



Forest- based Model: A Nature-based Health Tourism Practice at Tourism Destinations

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Received: 12.12.2023; Revised: 30.12.2023; Accepted: 30.12.2023

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Abstract: The rising popularity of nature-based health tourism, particularly focusing on forest environments, has prompted this investigation into their effectiveness in enhancing visitor well-being. This study explores the principles of forest therapy and the utilization of the forest-based tourism model as a nature-based health tourism practice, drawing on global research and literature. Two distinct forest-based models, natural and man-made, have been developed and can be tailored to various destinations. These models have proven to significantly improve both the physical and mental well-being of visitors, thereby serving as unique attractions for tourism destinations. The paper also offers recommendations for further research. Furthermore, the research emphasizes forest-based models as sustainable tourism practices, citing a range of secondary sources to showcase their implementation and benefits to tourists. It suggests that such models not only encourage nature-based health tourism but also aid in the conservation of natural resources, preservation of cultural heritage, stimulation of economic development in local communities, and promotion of holistic health awareness. In essence, forest-based models provide a comprehensive approach to tourism that integrates health, nature, and sustainability, benefiting both visitors and the environment.

Keywords: Health Tourism, Nature, Forest -based model, Management, Nature-based health tourism

Introduction

Bharat, also known as India, boasts a strong and vibrant system of traditional medicines, diverse climate and weather conditions, lush greenery, and majestic landscapes, which provide holistic healing. With this, Bharat aims to offer calm, immense peace, serenity, and holistic health to the world through practices such as Yoga, Ayurveda, other forms of traditional treatments, and spiritual surroundings (Bharadwaj, 2020). Tourism today is not limited to mere vacationing. It has evolved with more awareness and creativity. Tourism's inclusion as a Sustainable Development Goal recognizes its potential to improve personal well-being (UNWTO – Tourism for SDGs, n.d.). Short, rejuvenating trips to natural settings are recommended as a top wellness trend to combat the negative effects of digitization and the pandemic (Global wellness summit).

Post Covid-19 pandemic has increased awareness of a human being towards oneself, which prompted people to reconsider their relationship with the natural environment and how we can use natural spaces. In the current disappearance of humans from natural environment (U.S. Department of Agriculture, 2018)(Searle et al., 2021), people are seeking comfort and company that goes beyond human interaction, especially in the outdoors. Therefore, tourism researchers have recently started to push harder for the enlightenment of humanity, a change in values, and finding fulfillment and happiness in tourism practices (Sheldon, 2020). It can aid the inner journey of change in a variety of ways, promoting responsibility, (self) care, and readiness for transformative moments. Similarly, travellers are also looking for products, services and experiences that are designed to improve their overall well-being (Thal et al, 2021).



Innovative treatment plans based on complementary therapies, eco-therapy, forest wellness, and forest therapy are the new trends in health tourism as a result. Shinrin-yoku, a trend popularized by Japanese academicians, is one of these practices (Park et al., 2010). They suggested an immersive forest experience, which essentially aims to re-establish a connection between people and the earth and to awaken the senses, facilitating multi-sensory, effective, and kinesthetic processes.

More efficient use of forests for tourism and wellness purposes has been raised among Nordic explorers (Pesonen & Komppula, 2010). Their research provided valuable insights into the creation and provision of forest-based wellness experiences for tourists. During ancient times, the saint and sages used to do certain acts of tapa in the dense forests. As we all know, whether it is Valmiki or Vishwamitra, Vyasa or Vivekananda of present era, Sri Ram, Sri Yogananda and even Sri Lahidi Mahashay completed these important Sadhanas in forests. Such a tourism product "may include physical activity and relaxation/relief of stress in the forest, use of the natural resources of the forest, as well as educational activities related to the use of natural resources for well-being" (Konu, 2015, p. 6). Although these, studies investigated various factors influencing tourist well-being, they did not consider forest bathing as a guided and structured activity. The study of Ohe et al (2017) evaluated the physiological and psychological benefits of this practice in a rural tourism setting.

To advance these discussions, this article explores ways in which, people can create a forest-based wellness experience during guided forest bathing sessions (Zhang et al., 2022). It aims to create a space in tourism scholarship to discuss forest swimming as a conscious tourism practice that enables the mental and physical recovery of the traveller, which ultimately contributes to their overall well-being and quality of life (Shin et al., 2010).

As John Muir said

“The clearest way into the Universe is through a forest wilderness”

And this paper begins by discussing the importance of natural resources to one's health and a way to connect people through this. This can only be followed by knitting together the concepts of forest bathing, forest – based activities in natural and artificial settings, to situate this practice more prominently within the tourism discourse. At last, we discuss how to develop a forest-based wellbeing tourism model through both natural and man-made setting that made easier with a better understanding of the effects of the forest model as a thoughtful and holistic tourism practice at different tourism destinations.

Review of Literature

According to Sheldon's (2020), meaningfulness, inner peace, and wellbeing can all be attained through leisurely journeys that unravel as a result of deep immersion in the surroundings. It usually enables deeper and stronger connections between tourists and the natural and social environment by raising one's awareness towards surroundings.

In order to examine tourist well-being, (Stuckey & Nobel, 2010) adopted a positive psychology approach. This approach has provided priceless insights into the hedonic and eudaimonic qualities of slow journeys, of which flourishing, attention, openness, and pleasure are key components.

(U.S. Department of Agriculture, 2018) explained the role of forest therapy in the promotion of health and well-being. The review found that forest therapy can have positive effects on various health outcomes, including cardiovascular disease, diabetes, depression, anxiety, and obesity. The review also found that forest therapy can improve immune function and reduce inflammation.

Ochiai et al. (2015), suggested about the effects of forest therapy on immune function. The study found that spending time in a forest environment can improve immune function by increasing the activity of natural killer cells and other immune cells.



Berman et al. (2012), examined the effects of nature exposure on cognitive performance. The study found that exposure to nature, including forest environments, can improve cognitive performance, particularly in tasks that require attention and memory.

Park et al. (2011), examined the relationship between forest therapy and cortisol levels, a hormone that is associated with stress. The study found that spending time in a forest environment can reduce cortisol levels and alleviate stress.

Park et al. (2010), explains that forest therapy has been found to have positive effects on the human body, including the reduction of stress, blood pressure, and heart rate. In addition, forest therapy has been found to boost the immune system and improve overall mental health.

Tsunetsugu et al. (2007), finds the effects of forest therapy on blood pressure and heart rate variability. The study found that spending time in a forest environment can reduce blood pressure and improve heart rate variability, which can lead to improvements in cardiovascular health.

More than 15 researches have been studied and some of them are mentioned here (Table 1) which supports the study as an evidence that the implementation of forest based setting in natural environment or by a man-made setting can helps a tourist to visit such destination to get strengthen with the therapeutic effects of natural resources.

Table 1: Studies providing evidence for the association between human holistic health & forest-based model

Study	Environment	Human health Aspect	Association
(Liu & Wen, 2022)	Forest-based health tourism	Covid-19 Pandemic	<ol style="list-style-type: none"> 1) Cognition of health preservation had a positive effect on the forest-based health tourism intention of urban residents 2) Social trust promotes the behavioural decision of wellness tourism in forest among urban residents 3) Educational level and health status were the demographic factors that affected the forest-based health tourism intention of urban residents.
Liyang Zhang et.al (2022)	Urban Forest Parks	Willingness of tourists to visit urban forest parks	Cognition of the development level of facilities for forest tourism has a significant positive effect on the perceived value of landscape resources, the perceived value of the ecological environment, and tourists' satisfaction
(Zhang et al., 2022)	Forest therapy	Public mental health and circular economy	Data from Japan suggest that forest therapy mindfulness movements are not only good for physical health but can also benefit local circular economy development when combined with a good policy environment.

Forest-based Model as a Nature-based Health Tourism

Forests play an important role in nature-based health tourism. This forest is a resource of nature that provides oxygen and other beneficial health related activities to a living organisms. Along with this, forest areas are full of greenery that creates a systematic balance with nature.



In this way, a model was imagined in nature-based health tourism that paves a new way to health tourism. It can be possible in two ways :-

1. Forest-based model – Natural
2. Forest-based model – Man-made
3. Forest-based model – Natural

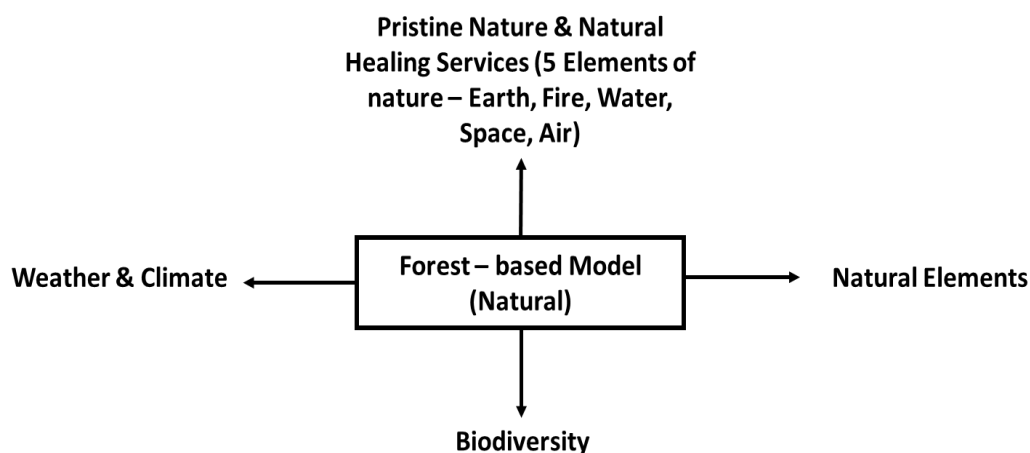


Figure 1 Forest-based Model – Natural

Source: Self Elaboration

In the physical environment, forests have a special place from health point of view. In the serene and peaceful environment of forests, the required scenario of understanding the life, knowing it and also to perform some of the valuable experiments emerged. This model developed by the researcher explains the basis of developing sustainable forest-based model to any destination for the tourists by using the natural resources available in the environment and its near by surroundings. This model helps to create or implement this healthy technique at any nature-based setting in a natural way with less human involvement and deforestation. It should be maintain and transform with respect to health. It not only involves the use of resources but only by being with such resources can also play an important role. Pristine nature such as mountains, tranquil lakes, mesmerising valleys, remote villages gives your heart and mind feel at peace. Such models can provide many options for travellers to seek refreshness and rejuvenation. Such area should be enveloped by verdant trees and awe-inspiring mountains, plunged waterfalls, sun rises and sets over these majestic views creates a breath-taking backdrop for health and wellness tourists. Different destinations has its own uniqueness just like the five elements of nature that helps to create a balance with i.e. earth, fire, water, space and air. Suitable weather and climate enhances and balances the tri-doshas (Vata, Pitta, Kapha) of a human body like cold, warm and humid. Bharat is rich in its resources with diversified climate and weather conditions that offers suitable destinations for the visitors and allows forest- model to establish with its fertile resources. And the last thing that adds bounty views to forest model is the biodiversity i.e. its flora and fauna that can create a better connection with nature and gives us the feeling of love and care. It generates many positive emotions, such as calmness, joy, and creativity and can facilitate concentration. Therefore, such forest-based model setting by using and their availability of natural resources can leads to its finest development that creates such green and healthy spaces for the tourists to spend their time in which they can perform different types of forest based models like nature walk, guided meditation, yoga, exercises, spiritual activity or enjoy with unique beautiful views by just starring it (*International Model Forest Network » Model Forest Principles*, n.d.). This above given figure 1 shows that forest-based model can only be possible to develop at destinations with



natural resources, weather and its flora and fauna that benefits to human beings in enhancing their physical, mental, emotional and spiritual well-being.

Forest-based Model - Man-made

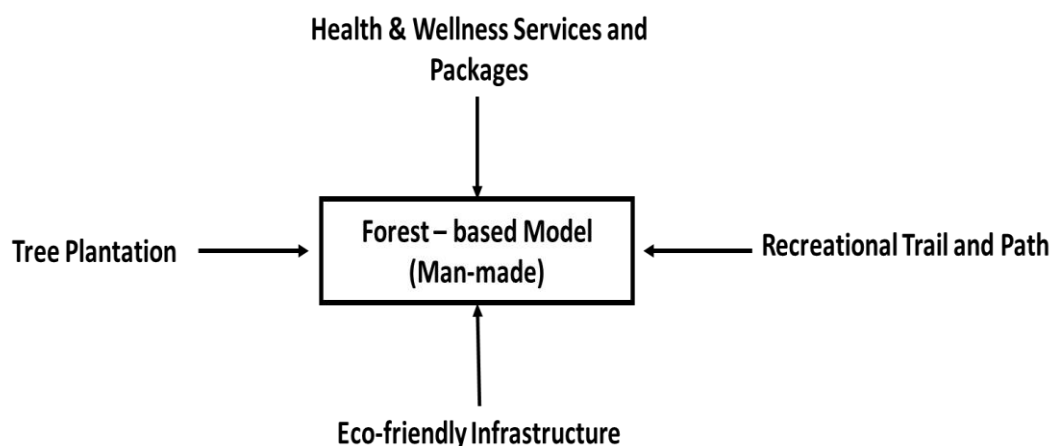


Figure 2 Forest-based model – Manmade

Source: Self Elaboration

In the above given figure 2, explores the market, the demand and the supply of nature-based health tourism and provides a forest-based model through man-made setting in both urban and rural areas. To develop life we need to move towards nature. A sustainable model can be created which can be used or implement by an individual or by any therapy centres, resorts for establishing their business in this sector. It is a model of ambience that we can create for the rejuvenation and recreation. To develop such model firstly the number of tree plantation have to be done to give a view of forest and look after the set of plants that we need to grow in our surroundings according to suitable temperature and weather. More number of developments of such nature-based destinations can come in picture by adding different health and wellness services and their packages including different therapies and treatments in forest-based setting such as panchakarma, naturopathy, yoga and meditation, aroma therapy etc. Develop eco-friendly accommodations using sustainable materials. Implement waste management systems, renewable energy sources, and water conservation measures. To enhance more holistic holidays it should be in-built with good eco-friendly infrastructure. Remote areas people can also start their work with less amount of investment. There should be different activities in forest-based model in combination with health such as recreational trail and paths, healthy menus, health monitoring, silence retreats, spiritual travel with an adventure component. Develop wellness paths featuring meditation spots, fitness stations, and informative signposts. It can also be added with beautiful lush greenery smriti upvan, buddha- vatika model, navgraha vatika for good experience in enhancing one's health with ancient Indian spiritual nature-based thoughts.

Applications of Forest-based Models in Tourism Destinations

Forest therapy is one of the best ways to rejuvenate our minds and bodies. There is something unique and healing about nature. India has many beautiful forests that are ideal for forest therapy such as in Tamenglong district in Manipur; Ranikhet, Uttarakhand; Cherapunji, Meghalaya that offers forest healing centers (Rongmei, P., 2022). Forest-based models are also increasingly being implemented at tourism destinations worldwide. For example, in South Korea, the Forest Healing Center offers forest-based experiences, including guided walks, yoga, and meditation, to improve visitors' health and well-being. Similarly, in the UK, the National Trust offers forest therapy experiences, such as forest bathing and mindfulness walks, at various locations around the country. These initiatives aim to



promote the natural environment's healing properties and encourage visitors to engage with nature in a meaningful way.

Steps for developing Forest- based Model at any Tourism destination site



Figure 3 Steps for developing Forest-based Model at any Tourism destination site

Source: Self Elaboration

Figure 3, explains about the steps in implementing the forest-based model at different tourism destination sites which is based on suitable environment and management with long-term sustainability for that particular surroundings including all social, economical and environmental needs. A model can be created in such a way that it should be :-

- Easily implemented by one another
- Use in sustainable manner
- Covers the holistic development of an individual

Vision & Objective : To create a harmonious space and wellness experience for the visitors to achieve holistic health support to their body, mind and soul by contributing conservation to our planet.

Geographical surrounding : Diverse ecosystem, natural resources, climate, temperature and natural resources are the main components that supports the forest-based model system. Accessible area should be selected to develop such models.

Sustainability Factor : Accommodation accessibility, attraction, amenities and activities should be developed and implemented in a sustainable way. Green and blue spaces should be used and organised but not by harming the resources. According to the resources, one should decide the activities and other amenities for the tourists.

Governance and Management : Economic variation can be seen at different destinations giving such health experiences so, it requires a control centres with set of guidelines to follow, policies, planning and marketing management. People came to know about the importance as well as benefits of such resources, therapies and activities.

Nature-based Activities : All the activities should be performed in a routine after a proper guidance. Forest-bathing, meditation, spending time in such areas can be developed under proper guidance to care one's health. It makes use of best available traditional and scientific knowledge.



Execution, Implementation & Promotion : If promoted, implemented and executed properly than can be accessed by a lot of people. As everyone wants a greeny and pure break from the humdrum of their daily life in a scenic and picturesque environment.

Forest-based Therapy in Nature-based Health Tourism setting

To allow people to breathe, think, exercise, and relax, as well as by reducing extreme heat, creating more walkable streets, and other benefits, forests and trees make better places to live. A growing body of research demonstrates that forests, even those located far from populated areas, offer significant advantages in managing climate, water, and biodiversity systems that are crucial to human health and quality of life [How Forests Benefit Cities' Water, Health, Climate and Biodiversity | World Resources Institute \(wri.org\)](#).

Forest Bathing, an expression also known as the Japanese expression "Shinrin Yoku", originated in Japan in 1982 based on ancient traditions. It aims to help stressed Japanese office workers by lowering blood pressure, stress hormones (cortisol), improving focus, concentration and memory, and strengthening the immune system. After various scientific studies, it has been proven that Forest Therapy, or Forest Bathing, is a healthy way to prevent diseases just by visiting a natural area. These are conscious, slow walks, not walking or fast walking. When relaxed, these forest therapy walks have a calming and refreshing effect.

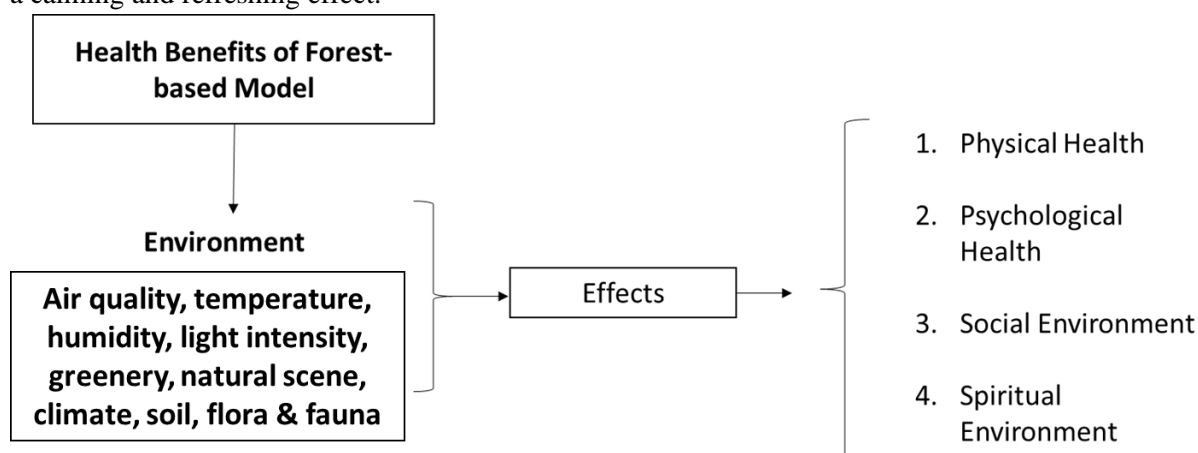


Figure 4 Effect of the factors of pristine nature on mental, social and spiritual health of a person

Source: Self Elaboration

Fig 4 depicts the effect of the factors of pristine nature such as air quality, temperature, humidity, light intensity to physical, mental, social and spiritual health of a person. As Nature-based health tourism is a growing trend in the tourism industry, and forests are one of the natural assets that offer various health benefits to visitors. Forests are known to improve physical health, mental health, social health, and spiritual health. Forest-based tourism has the potential to promote health and well-being, and hence, it is essential to develop a forest model for nature-based health tourism. The forest-based model will help in designing and managing nature-based health tourism activities in forests such as:-

1. **Conservation of natural resources:** Forest-based models can contribute to the conservation of natural resources by promoting sustainable forest management practices, which can help to maintain the ecological integrity of forests, reduce the risk of forest fires, and enhance the resilience of forest ecosystems to climate change. Forest-based models can also contribute to the protection of endangered species and the conservation of biodiversity (*Benefits of Forests – Hitchcock Woods Foundation, n.d.*).
2. **Preservation of cultural heritage:** Forests are often associated with cultural heritage, as they have played a vital role in the history, traditions, and customs of many communities. Forest-based



models can contribute to the preservation of cultural heritage by promoting sustainable tourism practices that respect and celebrate local cultures. Forest-based models can also contribute to the protection of cultural sites and the promotion of cultural tourism.

3. **Economic development:** Forest-based models can contribute to economic development by generating income and employment opportunities for local communities. Sustainable forest management practices can create sustainable livelihoods for forest-dependent communities, such as through the production of non-timber forest products (NTFPs) and ecotourism activities. Forest-based models can also generate revenue for governments through the sale of timber and other forest products (*Benefits of Forests – Hitchcock Woods Foundation*, n.d.).
4. **Enhanced visitor experience:** Forest-based models can enhance the visitor experience by providing opportunities for recreation, education, and cultural exchange. Forest-based tourism activities, such as hiking, birdwatching, and camping, can offer visitors a unique and immersive experience in nature. Forest-based models can also provide opportunities for visitors to learn about local cultures and traditions.

Activities involved in Forest – based Therapies

Forest- based therapy activities have the potential to provide a range of health benefits for participants, including reducing stress and anxiety, improving mood, promoting physical activity, and enhancing feelings of relaxation and wellbeing. However, further research is needed to fully understand the mechanisms underlying these effects and to identify the most effective types of forest therapy activities for different populations. To fully comprehend the mechanisms underlying these effects and to determine the best kinds of forest- based therapy activities for all. These are:-

- **Guided forest walks:** It has been demonstrated that guided forest walks can improve mood, lower stress, and increase physical activity, among other health benefits. A study by (Li, 2009) found that participants who took part in a forest walking program had lower levels of cortisol (a stress hormone) and reported feeling less anxious and depressed.
- **Meditation and mindfulness:** Research has shown that meditation and mindfulness practices can have a range of positive effects on mental and physical health, including reducing stress, anxiety, and depression (Khoury et al., 2013).
- **Yoga and stretching:** Yoga has been shown to have a range of physical and mental health benefits, including improving flexibility and balance, reducing stress, and promoting relaxation (Ross & Thomas, 2010). Study shows that forest-based yoga program had lower levels of cortisol and reported feeling more relaxed and refreshed.
- **Forest bathing:** It has been demonstrated that spending time in nature has a variety of positive health effects, such as stress reduction, mood improvement, and immune system stimulation (Keller et al., 2023). It has been found that forest bathing reduced stress hormones and improved mood and subjective feelings of relaxation
- **Photography and art:** Engaging in creative activities, such as photography and art, has been shown to have positive effects on mental health, including reducing stress and anxiety and improving mood (*Forest Therapy: Description, Benefits, and Effectiveness*, 2022). Forest-based art program was effective in reducing stress and improving subjective feelings of relaxation.
- **Educational programs:** Learning about the natural environment has been shown to have positive effects on mental and emotional wellbeing (Hinds and Sparks, 2008). It has been found that



educational programs that included experiential learning in nature improved emotional wellbeing and feelings of connection to nature.

- **Volunteer opportunities:** Engaging in volunteer activities shown to have positive impacts on mental health, that results in reducing symptoms of depression and anxiety (Greenfield and Marks, 2004). Therefore participating in a forest volunteer program was effective in improving subjective feelings of happiness and wellbeing.
- **Nature-based play:** Play in natural environments has been shown to have positive effects on children's mental and physical wellbeing, including improving cognitive development, reducing symptoms of attention deficit hyperactivity disorder (ADHD), and enhancing emotional regulation (Fjørtoft, 2004).
- **Forest-based aromatherapy:** Aromatherapy using essential oils derived from trees and plants has been shown to have a range of health benefits, including reducing stress and anxiety, improving sleep quality, and enhancing mood (2020)
- **Forest-based cooking and nutrition:** Learning about and preparing food from natural sources in the forest can promote healthy eating habits and enhance feelings of connection to nature (Kuo and Sullivan, 2001).

Research Methodology

For this theoretical research paper, researcher uses the secondary sources such as literature review, books, magazines and internet related to forest – based therapy and health tourism. As well as researcher also draws a relationship between forest – based natural therapies, tourists and their destination with her personal thinking. Through her own think thank researcher developed two models for forest-based in nature-based health tourism, that guides and helps the stakeholders to develop such market for visitor's health and well-being.

Findings & Conclusion

The findings of the research suggest that forest-based models can offer a sustainable tourism practice that can contribute to the conservation of natural resources, the preservation of cultural heritage, and the economic development of local communities.

Such green transformation provides a new opportunity for people, planet and prosperity of Bharat.

Implementing forest-based therapy as a model for tourism destinations could have several potential benefits. Firstly, it could attract a specific niche of tourists interested in wellness and eco-tourism, which could increase the number of tourists visiting a destination. Secondly, it could have positive economic impacts on local communities by promoting sustainable tourism and creating job opportunities related to forest therapy activities, such as guided walks and meditation sessions.

However, it is important to note that implementing forest therapy as a tourism model requires careful planning and consideration of the potential impacts on the natural environment. Overuse of natural areas could result in negative impacts such as soil erosion, habitat destruction, and disturbance of wildlife. Additionally, the cultural and social impacts on local communities should also be taken into account, as tourism can sometimes lead to cultural commodification and exploitation.

Overall, while implementing forest therapy as a model for tourism destinations has the potential to bring benefits, it is important to consider the potential impacts and take measures to mitigate any negative effects.



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