for customer experience. Though Idea Couture had an independent start, it became part of Cognizant Technology Solutions (CTS) (Idea Couture, 2020a) Digital Business in 2016 (PR Newswire, 2016) through an acquisition that would offer a broad range of digital innovation, strategy, design and technology services (ETICO, 2016). Idea Couture became part of Cognizant Digital Works, specializing in design and prototyping products, services and business models that take advantage of the latest

technologies. The acquisition of Idea Couture by CTS brought in 170 Social Scientists, Strategists, Anthropologists, User Experience experts, designers and connected product developers who were serving many global enterprises.
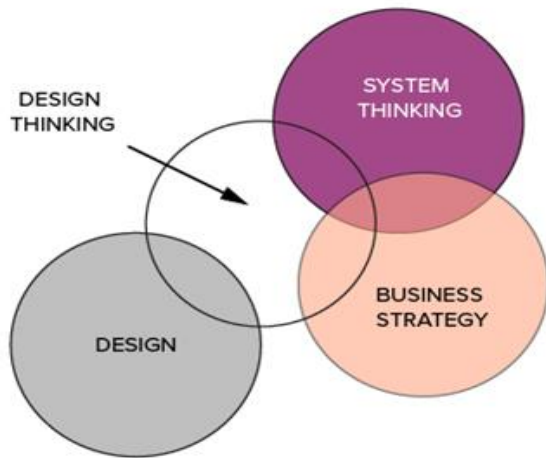

Illustration 3: The Idea Couture framework (Bhooshan, 2018)

A few other DT frameworks that inspired the researchers were the following:

3.4 The IBM Enterprise DT framework (Chicoria, Adilson, 2018):

Illustration 4: The IBM Enterprise DT

The IBM Enterprise DT was considered to be a human-centered outcome at the speed and scale which the modern enterprise demands. It has been considered to be a framework for teaming and action (IBM DT Field Guide, 2017). The intent was clear, "DT puts the focus on user needs," (Hill, Charlie, 2021). It was Charlie Hill who co-founded IBM Design Thinking in 2012 with Phil Gilbert, General Manager for IBM Design. The IBM team ensured that Design Thinking as an instrument was made available to their clients; who could harness the power of IBMs process and included many of the features of IBMs own innovate DT framework. The connect ensured that the digital badge accreditation program would measure progress while allowing users to make direct progress on their own projects (Meixler, Eli, 2018). IBM has set the bar high in regards to DT, which has ensured a thought process that can be proliferated to one all those who want to unlearn/learn the facets.

3.5 Frog Design, the Collective Action Toolkit (CAT)

The researchers also got inspiration from the Frog Design, The Collective Action Toolkit (CAT); which brought about diverse groups of people to accomplish a shared vision, which would ensure the CAT methodology assumption of the teams that might start with a shared vision but the goals would change each time they learn and grow from an activity. Therefore, allowing for 'exploration' of ideas in a non-linear fashion. The framework outlined six steps: Clarify (Your Goal), Build (Your Group), Seek (New Understanding), Imagine (More Ideas), Make (Something Real) and Plan (For Action). The Frog Design focused on empowering the community with design thinking and in their work in Africa with the Nike foundation revealed the need for a universal framework that empowers communities of all shapes and sizes to find and design their solutions to any problem, any time.
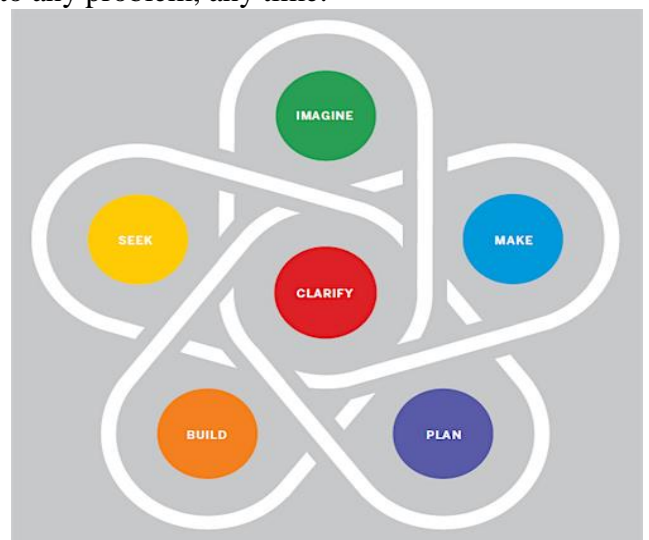

Illustration 5: The Frog Design framework (Bhooshan, 2018)

3.6 Double Diamond Design Framework:

The researchers also came across the Double Diamond Design Framework (Design Council, 2021) (Discover, Define, Develop and Deliver) and the **Darden Graduate School of Business, University of Virginia**, Design Thinking framework of Jeanne Liedtka; who put forward the four-stage DT framework stages of What is? What if? What Wows? and What works? (Liedtka, Jeanne, 2021) DT for the Greater Good (Liedtka, Jeanne 2017), goes in-depth on both the how of using new tools and the why. The Social Sector Organizations are searching for powerful new methods to understand and address the human-centered challenges they face. The thought process truly helps the Leaders and thinkers to implement DT practices in their pursuit of creative solutions that are both innovative and achievable (DardenMBA, 2017). While researching to get to the best of DT, the researchers even looked at what the Indian academic environment and the corporate systems were contributing; and came across the following:

3.7 Indian Institute of Technology Madras

The finer aspects of DT were mastered by Professors Ashwin Mahalingam of Indian Institute of Technology Madras (IITM) and Bala Ramadurai, a consultant to the corporate world and an adjunct faculty to many Institutions; who facilitated a programme of Design Thinking to a multitude of students and practitioners over the SWAYAM (Sanskrit acronym for Study Webs of Active-Learning for Young Aspiring Minds is an Indian Massive Open Online Course (MOOC) Platform, launched by the Ministry of Education, Government of India.) and NPTEL (NPTEL is an acronym for National Programme on Technology Enhanced Learning which is an initiative by seven Indian Institutes of Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and Indian Institute of Science (IISc) for creating course contents in engineering and science.) platform of the Government of India. Through the acronym of EAST, Empathize, Analyze, Solve and Test (Mahalingam and Ramadurai, 2019); they were able to intertwine the finer aspects of Karmic Buddhism viz., *Dukha* (suffering), *Samudaya* (the root cause of suffering), *Nirodha* (Put an end to suffering) and *Marga* (set a path to end suffering); which helped the Indian learners to get to a new adage on DT and brought about the aspect of Karmic Buddhism DT (Ramadurai, 2020).

IITM	**E**mpathize	**A**nalyze	**S**olve	**T**est
Karmic Buddhism	*Dukha*	*Samudaya*	*Nirodha*	*Marga*
The inner meaning	People	Problem	Solution	Concept

Illustration 6: A comparison of DT measures under the IITM construct.

3.8 Indian Institute of Technology Bombay

IIT Bombay (IITB) (Eruditus, 2021) (IDC {Industrial Design Center} School of Design) (www.idc.iitb.ac.in/about/background.htm) (estbd: in 1969) too has ensured academic programs that have focused on the principles of DT based on the EDIPT framework which has attracted many a learner to participate and get to the best of information and inputs. IITB also runs a MOOC through NPTEL (https://onlinecourses.nptel.ac.in/noc19_de06/preview accessed on 18th June 2021) titled: Understanding Design, which has been appreciated by the Learners and the Practitioners. Another good program of IITB available as a MOOC Innovation by Design conducted by Prof. BK Chakravarthy. The phenomenal Chakku's 7C's are worth going through. Chakku's 7C's focus on the what any practitioner would appreciate: The Cause, The Context, The Comprehension, The Check, The Conception, The Crafting and The Connection; adding a paradigm and providing more food for thought.

The IIMs in India too are not to be left behind, and they have come up with Management Development Programs (MDP) which have attracted associates from the Corporates and Entrepreneurs who have benefited from DT programs. One such DT practitioner and contributor has been Pavan Soni (2020), whose Design Your Thinking, has been considered by many as a successful contribution to DT by Entrepreneurs and even Intrapreneurs in Organizations and is a top seller among DT books

in India. His focus has been on IDEO and Stanford d. School pedagogy, along with the powerful technique of TRIZ, a Russian acronym for "Theory of Inventive Problem-Solving," wherein it is about the framing of a problem in the form of a physical constraint and offers a host of solutions to resolve the contradiction. The IITM DT school of thought has also adopted the TRIZ framework to bring about a solution-centricity.

3.9 Society of Design Thinking Professionals

Society of Design Thinking Professionals (SDTP) (https://sdtp.co.uk), with its headquarters in Mumbai and many certified professionals spread across the country, is focusing on the IDEO and Stanford d. School thought process to usher in DT practice across corporates and individuals. This has helped to proliferate the nuances of DT in the minds of the masses. One of the Certified proponents of SDTP, Mr Arvind Mishra worked along in the Indian Institute of Tourism and Travel Management (IITTM), Noida, a Government of India, Ministry of Tourism, autonomous body and Federation of Indian Chamber of Commerce and Industry (FICCI) to augment throughputs on DT and Tourism to trainees who had logged in from across the nation organized a three-day Online Certificate program on DT and Tourism focused on the solution-centricity through the dynamics of EDIPT, a time-tested framework of IDEO and the Stanford d. School. It was one of the first forays of DT into the dimension of Tourism. The researchers of this paper were part of the program and were greatly benefited from the guidance provided by Mr Mishra.

4. Design Thinking and Tourism:

The researchers after having understood the nuances of DT and the various takes were looking out to apply the framework (frameworks) to Tourism in general and Ecotourism in particular. It was at this juncture, we found that Tourism CoLab (https://www.thetourismcolab.com.au), was passionately working on the implementation of the DT principles to help augment a human-centered approach to help solve issues that are faced in the Tourism, Travel and Hospitality (TTH) arena. In the case of the current research, the focus was on helping communities evolve and develop a better understanding of their product and tourism service offerings and ensure livelihood options for the community that they are a part of. Having worked with Communities from 2013 through Dharthi, a non-Governmental Organization (NGO) we got to understand very early on that the Community needs handholding by the Government, considering that most, if not all the products of Ecotourism, come under the Government of the particular state/province in India. Our initial days were a trial and error and, in a few cases, we failed miserably to understand the community and even at times the interventions the FD of the state would like to consider. Hence, to ensure for the academic and the general reader, the researchers made an effort to help the DT practitioner to understand the primer of Ecotourism, the what? the how? the who? and even the maybe? The characteristics of Ecotourism will help one to estimate and ensure what needs to be broken down, identified as an issue, a problem and enable solutions with the help of the community and also by supporting the community. Patterson (2001) classification (For a qualitative understanding of how we targeted what Carol Patterson had evolved, we have placed our view and interpretation in line to each point that is worth considering for any DT practitioner or general administrator who would bring in interventions to help assuage the issue/issues being faced and bring about a human-centric solution.) of Ecotourism helped us to reach the nuanced approach to ensure for the Community and the DT practitioner in us.

1. Have a low impact upon a protected area's (PA) natural resources and recreation techniques. (This is where the nuances of Sustainable Tourism arise, and considering that the Community knows the PA well, they will be able to work in tandem with the FD and ensure for all the stakeholders and provide for an experience for the visitors.)

2. Involve stakeholders (individuals, communities, ecotourists, tour operators and government institutions) in the planning, development, implementation and monitoring phases. (The primary stakeholders are the Community and the FD officers who will be the mainstay as part of the Government. In India, the Local Self Government (LSG) lead by the Gram/Village Panchayat helps in establishing a structure and a backing to the functioning which is mandated by the Constitution of India). (The last level of

Government Administration, but the cutting edge, as people will be able to decide as to what is needed by the Community. The Government of India, through various interventions and off course backed by the Constitution 73rd Amendment has focused on the Panchayati Raj Institutions (PRI) which will add value to the functioning of these SPVs and provide an opportunity to collaborate with a multitude of Department of the Government and ensure development and growth in a particular village. The creation of the Gram Panchayat Development Plan (GPDP) adds a fillip to the functioning of the Ecotourism destination and brings in cohesion with various line departments of State/Provinces of India participating and ensuring the success as per the norms and need of the community.)

3. Limits visitation to areas, either by limiting group size and/or by the number of groups taken to an area in a season. (Sustainability ushers in the facet of "carrying capacity" of the visitors that the destination can take; this ensures that the destination will ensure 'zero' over-crowding and the aspect of "over-tourism" (Ali, Rafat, 2018) that has been seen an impact and a pass-over of 'mass tourism)

4. Supports the work of conservation groups preserving the natural area on which the experience is based. (The Community is the best bet to preserve and conserve the PA under the watchful eyes of the FD and other NGOs who would like to contribute through the means of training/skilling and support aspects)

5. Orients customers on the region to be visited. (Visitors of today, are mature and would engage in sustainable tourism products. More visitors of today, are making an effort to reach out to destinations that focus on Sustainability and with a focus on carrying capacity)

6. Hires local people and buys supplies locally, where possible. (The Ecotourism SPV provides for the finest of opportunities of livelihood options for one and all in the area. It can range from Naturalists, to managing restaurants, to managing resorts, adventure activities; it gives for ample amount of Income Generating Opportunities through 'revolving funds' and Government grants)

7. Recognizes that nature is a central element to the tourist experience. (Visitors of the day are preferring to make headway to destinations that are in the genre of Nature-Based Tourism (NBT) and this is sure adding value to Ecotourism)

8. Uses guides trained in the interpretation of scientific or natural history. (Naturalists who are locals are the best bet in any NBT destination, as they know the environs well and provide an experience to the visitors.)

9. Ensures that wildlife is not harassed. (This is the primary prerogative of the FD and the SPV supports the action.)

10. Respects the privacy and culture of local people. (Since the locals are involved, they are aware of what is to be provided and what need not be done. The Do's and Don'ts are well prescribed, which will have the approval of the community)

Another framework we considered for the Tourism DT practitioners was one by Drumm and Moore (2005) which provides for an understanding that is multiple and diverse in its essential elements for ensuring that communities fulfil their role in ecotourism development.
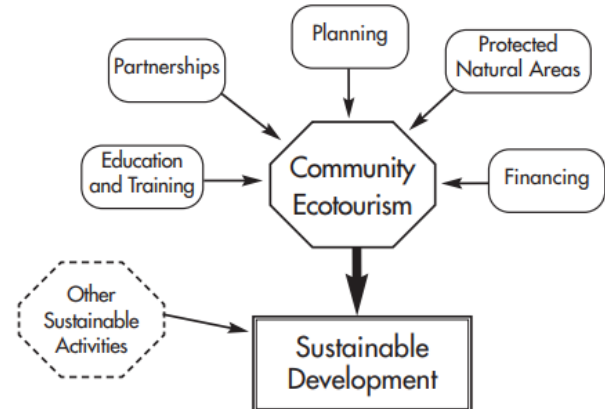

Illustration 7: Essential Elements for Ecotourism in a Community Setting

It is clear from Illustration 7, that ecotourism in order to thrive must be protected and there should be collaboration between the communities and the park management. Clearly the park management should ensure sharing of income generated through various ecotourism activities with the communities.
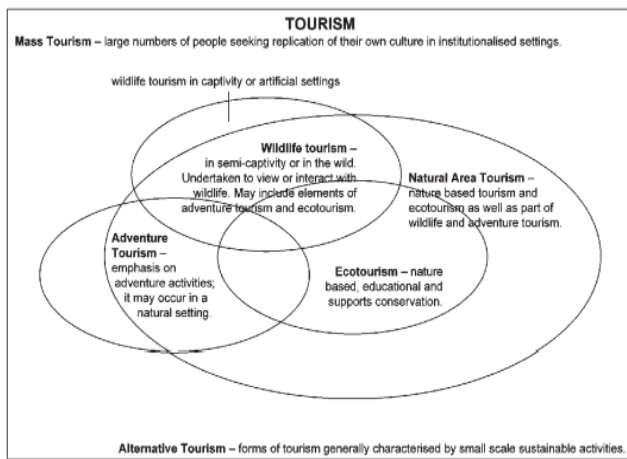
Illustration 8: Relationship of Ecotourism to other forms of tourism (Hill, Jennifer and Gale, Tim, Pravin 2009)

These frameworks will help (has helped the researchers) the DT practitioner to understand the way forward in empathizing with the community to ensure an understanding and create the human-centric intervention that will go a long way to assuage the Community and Ecotourism. Illustration 8 envisages a nuance that Ecotourism is a subset of Natural Area Tourism (NAT) incorporating within itself activities of Wildlife and Adventure. Whilst Illustration 7 focuses on the 360° understanding of the requirements of Ecotourism, which juxtaposes a multitude of processes that add value to the very function of Tourism. Anna Pollock (Pollock, Anna, 2021), Author, change agent and founder of Conscious Travel (www.conscious.travel/services/) in an interview (The Tourism CoLab, 2020) with Prof. Dianne Dredge of Tourism CoLab, mentioned, "The design tools are stimulating a different method of thinking….you are not telling people how to do it in this neighborhood……..there are a unique set of circumstances that the mix of people is different, the land is different, the history is different, the political jurisdictions are different, the governance is different…….so what we need are our ways of approaching…..the most important thing is to learn how to question, how is this working who is really in control here…….." The interview is a clear direction to the practitioners of DT to ensure that the thought process should be from the community, which will ensure success for the project that is being undertaken. One inspiration that came to our understanding was, the fact that the People's President of India, Bharat Ratna Dr. Abdul Kalam put forward: PURA, Provision of Urban Amenities in Rural Areas. Our

understanding was it was a phenomenal plan, which, if implemented well, will succeed; we also realized that, in the Rural Areas, in general, and the forest fringe areas in particular, we should work with the Community and ensure an understanding for ourselves to begin with. We should not force our thoughts and ideas on the community in regards to the forest, and its management. This is when the idea of making an effort to implement DT came into our mind. We worked with different forest communities in the following states and Tourist Destinations: Karnataka (Syntheri Rocks, Kali Tiger Reserve-KTR); Maharashtra (Agarzari, in Tadoba-Andheri Tiger Reserve-TATR). The researchers have worked with other Communities on CBE as well, but these case Studies stand out, from the perspective of understanding the needs, the requirements, of the community and how, all the stakeholders, Government, through the FD, the Civil Society, through the NGOs will support and add value to the CBE project.

4.1 Syntheri Rocks, Aurli, (Karnataka) Ecotourism with a difference: (Maria, Freeda and Kumar, Manoj, 2012)

Located in the Uttara Kannada (Karwar) district, the FD has created an EDC that has been functioning since 2005 in the village of Nandigadde (Gund Panchayat). A 54-household village with a population of 190, with agriculture products like areca nut, paddy and banana as the mainstay and the community growing vegetables for household needs; Aurli was a phenomenal point of growth, for the community decided what they wanted, along with the FD and other stakeholders who helped with the interventions. The EDC embarked upon the following Ecotourism objective:

1. Tourism Management of the Syntheri Rocks.
2. Supporting themselves to build a protection wall (four kilometers) from wildlife (elephants, monkeys and porcupines).
3. To provide Solar lamps for the community members.
4. To provide for LPG.
5. To build toilets.
6. To solve drinking water problems.
7. To construct a permanent structure for the visitors.
8. To produce literature about the destination.

9. To provide for sewing machines based on the community requirement.
10. Maintain the road in the village.
11. Participate with the FD for Forest Fire Control.
12. Enrol patrolling to control poaching of wildlife, and
13. Afforestation

What was allowed to the EDC by the FD was a collection of an entry fee to the Syntheri Rocks for Domestic and International visitor and collecting parking fee for vehicles. To maintain the entry facility to Syntheri rocks, a manned (two personal, locally employed by the EDC, and two community members would also collect disposed plastic and other materials left behind by the visitors) gate has been constructed. The four locals employed and paid by the EDC have been given training on good environmental practices for them to educate tourists on aspects like no burning of waste, no smoking, no usage of plastic to mention a few. They have also trained to act as rescue staff if visitors get into the waters of the river in the vicinity. From the funds collected 25% go to FD. In the case of Aurli, the FD and other stakeholders who intervened, ensured what the community wanted to pursue, for when we look at the options of human-centricity, it augurs well for the people who need the solution. The decisions taken, by the community, who required the interventions ensured qualitative participation of the community and thereby preservation and conservation of the core area of the forest. Syntheri Rock is at the Core of the KTR. It is a rock which 300 feet in height and the rive at the foot of the rock provides an awe-inspiring view for the visitor. The place is of Geological importance and the local community is aware of the importance of the rock formation. Hence, the community managed project, has ensured, qualitative protection of the Core area of the forest and thereby the opportunity for the community to evolve and develop.

4.2 Agarzari, Tadoba-Andheri Tiger Reserve-TATR (Maharashtra):

Located close to Chandrapur in Maharashtra, Agarzari is a success story (Maria, Freeda, 2020), and the EDC caters to the needs of the domestic and international visitors to showcase Tigers, has succeeded beyond anyone expectations. With about 45 households, and a small population who depend completely on Ecotourism activity,

wherein, Tiger Safari has been the mainstay; it was the community that decided its fate, of course eagerly supported by the FD in Maharashtra whose focus was on reduction of poaching, illegal collection of forest produce and the overall preservation and conservation of the forest area.

The community at Agarzari has Agriculture as the mainstay occupation (Maria, Freeda et.al., 2020); with lands in the buffer of the Tiger Reserve. The researchers established that the community would also get to the forest for collecting the forest products from a historical perspective. However, this has come to a halt on account of the interventions of the Maharashtra Forest Department (MHFD) and the Revenue Administration departments of the state of Maharashtra. Agarzari got the first Buffer Tourism in 2011 in Maharashtra and Tadoba Andhari Tiger Reserve (TATR). The TATR area has a total of 91 villages (as discussed with the Biologist of TATR, Mr. Anirudh Chaoji who is based in TATR office, Chandrapur, Maharashtra) with a population of 1 lakh. TATR becomes an epicentre for human-wildlife conflicts (HWC) considering the dependency on the forests by the community members. There was a time when the Gond Tribe was all over the area.

The Community has been weaned away from the forest area and has been provided for alternative livelihood options that are as follows:

i)   Owning of Gypsy vehicles for organizing the Safari through various gates in the vicinity of Agarzari
ii) Options to drive the Gypsy vehicles (Driver Job)
iii) Working in the Tent Accommodation (Agarzari Campsite) of the Forest Department through the Eco-Development Committee (EDC).
iv) The workforce in the Butterfly Park created through an EDC (Entry gate Collection, Interpretation Center and a Bamboo Souvenir Shop)
v)   Canteen being run through EDC in the Butterfly Park.
vi) Workforce: cooks for the Tented Accommodation (Agarzari Campsite) through the EDC.

vii) Working directly with the Forest Department as contract labour engaged in: i) Fireline creation, ii) afforestation iii) Forest Census Activity

viii) *Agarbathi* (Incense stick) manufacturing facility.

ix) Non-Timber Forest Produce (NTFP) collection: *"Mahua"* flower collection once a year.

x) The Local youth are involved in Nature Education and adventure activities. A place designated for the same, adjacent to the Agarzari campsite, outsourced to a partner from Chandrapur.

xi) Tourism and the inflow of tourists to Agarzari, has given rise to individual run eateries and *Kirana* shops, giving a source of income for the village folk of Agarzari.

xii) Maintenance and housekeeping staff are employed from the village at The Campsite, for adventure activities and Butterfly Park.

The Community made up its mind to ensure for itself with a little push from the FD who provided all the support possible for the community to grow. If understanding the community and its requirement was important to the FD and other stakeholders; that itself became the factor of success; whenever there was brainstorming that was required, the community would place its 'ask' and 'requirement' which was always reasonable to be fulfilled, for it was the community that was leading in the practice of Ecotourism and ensuring for all stakeholders.

4.3 A successful case study of Agarzari:
Kailash and his wife Rekha, who belong Gond tribe in Agarzari depend upon the forest resources of the Agarzari Zone of TATR for their livelihoods along with their children: Pranjali, Bharat and Appalli. When the MHFD opened up the opportunities for Jeep-Safari, Kailash sprang into action and purchased a Gypsy Vehicle through a loan. He drives the vehicle and on a good day for Safari earns INR 4400 per day; INR 2200 per day from the Gypsy is assured. He has already repaid the loan for the vehicle and proudly says, that he had his wife, Rekha headed the EDC Canteen located in the Butterfly Park as a Head cook after winning the tender from the MHFD. After serving the one-year tender, since the canteen tender went

to another local through tender mechanism; Kailash and his family started a roadside eatery; which earns them about INR 50,000 per month. Thus, it can be seen that Kailash and his family of five, today garner an income as follows:

Gypsy Vehicle Income:	INR 2200 X 30 days = 66,000
Income from Eatery:	INR 55,000 per month
Monthly income:	INR 1,16,000

Note: INR 2200 for a Safari in the morning and INR 2200 for afternoon/evening Safari. [USD: $1 = 74.70 as on 2nd July 2021] {Amount of INR 66,000 calculated on the basis of one Safari entry/day}

Conclusions
DT as an instrument has helped a multitude of businesses and entrepreneurs to scale up and ensure quality business for themselves. The formal business environment has benefited from the DT measures and as seen large organizations have made DT part of the eco-system. The thought of apply DT to the Ecotourism segment managed by the Village community initially came as a hard surprise for the research team, but then the facets of DT, either the EDIPT or the EAST mechanism came in very handy and garnishing the practices with other inputs from other streams added value to the proposition. One aspect that needs to be understood is that the Communities, unlike in the corporate, where there is an infrastructure; were able to understand what was being said, and they prepared themselves to face the world of business as any businessmen would do. The brainstorming that would happen to understand the requirements and to evolve the attitude of empathy/empathize was a clear-cut opportunity to move ahead with confidence, as the community clearly understood the business sense and wanted to make the most of the scenario that is provided to them. The community also made the changes as and when it was required or was mitigated on account of externalities and the changes that occurred. As we finalize the research paper, we are dabbling with how the communities should face the Covid and post Covid world, and a good number of communities have come to understand that placing all eggs in one basket is

not good for business, however, successful. The communities are contemplating alternative livelihood options that will help in mitigating any issues that will occur in the future. The communities, whom we assumed did not have the necessary education and the finer aspects to understand the elements of business, proved us wrong, for they knew their eco-system better than any business magnet or corporate honcho, and made a success for themselves. We look forward to taking the measures of DT in all its dimensions and ensure success to the other communities in India and bring in the necessary changes.

"Most people make the mistake of thinking design is what it looks like. People think it's this veneer – that the designers are handed this box and told, 'Make it look good!' That's not what we think design is. It's not just what it looks like and feels like. Design is how it works." –

<div align="right">Steve Jobs (1955-2011)</div>

Acknowledgement

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