

## A Micro Analysis of Tourists, Other Participants and Tourism Activities at Osun Osogbo Sacred Grove, Nigeria

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### Abstract

The study analyzed the tourists and other participants who visited the Osun Osogbo Sacred Grove during the year 2013 edition and the tourism activities engaged in. The research relied on a structured questionnaire to elicit data from one hundred and eighty respondents who were active participants during the festival. The respondents were selected by simple random sampling technique. Data were summarized and presented by descriptive statistics. Findings showed that among the respondents interviewed; 51.1% were males, 88.9% were employed, 45.6% were married, 41.7% were Muslims and 58.3% were either 31 years old or above. Also, the most sought after attractions at the grove includes; Osun River (84.4%), the shrines (83.3%), worship points (82.2%) and art works (73.3%). The study further established that the challenges of tourism at the site include: poor co-ordination (87.8%), over population/ carrying capacity of the grove (76.7%), lack of adequate public utilities/public toilets (67.2%), accessibility (13.9%), theft (12.8%), and security (11.7%). Hence, it is recommended that concerted effort be made by all stakeholders to address problems associated with tourism activities at the grove in order to better harness its social, economic, and developmental benefits and ensure the sustainability of such benefits.

**Keywords:** Tourists, Other Participants, Tourism, Osun Osogbo Sacred Grove

### Introduction:

Sacred forests, often referred to as sacred groves, are sites that have cultural or spiritual significance for the people who live around them. They have been protected by communities around the world for a variety of reasons, including religious practices, burial grounds, and watershed value (Lebbie and Freudenberger 1996; Chandran and Hughes 1997; Malhotra et al. 2007; Sheridan and Nyamweru 2007; Ormsby and Bhagwat 2010; Ormsby and Edelman 2010). India has the highest concentration of sacred groves in the world-estimated to be over 100,000 sacred groves (Malhotra et al. 2007), however, these are disappearing due to cultural change and pressure to use the natural resources that they contain (Chandrakanth et al. 2004). The size of the sacred groves varies greatly from small plots less than one hectare to larger tracts of hundreds of hectares (Ntiamao-Baidu 1995; Malhotra et al. 2007). In some cases, these fragments represent the sole remaining natural forests outside of protected areas and may be key reservoirs of biodiversity. Sacred forests are known to conserve habitats that are not represented in the current protected area system (Bhagwat and Rutte 2006), and serve as habitat for endemic species (Jamir and Pandey 2003). These have been reported to be relict forests and may be the only remaining climax vegetation of an area, although many are now disturbed as a result of human actions (Gadgil and Vartak 1976; Khiewtam and Ramakrishnan 1989; Kalam 1998; Tiwari et al. 1998; Upadhaya et al. 2008). Traditional rules support conservation by limiting activities within sacred forests. Sacred groves also provide ecosystem services, such as erosion control and maintenance of water quality (Tiwari et al. 1998). Sacred groves are forested sites that have cultural or spiritual significance. They exist around the world and represent a long-held tradition of community management of forests. While most sacred sites are not tourist destinations, tourism may represent a method to provide additional protection for sacred sites, including revenue to help with management and conservation. Tourism can celebrate the cultural aspects of the site, in the case of cultural heritage tourism, or ignore them as is often the case with mass tourism. Research in Ghana and India revealed sites with a range of stages of tourism development and levels of revenue sharing. Each site has a different history of local community and/or external support as well as approaches to manage tourists. A number of factors contribute to pressures on the groves, including cultural changes and natural resource demands. In some cases, economic incentives can link with traditional protection for successful natural resource conservation. Tourism represents both a possible benefit to groves through recognition and valuing of the site that can lead to funding and conservation support, but also a threat to sacred sites due to the negative consequences of possible over-use, such as solid waste disposal and ecological impacts. Support for traditional rituals, community resource management, and education programs associated with the groves is recommended. Culturally sensitive tourism guidelines and tourism profit sharing plans, developed with the input of sacred grove stakeholders and custodians, are needed. Visitor carrying capacity should be considered, as well as the possible implications of designating sacred groves as World Heritage Sites (Ormsby, 2012).

In Nigeria, several religions coexist, all of which attract their adherents and admirers at different centres and in different periods. Religious tourism commonly referred to as faith tourism is a form of tourism whereby people of the same faith travel individually or in groups for religious purposes. Although many Nigerians profess either Christianity or Islam, they have continued to practice some of the older religious traditions like ancestor worship and the belief in deities (Emeka and Nzeh. 2009, Enemu and Oduntan. 2012). It is a shared belief amongst the many peoples of Nigeria that ancestral spirits and gods influence the affairs of the living. They not only protect the people from mishaps, but also serve as a link between the world here and the world beyond. This explains why many traditional societies maintained constant communion with these spirits through sacrifices, libations and other religious observances (Okpoko 2001). Groves and shrines are believed to be the dwelling places of these spirits. In Nigeria, there are numerous examples of local shrines that have been points of attractions for adherents and admirers. The two prominent centres worthy of mention are the Omo - Ukwu temple in Ohaofia and Osun shrines at Oshogbo (Okpoko 2001).

The Osun - Osogbo Grove is among the last of the sacred forests which usually adjoined the edges of most Yoruba cities before extensive urbanization. The landscape of the grove and its meandering river is dotted with sanctuaries and shrines, sculptures and art works in honour of *Osun* deity. Set within the forest sanctuary are forty shrines, sculptures and art works erected in honour of Osun, a Yoruba deity, two palaces, five sacred places and nine worship points strung along the river banks for designated priests and priestesses. The grove has a mature, reasonably undisturbed, forest canopy, which supports a rich and diverse flora and fauna including the endangered white-throated monkey. The grove is an active religious site where daily, weekly and monthly worship takes place. More importantly, an annual processional festival to re-establish the mystic bonds between the goddess and the people of the town occurs every year over twelve days between July and August and thus sustains the living cultural traditions of the Yoruba people. The Grove is also a natural herbal pharmacy containing over 400 species of plants, some endemic, of which more than 200 species are known for their medicinal uses (Olaniyi, 2011). The Osun is acclaimed as the goddess of fertility, prosperity and healing. Despite the proximity of the forest to human habitation, the grove was traditionally maintained and protected by the indigenous people using myths and belief system. These prevent any form of encroachment regarded as sacrilegious and offensive to the goddess. The Grove was first declared a National Monument by the Federal Government of Nigeria in 1965. The original designation was amended and expanded in 1992 to protect the entire 75 hectares. Osun grove was recognized by UNESCO in 2005 as a world heritage site, and this has been linked to the consistence that the festival has enjoyed over the years and the protection of the values of the grove by the people. Speaking at an event on what has helped to preserve the Osun Osogbo heritage in the face of the threat of civilization, the coordinator of the National Museum, who is directly in charge of the grove, explained that it has to do with consistency. According to him, "the reason why UNESCO recognized Osun Osogbo sacred grove, inclusive of the festival, is because of the authenticity that is involved. It is the only festival that, since 1370 AD, has remained what it was originally despite modernity. There has not been any adulteration, everything has been in its original state, and all the structures that were put in place that form the foundation of Osun Osogbo kingdom are still in existence in the grove. Osun - Osogbo Sacred Grove is also part of National Tourism Development Master Plan that was established with World Tourism Organization (WTO) and United Nations Development Program (UNDP). Tayler (1999) stated that the annual Osun Osogbo festival will need to be better managed so that the site will no longer suffer from adverse impacts of tourism during the festival. The Grove will also serve as a model of African heritage that preserves the tangible and intangible values of the Osogbo people in particular, and the entire Yoruba people. Olatunbosun (2012) opined that the Grove will remain a living thriving heritage that has traditional landmarks and a veritable means of transfer of traditional religion, and indigenous knowledge systems to African people living at home and in the diaspora.

**Osun Osogbo Festival:** According to Lawal (2007), festivals are the means through which man expresses his awareness of a transcendental being outside himself. Osun goddess had pledged to protect Osogbo people, provide water for them and make their women fertile in return for an offer of sacrifice annually. In line with this, Osun Osogbo festival is an annual event where Osun is worshipped and beseeched for blessings and healings. It is believed that Osun has powers to treat any barren woman, if properly approached. The Osun Osogbo festival is the most pronounced, popular and prominent among all traditional festivals in Osogbo and by extension in south western, Nigeria (Olaniyi, 2011). A quick look into history reveals that most of the age-long culture heritage of the founding fathers of Africans have gone into extinction with the coming of modern norms and civilization, while attempt will not be made to question the benefits of the encroaching way of life, it must be said that effort must be made to remind Africans of their roots, for the sake of posterity, for which lots of organizations and institutions must be given credence. Osun Osogbo festival draws tens of thousands of believers and tourists from both inside and outside the country. It brings devotees of the deity from all over the world together annually, from Cuba to Brazil, United States of America to Jamaica, Canada to Spain, they come together to pay homage to the goddess, who they believe is the source of life. It is indeed not only about merry making, but about social bond, culture and history. The custodian and priestess of this grove is an Australian born devotee of the Osun deity, Suzanne Wenger, who died at the age of 83, and popularly called "Aduni Olorisa" or "Iya Osun" by the believers.

The Osun devotees dress traditionally in white cloths and believe that the River goddess brings divine favour and has healing and fertility powers. Not quite long, it gained international recognition and standard for cultural tourism and ecotourism tourism. The Federal government of Nigeria recognized it as an important tourism asset and remarkable festival that attracts international attention. The event over the years, has given residents and tourists the opportunity to recreate socially and culturally, as they re-enact one of their renowned age-long spiritual and communal feast. Indeed the Osun Oshogbo has been and is one of the most outstanding and preserved cultural practices of the various festivals in Nigeria and Africa as a whole.



*Votary Maid*

**Study Area:** Osogbo, the capital of Osun state, Nigeria and the host of the sacred grove lies on coordinates 7°46' North 4°34' East with a landmass of 47kmsq. According to the 2006 Population and Housing Commission Census, the city has a population of 250,951 people. Osogbo is a commercial and industrial centre. This started in 1907, when the British Cotton Growing Association sited an industry for growing and ginning of cotton. The Nigerian Tobacco Company (NTC) also built its first factory in Osogbo. In this same year, a major turning point for the city which helped in its industrial and commercial development occurred i.e. the construction of railway tracks linking it to other parts of Northern Nigeria. This attracted people from far and near. The city is famous for the annual Osun Osogbo Festival which attracts tourists from different part of the world. Osogbo has tropical climate with an annual average temperature and precipitation of 26.1 °C and 1, 241 mm respectively. According to Ola and Adewale (2014), the vegetation of osogbo constitutes a transition between the rain forest and tropical equatorial in the South and Guinea and tropical Savannah in the North. Hence, the vegetation of the area is described as derived savannah characterized by gallery of forest along stream sides and tall grasses with scattered perennial trees over land.



*Location Map of Osun Sacred Grove within Nigerian Map*

**Objectives of the Study:** The main objective of the study was to carry out a micro analysis of tourists, other participants and tourism activities at Osun Osogbo Sacred Grove. Specific objectives were to:

- i. examine the socio – economic characteristics of the participants at the festival,
- ii. identify and establish tourists' preference for the attractions at the groove,
- iii. identify the motives for participating in Osun Cultural Festival, and
- iv. identify challenges associated with tourism at the groove.

**Research Questions:** The research questions formulated to guide this study include the following:

- i. What are the socio – economic characteristics of the participants at Osun Osogbo Festival?
- ii. What are the available attractions at the groove and their scale of preference among tourists?
- iii. Why do tourists participate in the festival?
- iv. What are the challenges associated with tourism at the groove?

### **Methodology**

A simple random sampling technique was used to select one hundred and eighty respondents who were active participants at the year 2013 edition of the annual cultural festival. Descriptive statistics such as frequency count and percentages were used to present, describe and summarize the data. These statistics also provided answers to the research questions.

**Table 1: Distribution of respondents by socio – economic characteristics**

n = 180		
Characteristics	Frequency	Percent
<b>Sex</b>		
Male	92	51.11
Female	88	48.89
<b>Age (years)</b>		
Below 20	30	16.67
21 – 30	45	25.00
31 – 40	35	19.44
41 – 50	40	22.22
51 and Above	30	16.67
<b>Education</b>		
No formal education	40	22.22
Primary	20	11.11
Secondary	61	33.89
Tertiary	59	32.78
<b>Employment</b>		
Student	20	11.11
Civil servant	64	35.56
Artisan	37	20.56
Trader	39	21.67
Unemployed	20	11.11
<b>Marital status</b>		
Single	61	33.89
Married	82	45.56
Divorced	17	9.44
Widowed	05	2.77
Separated	15	8.33
<b>Religion</b>		
Islam	75	41.67
Christianity	60	33.33
Traditional	45	25.00
<b>Monthly income</b>		
Less than #10,000	19	10.56
#10,001 - #50,000	74	41.11
#50,001 - #100,000	50	27.78
Above #100,000	37	20.56

**Source: Field Survey 2013**

The above table shows the distribution of respondents by socio – economic characteristics. From the distribution, both sex i.e. male and female were well represented as their percentages (51.1% and 48.9% respectively) were almost equal. This indicates that both males and females participated actively in the cultural festival. A quarter of the respondents (25%) were within the age range of 21 to 30 years old, 16.7% were less than or exactly 20 years old, 19.44% were within 31 to 40 years old, 22.2% were within 41 to 50 years old while 16.7% were 51 years old and above. This finding showed that different age groups participated in the festival. About 32.8% of the respondents had tertiary education, 33.9% had secondary education, 11.11% had primary education while 22.2% had no formal education. This result showed that the level of education attained by individuals is not a factor in favour or against participation in traditional festival. Among the respondents, 35.6% were civil servants, 21.7% were traders, 20.6% were artisans, 11.1% were students and 11.1% were unemployed youths. This result revealed that participants at cultural festival are made up of different categories of people. Table 1 further showed that 41.7% of the respondents were Muslims, 33.3% were Christians and 25% were traditionalists. This indicates that majority of the participants (75%) at the festival belonged to one religious group or the other. This result



upholds the finding of Emeka *et al.* (2009) and Oduntan (2010) who stated that, majority of Yorubas regardless of their religious affiliations, still respect, appreciate and seek for one help or the other from the Yoruba deities at one point or the other and mostly via participation in traditional festivals. The marital status of the respondents with their respective percentages was as follows: married (45.6%), single (33.9%), divorced (9.4%), separated (8.3%) and widowed (2.7%). This shows that majority of participants at the festival (79.5%) were either married or single. Data on the monthly income of the respondents revealed that 41% earned between #10,001 and #50,000, 27.7% earned between #50,001 and #100,000, 20.6% earned #100,000 and above and 10.6% earned #10,000 and below monthly. Hence, the monthly income of the respondents varied.

**Table 2: Distribution of respondents by attractions at the groove**

n = 180		
Characteristics	Frequency	Percent
Osun River	152	84.4
Art Works	132	73.3
Sanctuaries	80	44.4
Ancient Palaces	30	16.7
Worship Points	148	82.2
Fauna/White Throated Monkeys	85	47.2
Undisturbed Forest Canopy	87	48.3
Shrines	150	83.3
Medicinal Herbs	89	49.4
Suspended bridge	70	38.9

**Multiple responses**

**Source: Field Survey 2013**

The above table presents the available attractions to tourists in Osun Osogbo Groove, the table further shows that the attractions can be categorized into four groups according to their popularity and preference of tourists. The first group includes those attractions that have something to do with *worship* by the followers of Osun deity and others who have come to seek one assistance or the other from the goddess. Attractions in this group include: Osun River (84.4%), Shrines (83.3%) and worship points (82.2%). The next important attractions in the hierarchy are the art works at the groove, followed by attractions that has something to do with *biodiversity*, these include: *white throated monkeys* (47.2%), *sanctuaries* (44.4%), *undisturbed forest canopy* (48.3%) and *medicinal herbs* (49.4%) and the last in the ranking of tourist attractions visited by the tourists is *an antiquity (a suspended bridge constructed by the Europeans a long time ago)*.



*Foreign tourists at the Grove*

**Table 3: Distribution of respondents by motives for visiting Osun groove**  
**n = 180**

Characteristics	Frequency	Percent
Spiritual/Religious	120	66.7
Social/Leisure	115	63.9
Barrenness	42	23.3
Prosperity	140	77.8
Protection	141	78.3
To identify with the community	102	56.7
Cultural reasons	118	65.5
Curiosity	34	18.9

**Multiple responses**

**Source: Field survey, 2013**

Table 4 showed that 78.3% of the respondents were motivated to participate in the festival to seek protection from the goddess, 77.8% were motivated to seek prosperity, 66.7% were motivated because it is their religion, 65.5% were motivated by cultural reasons, 63.9% were motivated by the social/leisure aspect of the festival, 56.7% were motivated by the need to identify with the host community (Osogbo), 23.3% were motivated by their need to seek solution to their problem of barrenness and 18.9% were motivated by curiosity to know and see things by themselves. This result is in line with the assertion of Ola (2012) who stated that participants at the festival were of different aims and objectives, and that rarely do any participant had a sole objective, rather two or more objectives.

**Table 4: Distribution of respondents by challenges of tourism activities at the groove**

**n = 180**

Characteristics	Frequency	Percent
Overcrowding/Coordination	158	87.8
Accessibility	25	13.9
Security	21	11.7
Groove's carrying capacity	138	76.7
Crime/Theft	23	12.8
Lack of public utilities/public toilets	121	67.2

**Multiple responses**

**Source: Field Survey, 2013**

This study identified problems militating against tourism at Osun Osogbo Groove to include: poor co – ordination of tourists (87.8%), high population of tourists and other participants/carrying capacity of the groove (76.7%), lack of public toilets (67.2%), accessibility (13.9%), theft (12.8%) and security (11.7%). These data revealed some of the problems confronting tourism activities at the groove. This is an indication that there are some issues to address to further make tourists' stay and participation in the event livelier. Though Nigeria Tourism Development Corporation (NTDC) provided mobile toilets during the festival, however, the three most important challenges of tourism at the groove identified in this study were: poor co – ordination of tourists and tourism activities, the carrying capacity of the groove and insufficient public utilities/public toilets.





*Osun devotees, tourists and other participants during one of the events to mark the festival*

### **Conclusion and Recommendations**

From the findings of this study, it can be concluded that:

- i. tourists and others who participated at the cultural festival were of diverse socio – economic characteristics,
- ii. there are different attractions at the groove and tourists’ preference for the attractions varied, this study then categorized the attractions into four, these include: attractions that have something to do with *worship* (Osun River, Shrines and worship points), *art works*, *biodiversity* (white throated monkeys, sanctuaries, undisturbed forest canopy and medicinal herbs, and *antiquity* (suspended bridge),
- iii. the motives for participating in the festival among the respondents varied and include: worship, leisure, barrenness, prosperity, protection, cultural reasons, curiosity, and to identify with the community, and
- iv. the challenges of tourism activities during the festival identified by this study include: poor co-ordination, over population/ carrying capacity of the groove, lack of adequate public utilities (public toilets), accessibility, theft, and security.

### **Recommendations**

Having identified problems associated with tourism activities at Osun Osogbo Sacred Grove to include: poor co-ordination, over population/ carrying capacity of the groove, lack of adequate public utilities (public toilets), accessibility, theft, and security, it is therefore recommended that all stakeholders such as: Ministry of Culture, Home Affairs and Tourism, State of Osun, the Federal government via the relevant agencies and parastatals, private investors, host community and co – operate bodies (who may include this in their social responsibility) should strive to address these problems thereby enhancing, promoting and sustaining tourism activities at the groove.

### **References**

- Bhagwat, S. A. and Rutte, C. (2006): Sacred groves: Potential for Biodiversity Management. *Frontiers in Ecology and the Environment* 4: 519-524.
- Chandran, M. D. S. and Hughes, J. D. (1997): The Sacred Groves of South India: Ecology, Traditional Communities and Religious Change. *Social Compass* 44: 413-428.
- Chandrakanth, M. G., M. G.Bhat, and M. S. Accavva (2004): Socio - Economic Changes and Sacred Groves in South India: Protecting a Community - Based Resource Management Institution. *Natural Resources Forum* 28: 102-111.
- Emeka, E.O. and Nzeh, C.A. (2009) Faith – Based Activities and Their Tourism Potentials in Nigeria. *International Journal of Research in Arts and Social Sciences* 1: 286 – 298.
- Enemu, O. B. and Oduntan, O. C. (2012) Social Impact of Tourism Development on Host Community of Osun



- Osogbo Sacred Grove, *Journal of Humanities and Social Science*, Vol. 2(6): 30 – 35.
- Gadgil, M. and V. D. Vartak (1976): The Sacred Groves of Western Ghats in India. *Economic Botany* 30: 152-160.
- Jamir, S. A. and Pandey, H. N.(2003): Vascular Plant Diversity in the Sacred Groves of Jaintia Hills in Northeast India. *Biodiversity and Conservation* 12: 1497-1510.
- Kalam, M. A. (1998) Sacred Groves in Karnataka In: *The social construction of Indian forests*, Jeffery, R (ed.) Edinburgh: Centre for South Asian Studies.
- Khiewtam, R. S. and Ramakrishnan, R. S. (1989): Socio - Cultural Studies of the Sacred Groves of Cherrapunji and Adjoining Areas in North - Eastern India. *Man in India* 69: 64-71
- Lawal O. K. (2007): The Aesthetic Value of Osun Festival. An Unpublished Bachelor of Arts Essay Submitted to the Department Of English Language, Faculty Of Arts, University Of Ilorin, Ilorin, Nigeria.
- Lebbie, A. R. and M. S. Freudenberger (1996) *Sacred Groves in Africa: Forest Patches in Transition*. In Forest patches in tropical landscapes, Schelhas, J. and R. Greenberg (ed.). Washington, DC: Island Press.
- Malhotra, K. C., Gokhale, Y, Chatterjee, S. and Srivastava, S. (2007): *Sacred Groves in India*,. New Delhi: Aryan Books International.
- Ntiamoa - Baidu, Y. (1995): *Indigenous Versus Introduced Biodiversity Conservation Strategies: The case of Protected Area Systems in Ghana*. Washington, DC: WWF Biodiversity Support Program Volume 1. African Biodiversity Series.
- Okpoko, P. U. (2001): Harnessing the Tourism Potentials of Sacred Groves and Shrines in Southeast Nigeria. *West African Journal of Archaeology*, 31(1): 93 - 94
- Oduntan, O. C. (2010): Socio – Cultural Impact of Tourism Development on Host Community of Osun Osogbo Sacred Grove. An Unpublished B.Sc Thesis of the Department of Home Economics/Hotel Management and Tourism, Micheal Okpara University, Umudike, Abia State, Nigeria.
- Olaniyi, T. A. (2011): Osun Osogbo Festival, The Nigerian Voice Magazine, South Africa, September 15<sup>th</sup>, 2011 Edition.
- Ola, A.B. and Adewale, Y.Y. (2014): Infrastructural Vandalism in Nigerian Cities: The Case of Osogbo, Osun State. *Journal of Research on Humanities and Social Sciences*, 4 (3): 49 – 60.
- Ola, W. (2012): B.N.B History: Osun Osogbo, Culture and Tradition Celebrated Since 1370 retrieved from <http://bunnaj.blogspot.com/2012/08/bnb-history-osun-osogbo-Culture-and.html> and accessed on 27/05/2013.
- Olatunbosun, O. (2012): What You Did Not Know About Osun Osogbo, Travel and Tourism Viewpoint, Bureau of Communication and Strategy, Governor’s Office, State of Osun.
- Ormsby, A. (2011): The Impacts of Global and National Policy on the Management and Conservation of Sacred Groves of India. *Human Ecology*. 39: 783 - 793.
- Ormsby, A. (2012): Cultural and Conservation Values of Sacred Forests in Ghana. In Pungetti, G., G. Oviedo, & D. Hooke (Eds.) *Sacred Species and Sites: Advances in Biocultural Conservation*. Cambridge: Cambridge University Press.
- Ormsby, A. A. and Bhagwat, S. A. (2010): Sacred Forests of India: A Strong Tradition of Community - Based Natural Resource Management. *Environmental Conservation* 37: 320 - 326.
- Ormsby, A. and Edelman, C. (2010): Tafi Atome Monkey Sanctuary, Ghana: Community - Based Ecotourism at a Sacred Site. In: *Sacred Natural Sites: Conserving Nature and Culture*, Verschuuren, B., R., Wild, J., McNeely, and Oviedo, G. (ed.) London:Earthscan
- Sheridan, M.J. and Nyamweru, C. (2007): *African Sacred Groves: Ecological Dynamics and Social Change*. Athens, OH: Ohio University Press.
- Taylor, J. (1999) The Sacred Grove of Osun Osogbo retrieved from <http://www.theatlantic.com/past/docs/unbound/abroad/jt990526.htm> and accessed on 27/05/2013.
- Tiwari, B. K., Barik, S. K. and Tripathi, R. S. (1998): Biodiversity Value, Status, and Strategies for Conservation of Sacred Groves of Meghalaya, India. *Ecosystem Health* 4: 20 – 32.
- Upadhaya, K., Barik, S. K., Pandey, H. N. and Tripathi, O. P. (2008) Response of Woody Species to Anthropogenic Disturbances in Sacred Forests of Northeast India. *International Journal of Ecology and Environmental Sciences*, 34: 245 – 257.