PERFORMANCE AND VISITORS' PERCEPTION OF OUTDOOR RECREATION FACILITIES IN BEPPU CITY, OITA JAPAN

by

K. K A Chamani Maduranthi

September 2011

Thesis Presented to the Higher Degree Committee
of Ritsumeikan Asia Pacific University
in Partial Fulfillment of the Requirement for the Degree of
Master of Science in International Cooperation Policy

ACKNOWLEGEMENT

This research effort and the thesis is a great achievement even though it appears as a small piece of work. It was a great challenge to do my research in Japan at the preliminary stages of my work, but it progressed smoothly until its final stage. I should mention here, with great appreciation, that without the kind assistance of many personnel/individuals this wouldn't have been a success in this final form.

I should be grateful and be thankful to Professor Dr. Sanga Ngoie Kazadi, the Research Supervisor of the Ritsumeikan Asia Pacific University for being a good teacher, for guiding me all the time, advising and encouraging me especially at times of confusion, and for the patience shown throughout this work,

Professor Malcolm J. Cooper, of the Ritsumeikan Asia Pacific University, being a specialist in my study area for spending his precious time without any hesitation, advising and guiding me in improving my research work,

All the academic staff of Asia Pacific Studies of the Ritsumeikan Asia Pacific University, for making me knowledgeable during my Masters Program which has put the sound base to this work, Professor Francisco P. Fellizar,Jr. for selecting me as a student to the Graduate School of the Asia Pacific University and his kind guidance there after,

The Environmental Opinion Leaders (ENVOL) Program and its staff, which I am also a participant for providing me opportunities to explore the new fields of studies and develop my field research skills, making me much more confident of my self and providing all supportive facilities to compile my thesis,

The Tourism and Community Development Division, the Hot Springs Management Division, the Environment Division, the Urban Policy Division, the Parks and Recreation Division, the Lake Shidaka Management Division of the Beppu City Office who provided me with the updated reports, plans, and other information materials upon my request with great enthusiasm,

Ms Tomoko Ko (formerly, Tourism & Community Development Division, Beppu City Office), Ms Junko Abe, Tourism & Community Development Division of Beppu City office, who had taken lot of trouble and effort for providing me with all necessary information, and coordinating with other City Office officials, Ms Flynn Naoko of the Cultural and International Affairs Division who helped me to find some information at the final stage of my work. Ms Inage Katsue of Beppu city Hall for assisting in relevant matters,

Even though the individual respondents of my questionnaire survey may not see this note of Thanks, I should specially mention them here, with much honor for their patience in responding me after few words of explanation of my efforts within the facilities by spending their leisure time.,

Mr Seth Mberego, of the Geo Science laboratory, for giving a big helping hand to move forward at the final stage, Mr K.S. J Kumara and Ms Ikuko Morisaki, who spent time to improve this work and all other friends in the Geo Science laboratory for their kind assistance,

Mr Tomoya Kato who joined me in some of my field work and Ms Ayumi former APU student, Ms Nelli Indrayani and Ms Chihiro Nakata of laboratory of biodiversity and natural habitat, Hirano Sense and Kaori Ito from Beppu International Plaza, who assisted me with short notice in translating my documents into Japanese and directing me to the sources of information,

The chief administrative officer of African Safari, Beppu, and the person incharge of the Myoban sightseeing and onsen facility for their understanding and cooperating with me during the field visits,

The library staff of the Ritsumeikan Asia Pacific University for providing and helping me in search of reference material relevant to various aspects of the study,

The World Bank for awarding me the scholarship and financial assistance under the Joint Japan/ World Bank Scholarship Program to follow this Masters Degree Program in Japan which would otherwise will not be possible at any means,

The Ministry of Environment and Natural Resources in Sri Lanka in which I am employed, for providing me this opportunity and granting me leave without any hesitation. Professor U. S Amarasinghe, University of Kelniya, Sri Lanka, Dr (Ms.) L.P Batuwitage,

Additional Secretary, Ministry of Environment and Natural Resources who paid an extra attention in encouraging me throughout my studies, to all my true friends of Sri Lanka who were with me all the time and cared me a lot even in my absence with them,

To my beloved parents, and my loving sister although they are not present in person here who did every thing very sensitively throughout my life, to my loving husband Suhada and darling daughter Sayuni for their big sacrifices, for being with me, and giving me all the energy and courage until the completion of this study.

A Chorus of THANKS may not be enough for all the above and those whom I could not mention here by name but helped me in numerous ways to make this study a success.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Performance and Visitors' Perception of outdoor recreation facilities in Beppu city, Oita, Japan

Leisure and recreation have become important concerns in modern day societies. Different types of recreational opportunities, serve in different capacities to fulfill multi-dimensional recreational needs of the communities. Beppu one of Japan's most popular "onsen city" in the world is in the processes of city development and revitalization. Developing broad spectrum of natural resource base and built in facilities for outdoor recreation would upgrade community's well being while enhancing city development and would lead it to be a unique tourism cities in future. Popular selected out door recreation facilities; such as public parks, natural lake, jigoku and outdoor onsen facilities, rope way, wildlife safari park, aquarium, amusement park, natural monkey park, scenic observation points operating in Beppu were studied by personal observations, questionnaire surveys, and secondary sources of information. These methods were triangulated in the form of case studies to investigate the performance and visitors' perception of those facilities. During the month of November 2010 in Lake Shidaka, Myoban complex and Beppu park, total visitor counts, questionnaire surveys to obtain visitor profiles, visitor perceptions, constraint factors in participation of outdoor recreation and frequently visiting recreational facilities of the visitors were investigated. Total visitor counts showed that visitations were higher in weekends or holidays compared to that of weekdays. Myoban complex has regular visitations both in weekdays and holidays in contrast to Lake Shidaka and Beppu Park. Visitor profiles in Beppu park revealed that they were short time spending, frequent visitors from peripheral distances. Visitor perceptions revealed that the most appreciated qualities in Lake Shidaka and in Beppu park were the natural environment, openness and

quietness, while Myoban complex has been accounted for its easy access. Crowdedness in Lake Shidaka, the absence of refreshment outlets, kids play area in Beppu park, noxious smell and smoke, inadequacy of some infrastructure facilities in Myoban complex were some of the visitor concerns recorded. More recreation diversification opportunities, such as nature trails, environmental education opportunities for Lake Shidaka, physical exercising facilities, kids play areas for Beppu park and provision of additional space for Myoban complex have been suggested. The level of visitor satisfaction and frequency of visiting the facilities were observed as sustainability indicators of the destinations. 88% and 26% of the visitors showed a maximum level of visitor satisfaction in Lake Shidaka and in Beppu park respectively. 94% of the visitors recorded an average level satisfaction in Myoban complex. Among the other recreation facilities around Beppu, public and beach parks provide both landward and coastal recreation experiences. Kintetsu ropeway is a form of forest recreation that contributes to the conservation attempts of the Aso Kuju National Park. African safari, the open zoological park, provides excitement with wild animals serves in ex situ conservation and has carefully planned for economic benefits. Umitamago, the aquarium has made available many performance schedules with intensive interactive visitor activities, some educational tools and special concerns on children as well . Mount Takasakiyama monkey park is an out door recreation facility that serves in landscape and biodiversity conservation and with a museum operating in the premises serving in numerous ways in an urban area. Time constraint has mentioned as the prime confining factor for the less participation in outdoor recreational activities, where as climatic factor was of second importance. Onsen facilities and jigoku were recorded as the most popular frequently visited facilities followed by public parks among the leisure seekers in Beppu. Observations on broad spectrum of outdoor recreation facilities suggested that concerns on natural resource bases, its

dynamics, and diversification of recreational activities would maximize community satisfaction and ensure sustainability of the recreation destinations. Further the visitor profiles and perception analysis, together with community suggestions could be used in management and strategic planning of the facilities. Apart continuous monitoring and assessing is beneficial for planning of high quality, innovative recreation opportunities and to ensure sustainability of recreational facilities to maximize the satisfaction of the recreational needs of the communities.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Leisure and recreation have become important concerns in modern day societies. It first became recognized as a cause for concern during the Great Depression of 1930s (Pigram & Jenkins, 2006). The concern continues and expanded with the changes in demographics, socio economic factors, technological advances, etc., and imposed several dimensions to the way the leisure is used, and on the extent and nature of recreational participation. The importance of outdoor recreation has been highlighted by Mercer (1980) stated that people's recreational use of leisure time will almost inevitably at some stage include out door recreation. This is currently true for 90% of those live in Western countries, and for many of these participants, it is a form of recreation and represents a very important part of their lives. The participation of outdoor recreation activities in Australia, Canada, New Zealand, United Kingdom, United States and other industrialized nations has grown rapidly since World War II (Cushman et al., 1996).

Outdoor activities are pursued for the purposes of finding peace in nature, enjoying life, and relaxing. Enhancement of inner perceptual and/or spiritual life may be experienced through outdoor activities and outdoor-related activities such as nature study, aesthetic contemplation, meditation, painting, photography, archeological or historical research, and indigenous culture are some of among the others. Outdoor recreation serves for different purposes in different capacities in the society. Interpersonal motivators such as desire to meet new people, to seek new and different experiences, as an escape from routine relationships with neighbors, home environment or for spiritual purposes(McIntosh et al., 1995) are some of them. Outdoor activities are also frequently used as a medium in education and team building. These activities are also be physically rewarding.

Japan one of the most beautiful countries in East Asia, has many scenic and picturesque spots, historical sites, cultural attractions etc. The Japanese have a keen

interest and appreciation for the beauties of nature, cultural assets and to experience the different seasons of the year. On the other hand built in facilities for leisure and outdoor recreation activities such as theme parks, sports facilities, zoological gardens exist. Such attractions serve in different capacities to fulfill the outdoor recreation demand of the Japanese communities.

In recent years outdoor recreation has been observed and analyzed from many angles. The benefits of out door recreation (Driver, 2003), outdoor recreation demand (Hanley et., al 2003), visitor perceptions, outdoor recreation in urban areas (Cooper & Collins, 1998), planning for out door recreation and tourism , recreation environment relationships and impacts of outdoor recreation (Buckley, 2000) are some of the areas that been have been studied both in qualitative and quantitative researches.

Beppu city which is located in the North East of Kyushu and in the middle of the East coast of the Oita Prefecture in Japan is a popular tourism destination designated as "World Therapeutic City" at present is in the process of city development & revitalization. As the development of broad spectrum of unique and diversified natural resource based recreational opportunities & built in facilities for outdoor recreation would contribute to enhance community welfare while achieving city development, it is important to investigate the existing provisions of outdoor recreation activities in and around Beppu city, carryout in depth studies on the performances of outdoor recreation, a sub sector of recreation and to investigate how the users perceived these facilities in order to develop the outdoor recreation sector in the city.

Hence in this study attempts were made to investigate the diversity of / outdoor recreation opportunities in Beppu city, study/ investigate the performance and visitors' perception of some of the major, most popular outdoor recreation facilities operating in Beppu for the provision of maximum level of community satisfaction through outdoor recreation.

1.2 The research problem and related questions

The main research questions was,

What is the present status and visitors' perception of outdoor recreation in Beppu city?

The sub questions included in this main goal were;

i. What are the outdoor recreational facilities operating in Beppu city?

ii. How do the outdoor recreational facilities in Beppu city perform at present?

iii. Visitor s' perceptions regarding outdoor recreation facilities in Beppu ?

iv. What are the suggestions for improving the outdoor recreation in Beppu?

1.3 Research objectives

i. To study the diversity of outdoor recreation facilities in Beppu.

ii. To investigate the performance of outdoor recreation facilities in Beppu.

iii. To investigate the visitor profiles, their perceptions regarding the outdoor recreation facilities in Beppu.

iv. To propose suggestions to improve the existing conditions of the outdoor recreation in Beppu city.

1.4 Outline of the chapters

Chapter one includes the brief description on the concepts of leisure, recreation and outdoor recreation, the significance of the study, a brief description of the study location, the research problem and related questions, research objectives, the research methodology the outline of the chapters and limitations of the study. Chapter two deals with the literature survey which focused broadly on different perspectives related to the study. Chapter three describes the detailed research methodology. Chapter four contains the results obtained for total visitor counts,

visitor profiles, perception analysis, observations for sustainability indicators and suggestions for sustainability from the three case study destinations; Lake Shidaka, Beppu Park and Myoban Complex which was the main focus of this research. Further it includes the outdoor recreation diversity in Beppu, and some general concerns of outdoor recreation such as the limitations for participating outdoor recreation activities and an account on the other preference participating recreational activities of the leisure seekers. Chapter five is a descriptive analysis for the performance and sustainability aspects based on personnel observations and secondary sources of information in seven selected outdoor recreational sites in Beppu city. Chapter six is the discussion of the findings and chapter seven includes the conclusions and the recommendations of the study.

CHAPTER 2

REVIEW OF LITERATURE

2.1 The definitions and significance of leisure, recreation and outdoor recreation

There are many definitions or conceptualizations of leisure (Kando, 1975; De Grazia, 1962; Godbey & Parker, 1976; Patmore, 1983; Lynch & Veal, 1996). Freedom is generally considered the key element of leisure. Leisure can be experienced within the context of primary role obligations where leisure and work is indistinguishable (Pigram & Jenkins, 2006). The pursuit of leisure can be influenced significantly by personal associations, values and choices (Pigram & Jenkins, 2006). The work can acquire some characteristics of leisure and much of leisure may take a form which is not the preferred choice of an individual. Leisure often tends to overlap with other uses of time (Fig.2.1). Health benefits of leisure time activities, and affords on physiological strength and refreshment have been described by Haase, Steptoe, Sallis and Wardle (2004) and Perez de Cuellar (1987). The three main commonly noted aspects of defining leisure in the literature are the, leisure equates with the enjoyment and satisfaction derived from free time activities, "represents a spiritual condition or state of mind with emphasis on self expression and subjectively perceived freedom" (Neulinger, 1982) and leisure in one or more of the above contexts, may be associated with activity. Pigram and Jenkins (2006) said that leisure has become increasingly co modified and requires that people have money to purchase 'time', recreational access and supporting services.

Dower (1965) described leisure phenomenon as a "forth wave", comparable with the advent of industrialization, the railway age, and urban sprawl. As per Veal (1987) growth in participation in all leisure activities since the Second Word War has been dramatic and the leisure has become a highly significant element of people's lives and of the economics of advanced industrialized nations. The Charter for leisure drawn up by the International organization World Leisure in 1970 and revised in 2000 declares leisure to be a right.

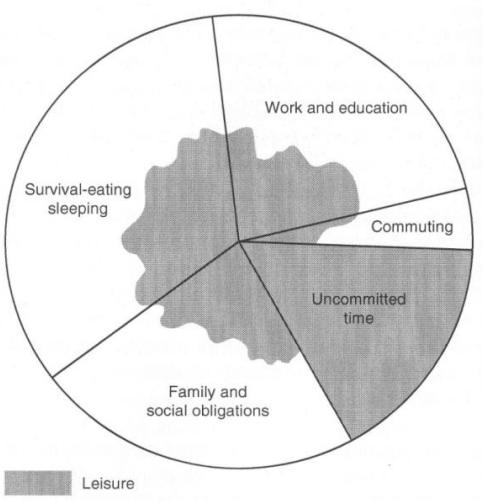


Figure 2.1. The Diffusion of leisure time

Source: Department of Environment, Housing, & Community Development (1977)

Recreation is an activity voluntarily undertaken, primarily for pleasure and satisfaction, during leisure time, but it can also be seen as a social institution, socially organized for social purposes (Cushman & Laidler, 1990). It is the expenditure of time in a manner designed for therapeutic refreshment of one's body or mind, recreation is active for the participant but in a refreshing and diverting manner. The definition normally requires that no obligation, compulsion or economic incentive be attached to the activity (Pigram & Jenkins, 2006).

As confusion arises over the discrimination use of the terms, leisure and recreation Kaplan (1975) stated that it would seem to be more useful to identify leisure as a process and recreation as an experience (Driver and Tocher, 1974). London et al., (1977) said that it is goal oriented with participation expected to yield satisfactions and therefore physically and emotionally rewarding. As in leisure the distinguishing characteristic is not the activity it self, but the attitude within which it is undertaken. Recreation too is personal and subjective.

Notwithstanding individual differences, the extent and nature of leisure and recreational activities people engage in are related to their position in the socio economic stratification of society and to the class structure socio cultural factors (Pigram & Jenkins, 2006). The arrival of several leisure goods and the improved housing conditions made the home a centre of leisure activities in the 2nd half of the

20th centaury (Cushman, Veal & Zuzanek, 1996). On the other hand the technological developments have contributed in seeking and engaging outdoor recreational activities.

The benefits of recreation are diverse. The benefits for character development (Haase et al., 2004), economic impact and growth environmental stewardship, in-creased environmental knowledge, biological diversity, respect for other cultures and times of history, and personal happiness have been highlighted. Some of the recreational benefits have been summarized in table 2.1.

The "leisure explosion" has been paralleled by a striking upsurge in all levels of recreation activities and the growth in participation in outdoor creation activities, as well (Pigram & Jenkins, 2006). A number of interrelated events and social and political developments, arising from global, regional, and local forces, have led to the growth and increased diversity in outdoor recreation participation and tourist travel and to the establishment of public and private recreation organizations and programs (Pigram & Jenkins, 2006).

Outdoor recreation participation will usually require the physical removal of the participant from home or work place in order to engage in an activity that is desired. Thus an additional cost and effort, time and or money is a part of the decision making in participation (Williams 1995). Outdoor recreation brings joy and pleasure to many people, with the provision of appropriate recreational opportunities' critical to the satisfaction of an individual's need for cognitive and aesthetic stimulation, one of six needs identified by Mashlow as basic to human wellbeing (Cooper, Fletcher, Gilbert & Wanhill, 2008).

On the other hand outdoor recreation overlaps with tourism in the distinctive characteristics and behavior associated with each. Both tourism and outdoor recreation activity involve travel and interaction with other people, and with environment in its widest meaning (Pigram & Jenkins, 2006). Some observers assign an emphasis on economic aspects and profit making to tourism, and outdoor recreation primarily with non commercial objectives (Gunn, 1979) and some others make fundamental distinction between tourism and recreational travel (Britton, 1979, Boniface & Cooper, 1987).

Recreation resources include natural attributes of the environment, as well as the facilities and attractions such as sporting complexes and theme parks. This continuum is implicit in Kreutzwiser's (1989) definition of a recreation resource ".. as an element of a natural or man- modified environment which provides and opportunity to satisfy recreational wants". Different types of outdoor recreation exist. However most of the common examples of outdoor recreation exist as a compatible partner with primary role of the resources or as multiple uses of resource bases.

On the other hand significant part of the recreation resource base comprises of the components of built environment, such as what Ibrahim and Cordes (1993) call private recreation resources which include private residences, clubs and organizations of different kinds, shopping malls and industrial sites. In addition scenic roads, walking tracks and trails of various kinds, plazas, school grounds and different types of green spaces represent important resources for popular forms of outdoor recreation that offer recreational opportunities.

2.2 The relationships of leisure, recreation & tourism

Leisure, recreation and tourism are widely recognized as important elements in people's lives (Mercer, 1980; Patmore, 1983; Lynch & Veal, 1996). They are vital social issues (Owen, 1984) and rewarding forms of human experience, constituting a major aspect of economic development and government responsibility (Kraus, 2001). Pigram & Jenkins (2006) considered tourism essentially within the recreational framework. Fig. 2.2 presents the intersecting nature of the three spheres of leisure, recreation and tourism. Pigram and Jenkins (2006) further say that attractions, facilities and services developed for tourism in industrialized societies, are often utilized by local residents and will impact upon local resident perceptions of attitudes to a range of recreational facilities and services and indeed tourist activities.

Table 2.1. Recreation benefits

Individual or Personal	Community	Economic Benefits	Environmental Benefits
physical exercise	sense of place	support of local merchants	increased knowledge of resources
family togetherness	improved work performance	economic stimulation	increased respect for environment
self confidence	community pride and spirit	more money from outside the area	increased stewardship/involvement
skill development	community attraction/appeal	increased property values	increased collaboration
reflection/ contemplation	youth development	increased tax revenue increased political/social support	Increased conservation of nature
increased wellness happiness	increased quality of life	increased investor appeal	
increased quality of life			

Source**:** Aukerman, Haas, Lovejoy & Welch (2004)

2.3 Recreation Opportunity Spectrum (ROS) and Recreation Opportunity Process (ROP)

Clark & Stankey (1979) defined ROS as a combination of physical, biological, social, and managerial conditions that give value to a place. Thus an opportunity includes qualities provided by nature (vegetation, landscape, topography, scenery), qualities associated with recreational use (levels and types of use), and conditions provided by management (developments, roads, regulations). He further states that by combining variations of these qualities and conditions, management can provide a variety of opportunities for recreationists.

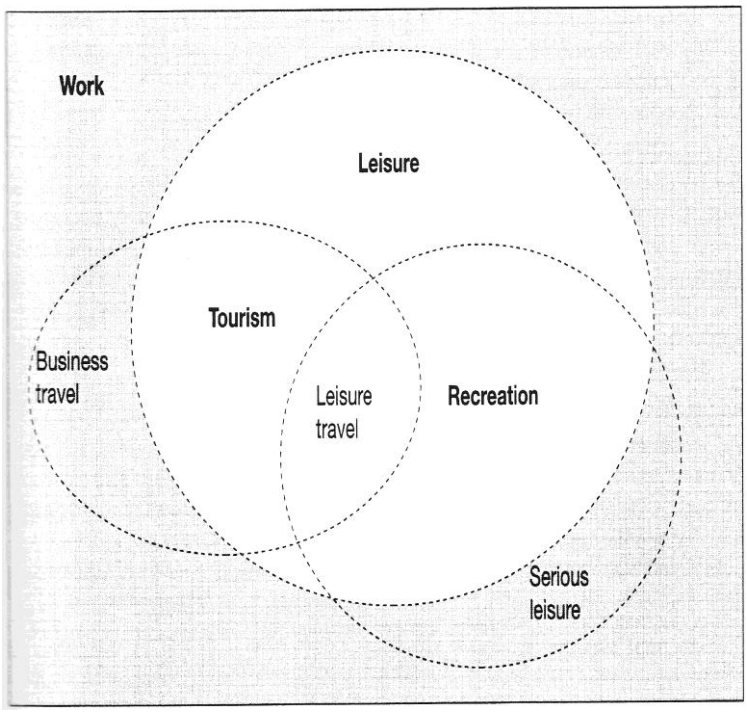


Figure 2.2. The relationships of leisure, recreation and tourism

Source: Hall and Page (1999)

Defining recreation opportunities is used as a tool to help recreation managers to create and maintain the appropriate recreation experiences that suit various types of resource bases and recreational demand. Clark & Stankey (1979) further suggest that the most important management factors defining recreation opportunity setting are the access, non recreational resource uses, on site management, and the type of social interactions. The ROS continuum characterizes recreation opportunities in terms of setting, activity, and experience (Fig.2.3). Hence ROS is an application of behavior setting analysis from environmental psychology (Ittelson & O'Hanlon, 1976). Recreation area management objectives are defined through a planning process referred to as the Recreation Opportunity Process The ROS process provides a framework for defining classes of outdoor recreation environments, activities and experience opportunities to examine the effect of manipulating environmental and situational attributes or factors to produce different recreation opportunity settings.

2.4 The Recreation Demand Spectrum

Recreation demand is a conditional statement of the participation that would result in a given time and in a given place under a specific set of conditions and assumptions about an individual and his or her social relationships and the availability of recreation resources (the traditional "price" of recreation). The demand for recreation at individual level can be treated as a consumption process that is influenced by a number of factors. Figure 2.4 explains some of the main factors affecting the consumer decision making (Cooper, 2008).

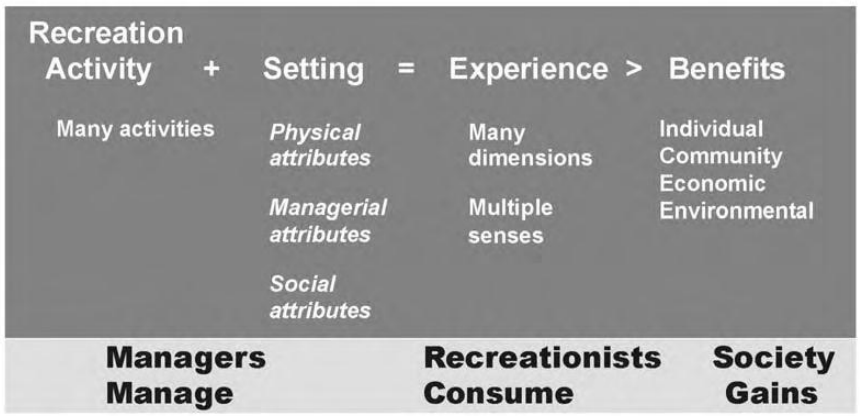


Figure 2.3 Recreation opportunity spectrum continuum

Source: Haas et al.,(2007)

2.4.1 Bradshaw Mercer typology of need

Several frameworks for assessing recreation needs exist and those lead itself to different methods of assessments. David Mercer (1973) presented a typology of need comprising four categories; felt need(those needs which individuals have and which they want satisfied, expressed need(those needs which are expressed by people), comparative need(those needs identified on the basis of comparison of individuals or groups, and normative need(those needs involving external assessments by experts, who identify a gap between what actually exists and what is desirable.

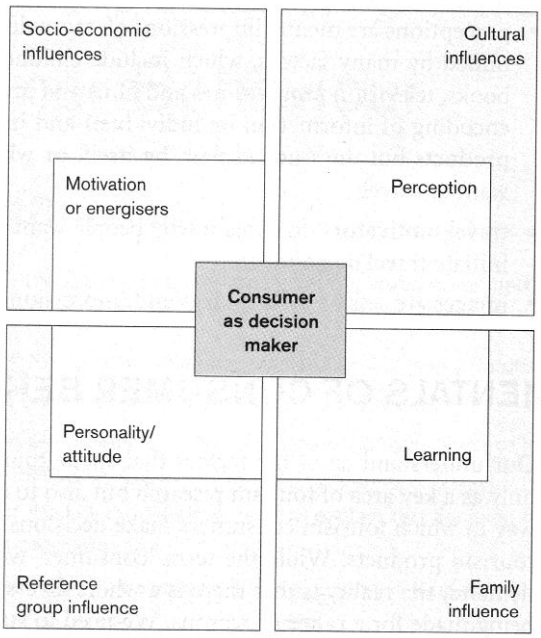


Figure. 2.4. Consumer decision making process

Source: Cooper (2008)

2.4.2 Maslow's Hierarchy model

The theory of motivation proposed by Maslow (1970) (Fig. 2.5) describes that human needs are arranged in a hierarchy. As needs lower down the hierarchy is satisfied, theory states, the higher needs become relevant and the individual is motivated to satisfy them. This is within the behaviorist tradition of psychology as apposed to the cognitive approach, which stresses the concepts of irrationality and unpredictability of behavior. The hierarchy has often been used to argue that leisure and tourism are capable of satisfying a wide range of needs (Kraus, 2001). Since leisure is involved at all levels in the hierarchy, the argument goes, all forms of leisure are needs, or need satisfiers, in the Maslow sense. Other than these approaches, motivation has been described by several other authors as well (McIntosh, Goeldner and Ritchie, 1995).

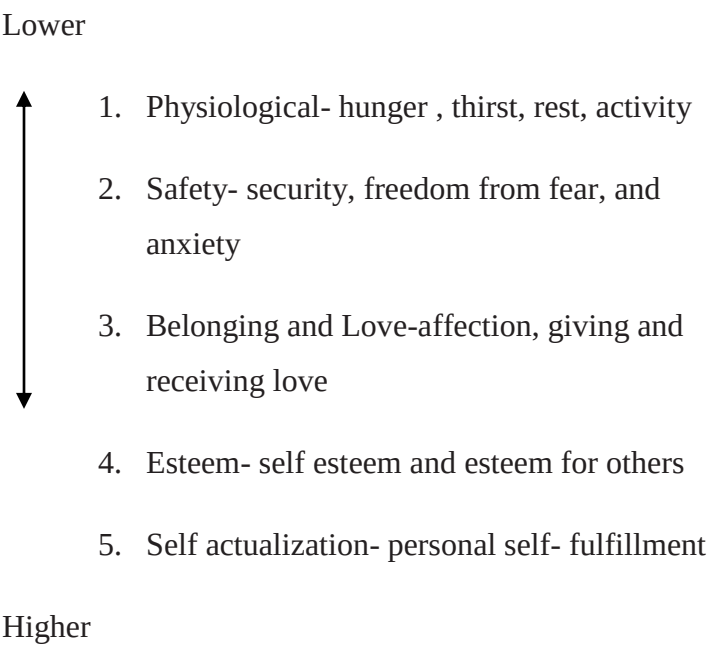


Figure. 2.5. Maslow's hierarchy of needs

Source: Cooper et al.,(2005)

2.5 Constrains in leisure participation

Jackson (1988) and Jackson & Henderson (1995) defined leisure constrain as anything that inhibits people's ability to participate in leisure activities, to take advantage of leisure services, or to achieve desired level of satisfaction.

The broader issues of use and under use of urban parks were first highlighted by Gold in 1972. Gold concluded that the major constraints could be grouped into 3 categories; behavioral, environmental and institutional. He stated that not all the inhibiting factors are easily countered. Convenience of access, site characteristics, location, status of infrastructure facilities, safety considerations and management and maintenance are some of the factors that could be manipulated. Hence Gold's comments support that non planned designation of open space thus remain empty and ignored. Since early 1980s, the researches related to leisure constrains have proliferated. Patmore (1983) also grouped into different categories of the patterns of use and non use of recreation facilities. As per Patmore 4 types of

barriers such as physical, personal limitations, the nature of the intervening space, financial barriers have been identified. Such concerns would lead to take some management decisions on admission charges, assigning or improving transport links, provision of adequate infrastructure etc towards the success of the destinations. Godbey's model (1985) also summarizes the reasons for not participating in a specific recreational activity. Fig. shows 2.6 shows Godbey (1985) model on non participation in leisure activities. One of another most notable early models was forwarded by Crawford and Godbey(1987), where they mentioned 3 main types of constrains, the intrapersonal, interpersonal and structural constrains. These were integrated in to a hierarchical model by Crawford, Jakson and Godbey (1991). Apart Ravenscroft and Curry(2004) and Jackson, Crawford and Godbey (1993) described that some constrains such as time constantly arise and embodied as barriers to person's pattern of recreational participation. However, Pigram and Jenkins (2006) summarized that the main stemming factors for any type of leisure constrain are the biological, physiological, sociological, political and economic factors.

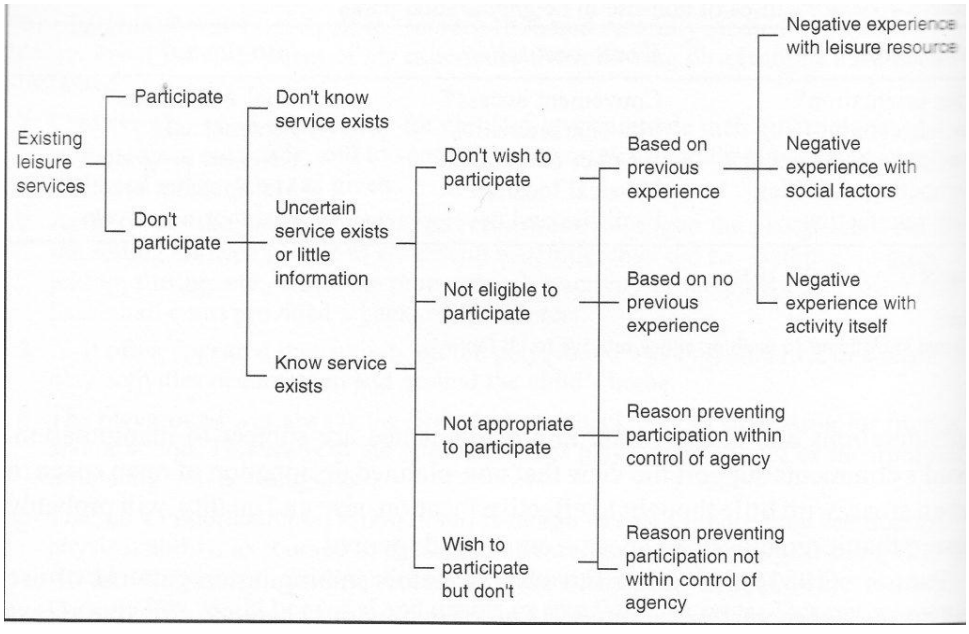


Figure 2.6. Model of non participation in leisure services

Source: Godbey(1985)

2.6 The Recreation Management Process

Recreational resource management is a process which requires strategic planning for site selection, design, visitor management, monitoring and evealuation of a particular resource (Veal, 2002). Fig. 2.7 shows the broad scope of the geographic of recreation of leisure recreation and tourism. The recreation opportunities spectrum, the recreation demand spectrum, the recreation participation as well as the confining factors in leisure and recreation together with other specific concerns such as religious beliefs, social practices etc. should be considered in the scope of recreation resources management (Fig. 2.8) or in devising a recreation management system.

As outdoor recreation is a subsectior of the whole recreation framework, various tyes of recraetion management frameworks, together with recreation monitoring and evaluation schemes described in the whole recreation management process could be applicable to achive the sustainability of outdoor recreation facilities.

2.7 Recreation carrying capacity and thresholds

2.7.1 The carrying capacity

The recreation carrying capacity has described as the permissible level of recreation use, an area can sustain without an unacceptable degree of deterioration of its character and quality of its resource bases or of the recreation experience (Countryside Commission, 1970). Further the Commission has identified 4 separate types of recreation carrying capacities; the physical carrying capacity, the economic capacity, ecological capacity, and the social carrying capacity. The determinants and influences of carrying capacity are shown in Fig. 2.9.

Physical carrying capacity; describes the maximum number of people or equipment which can be accommodated or handled comfortably and safely by a site. Economic carrying capacity / economic compatibility; is related to multiple use of resources where outdoor recreation is coupled with some other enterprise, getting the right mix of resource uses so that the non recreational activity becomes economically acceptable from the management point of view. Recreational carrying capacity

concerned with the maximum level of recreational use, in terms of numbers and activities that can be accommodated by an area.

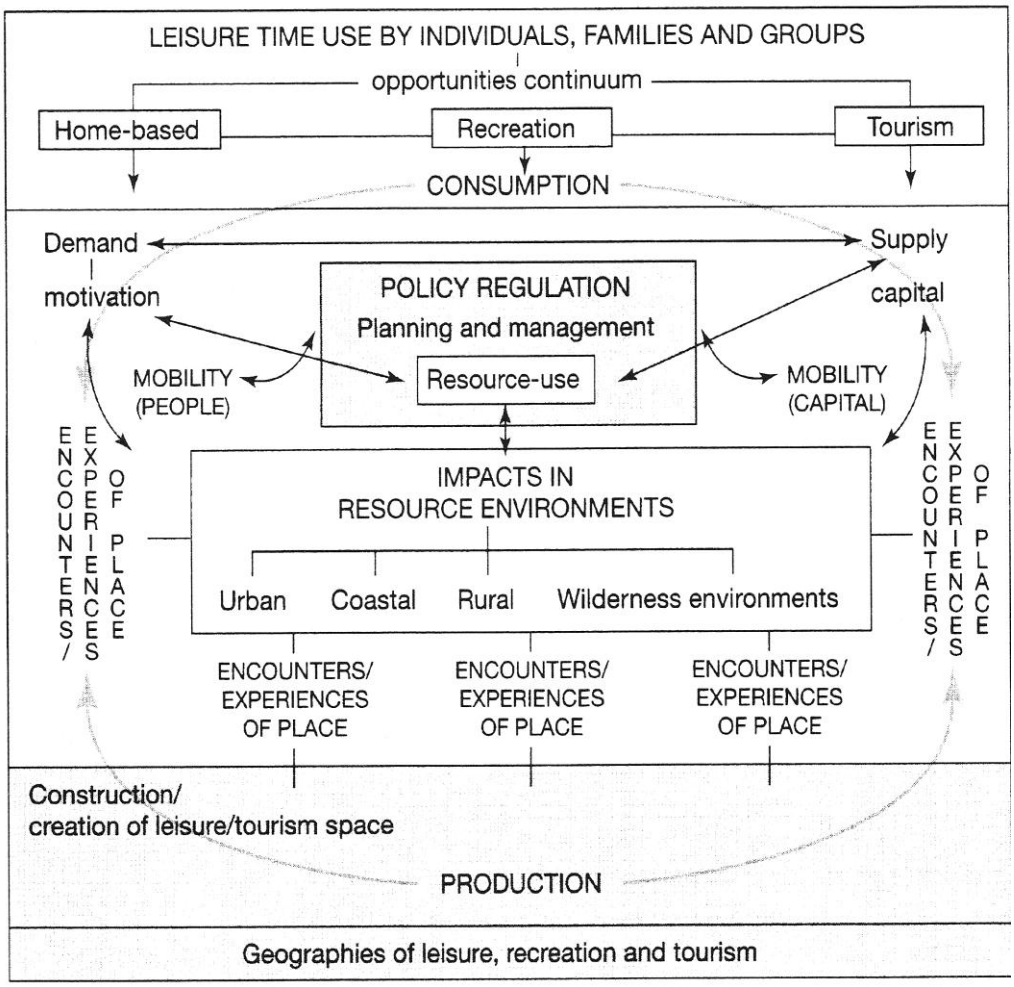


Figure 2.7. Geographies of leisure, recreation and tourism

Source: Hall & Page (2006)

2.7.2 The Limits of Acceptable Change

The planning framework based on Limits of Acceptable Change (LAC), is essentially a reformulation of the recreation carrying capacity to recreation management. This emphasizes on the ecological and social attributes sought in an area, rather than on how much use the area can tolerate. The LAC concept was introduced by Stankey, McCool & Strokes (1984) and reviewed in McArthur (2000) and Eagles & McCool (2002). Elements of LAC found their way into the planning

in wilderness areas in the early 1980s (Eagles & Mc Cool, 2002), first tested in Bob Marshall Wilderness complex in Montana around 1985 (Stankey et al 1984; USDA Forest Service, 1985). By applying the limits of acceptable change framework, it is technically possible to establish a rational basis for management intervention and to monitor and set standards for acceptable levels of impact (Pigram & Jenkins, 2006).

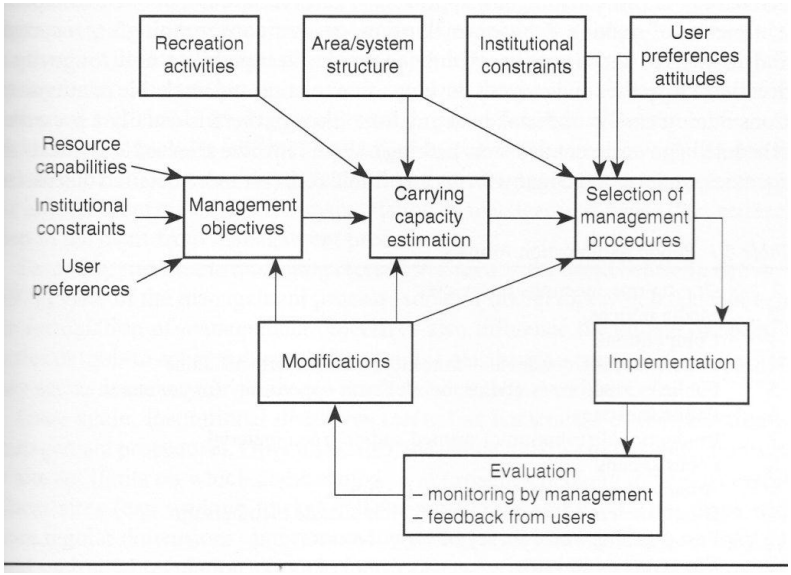


Figure. 2.8. The recreation management process

(Source: Adopted from Brown, 1977)

The visitor management models such as visitor activity management process (VAMP), visitor impact management process (VIM) which has resulted from a study by the US National Park and Conservation Association in 1990, visitor experience and resource protection (VERP) applied in about 1993 by United States National Parks services, could be used for monitoring and evaluation, setting clear objectives and the establishment of indicators and standards. These techniques are not mutually exclusive but can be integrated to identify, develop, implement monitor and evaluate strategies for visitor management and are required in planning and management processes. To adopt these frameworks it is suggested that a strategic management approach is needed.

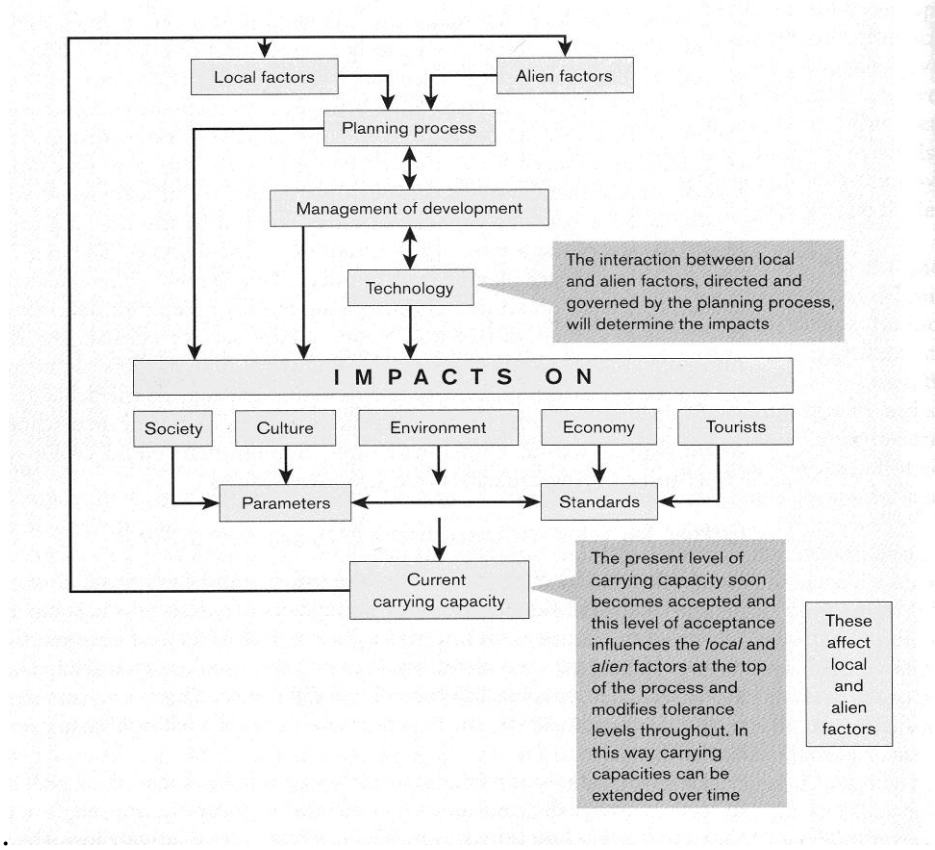


Figure 2.9. The determinants and influences of carrying capacity

Source: Cooper et al.,(2008)

2.8 Considerations on sustainability

2.8.1 Concept on sustainability

The report on "Our Common Future" by the World commission on Environment and Development(Brutland Commission, 1987) defined sustainable development as "the development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs" and it went on to identify some basic principles of sustainability. Following the United Nations Conference on Environment and Development, or the Earth Summit, held in Rio de Janeiro in 1992,

too, confirmed that sustainable development should be attained worldwide. Sustainability principles refer to the three bottom line approaches of environmental, economic and socio cultural sustainability aspects of any development and a balance between these three dimensions to guarantee A long term sustainability (Fig. 2.10).

2.8.2 Indicators of sustainability

Indicators are measures of performance. They are helpful in measuring existence or severity of current issues, signals of upcoming situations or problems, measures of risk and potential for action and means to identify and measure the results of human actions (WTO, 2004). It further says that the development and use of indicators is a fundamental part of overall destination planning and management, and an integral element in efforts to promote sustainable development of the facility. It is a catalyst for a more systematic planning or management process. Indicators are used to determine the progress towards sustainability goals and has the ability to summarize the enormous complexity of dynamic environment, visualize the phenomena and highlight the trends (Singh, Murta, Gupta & Dikshit, 2009) to act upon.

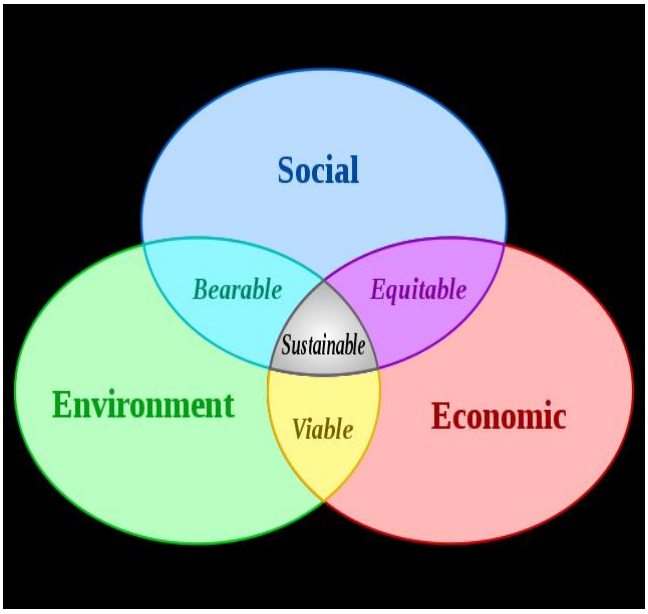


Figure 2.10. The three bottom-line approaches in sustainability

Source: Adams, W.M. (2006)

Some of the benefits from good indicators (WTO, 2004**);**

Lower the risks/costs and enable better decision making.
Facilitate identification of emerging issues for prevention of such.
Identification of impacts for corrective actions.
Performance measurement of the implementation plans and management activities.
Help in evaluating progress within the sustainable development process.
Reduce the risk of planning mistakes by identifying limits and opportunities.
Ensure greater accountability and communicate credible information to the general public and other stakeholders.
Constant monitoring can lead to continuous improvement- building solutions into management.

Sustainability indicators for a destination are often based on data collected at more specific level from key use sites, specific visitor attractions, and individual establishments. The indicators can be developed at national level, regional level or as site specific indicators (WTO, 2004). It also describes that destination level indicators are essential inputs for regional planning processes. These destination level indicators support the development of indicators at the national level and indicators generated at different scales can contribute to comparative analysis or in bench marking processes. Various international initiatives provide the rationale for indicators of sustainable development also suggest particular measures which may be of useful at many scales (Fig. 2.11).

Different categories of both qualitative and quantitative sustainability indicators can be used as an efficient and effective management and planning tools and are valuable in achieving sustainable development. Quantitative measurements are comparable numbers or measurements can be obtained over time. Different types of qualitative measurements such as category indices, normative indicators (existence of certain elements of destination management (development plans, existence of cleaning programs, zoning etc), nominal indicators (yes no indicators which are in essence labels) , opinion based indicators (level of visitor satisfaction) have been described in WTO, 2004.

Apart the early warning indicators (eg. decline in numbers of visitors who intend to return), indicators of stresses on the system, measuring the current state of the facility (eg. occupancy rate, tourist satisfaction), measures of impact of development of the facility on the biophysical and socio economic environments, measure for management efforts(eg. clean up coats), measures of management effect , and various other environment indicators, recreation indicators, economic indicators, public safety indicators, resource use indicators, sustainable community indicators serve in the capacity of good indicators (Sustainable Community Indicators Trainer's Workshop,1988) in assessing the performance of destination and its sustainability.

2. 8.2.1 Environmental Indicators (EI)

The environment indicators provide insight into the state and dynamics of environment, include physical, biological and chemical indicators(Smeets & Weterings, 1996) and generally comprise of environmental pressures, environmental conditions, society's responses (OECD, 1993). A conceptual framework for selecting environmental indicator sets has been discussed by Niemeijer & Groot(2008) has discussed the lessons for environmental indicator work as a basis for policy making. Four important issues; the data availability; selecting of ecosystem specificity of indicators; spatial and conceptual aggregation of indicators and choosing baseline or reference values for indicators have been mentioned.

2.8.2.2 Social Indicators

The social indicators and indices assist in achieving the social goals and objectives and aspirations.

The more abstract goals such as quality of life, public safety which assure social accountability are directly related to the provision of recreation facilities are important in describing social sustainability. The number of people using the recreation facility, the perception of the community towards the facility, the programs targeted at the community are some of the social indicators that would be beneficial.

Box 1.8 Global initiatives:

There are various international initiatives that provide the rationale for indicators of sustainable development and also suggest particular measures which may be of use at many scales. These include:

- *The Agenda 21, defined at the Rio Earth Summit,* in Chapter 40 defines the need for appropriate information that supports decision-making, and suggests the elaboration of indicators of sustainable development;

  http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter40.htm

- *The Agenda 21 for Tourism* (WTO, WTTC, EC, 1995), presents indicators as one of the priority action areas, and a principal tool for monitoring. http://www.world-tourism.org/sustainable;

- *The UN Commission on Sustainable Development* has developed a Theme Indicator Framework, which address overall sustainability issues, with specific subsets that may be directly applicable to tourism destinations or to key assets. It also defined guidelines for developing a national indicator programmes;

  http://www.un.org/esa/sustdev/natlinfo/indicators/isd.htm

- *The Global Reporting Initiative (GRI)* attempts to set world standards on environmental reporting for public and private organizations. http://www.globalreporting.org/;

- Based on GRI, the *Tour Operators Initiative* has elaborated guidelines for sustainability reporting through performance indicators for tour operators. http://www.toinitiative.org/.

Figure 2.11. Global initiatives that provide the rationale for developing indictors of sustainability

Source: WTO, 2004

The importance of identification of relevant social indicators to monitor aspects of human use and its impacts, developing social monitoring programs, obtaining perceptions, impacts , user group profiles, users understanding levels have been discussed by Moscardo and Ormsby (2004).

2. 8.2.3 Economic Indicators

In order to observe the economic viability/ sustainability of a destination the management expenses, the operational costs, the maintenance expenses, income generation opportunities etc. could be used as an economic indicator s(WTO, 2004).

2. 8.2.4 Socio ecological indicators

The fact that unsustainable use of resources causes environmental effects has been described and the use of socio ecological indicators for sustainability to **s**erve as a tool in planning / decision making at various levels in the society has been described by Muller (2005) .

Indicators were developed according to 4 principles of sustainability which focuses on physical approaches to indicate the sustainability. Socio ecological indicators for sustainability have divided into 3 (societal activity indicators; use of extracted material, production of toxic chemicals, environmental pressure indicators; emission rates, environmental quality indicators; concentration of heavy metals in soil (Azar, Holmberg & Lindgren, 1996).

2.8.3 Indices of sustainability

Indices measure the aggregate performance of the sustainability.

2.8.3.1 Environmental Performance Index, 2008.

Various sustainability indices applied in policy practice have been described in Environmental Performance Index (EPI), 2006/2008. It uses outcome-oriented indicators, then working as a benchmark index that can more easily be used by policy makers, environmental scientists, advocates ect

- The importance of selecting & negotiating indicators by communities of interest.
- Compile information related to sustainability indices formulation strategy, scaling, normalization, weighing and aggregation methodology and
- an integral approach of environmental, economic and social aspects in developing sustainability indexes have also been discussed.

2.8.3.2 Environmental Sustainability Index

Environmental Sustainability Index (ESI), is a composite index tracking 21 elements of environmental sustainability cover natural resource endowments, past /present

pollution levels, environmental management efforts, contributions to protection of global commons, a society's capacity to improve its environmental performance over time etc.(Environmental Performance Index, 2008)

2.9 The importance of perception studies and participation in outdoor recreation

One of the first comprehensive attempts to concern for urban recreational opportunities in the US was the National Urban Recreation Study, in 1978 by the Heritage Conservation and Recreation Service. The objectives were to examine perception, needs and the opportunities of or for recreation users, administrators in urban areas across the country, to identify the major problems of recreation and plan space providers in meeting the needs, to explore the possible solutions to problems, identify a variety of open space areas with potential for protection, to define a range of options for decision makers or facilitators of recreation

The parks and recreation development plan(PORS consulting, 2009) for the city of Bartlesville positions park and recreation as contributing significantly to the overall quality of life and life long recreation opportunities and discusses the involvement of residents and other major stakeholders , consultants , recreation service providers how their perceptions could be obtained and incorporated to develop comprehensive plans. Such good examples could be considered with Beppu city's park development plans.

2.10 Leisure and recreation in Japanese society

2.10.1 The history and present status of leisure and recreation in Japan

Japanese was once known as workaholics" or "economic animals" in the periods of high economic growth which began in the late 1950s (Nishiyama, 1996; Munehiko, 2005). The Japanease term "karoshi" that has significant translated as death from over work stress that can cause health problems, and eventually destruct the lives has widely been discussed throughout the media especially since 1995. The survey of time use and leisure activities (The Ministry of Internal Affairs and Communications (MIAC), 2001) showed how the Japanease use their time.

Organization for Economic Co-operation and Development **(**OECD), 2004, categorized Japan as a country with high per capita hours of work (Fig. 2.12) . As Japanese society matures, and with the cultural, economic and political influence the Japanese life styles and attitudes toward work and recreation patterns have changed and the modern leisure patterns have heavily been influenced by Western cultures in contrast to the male dominated passive oriented (except Samurai culture) patterns of the past(Kuroda, 2010) . Although hard work is still a part of the work ethic, Japanese pay much concern on leisure, recreation and family at present. However the recreation is very personal and highly influenced by cultural determinants. Many Japanese still prefer passive amusements and entertainments as opposed to any type of active participation (Chino & Len, 1982).

Japanese vacation periods are shorter than that of Western countries. However recognizing this situation, the Japanese government has begun promoting five day work week, full use of paid annual vacation, long weekends and a shortening of working hours (Nishiyama, 1996). The New Year's "golden week" (at the end of April and beginning of May) , and the Buddhist Bon Festival in August are some of the long holiday periods in Japan(Yagasaki, 2000).

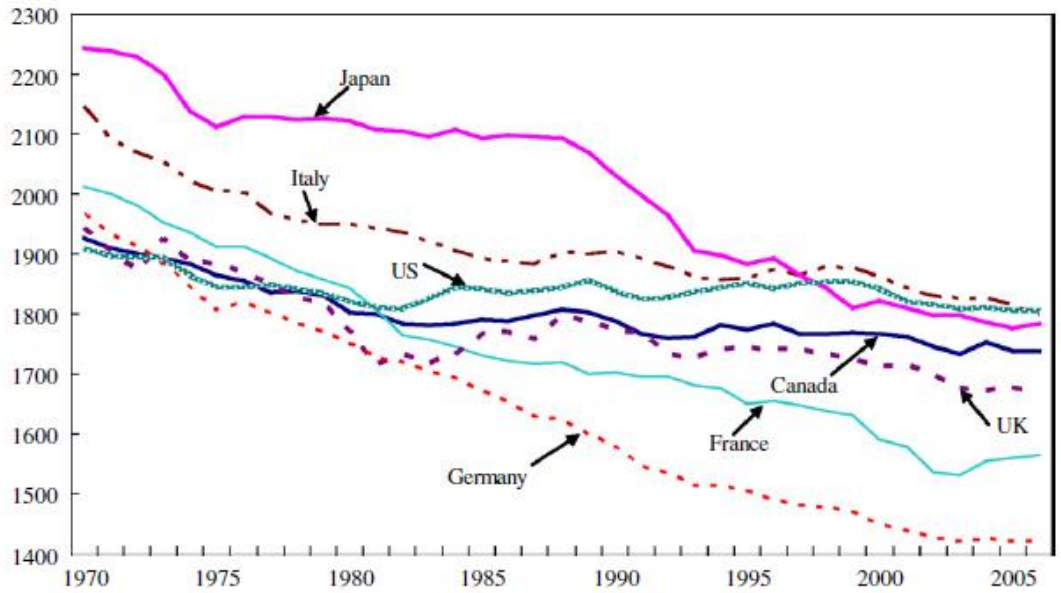


Figure 2.12. Annual hours worked per person in total employment

Source: OECD labor statistics (2004)

2.10.2 Programmes and infrastructure for recreation and local tourism

2.10.2.1 The National Railway and Japan Railway

The national railway of Japan built an effective transportation system for the Olympics and the Osaka Expo in 1970 and as soon as Osaka Expo ended, the National Railway introduced "Discover Japan Campaign" and it proved to be a success in increasing domestic tourism (Munehiko, 2005).

Japan's network of railways, the JR was established when the Japanease national railway was privatized in 1987 and the group is made of 6 passenger railway companies, a freight railway company, and several other affiliated companies(Munehiko, 2005). Munehiko(2005) further says in 1998 the JR passenger rail system operate 74% of the total, includes intercity truck lines, urban feeder services, and a large number of rural lines. JR also operates Japanese fastest passenger trains on the Sinkansen (bullet train) lines.

2.10.2.2 The programs for promoting local and international tourism

The "Nihon Retto Kaizouron" (reconstruction theory of Japan islands) in 1972 has given a chance for rural areas to construct highways and resort facilities, although these projects said to be collapsed due to oil shock in 1973(Munehiko, 2005).

The bubble economy of late 1980 to late 1990s, because of the Resort Law in 1987, the gorgeous resorts were constructed all over Japan. However these facilities were expensive and were not competitive internationally (Tokuhisa, 2002). It has encouraged the Japanese investors to focus on over seas resorts as well. After the Plaza agreement of 1985, the strong Yen stimulate the Japanese people to travel abroad and Japanese investors also developed resort complexes outside Japan, but ultimately after the collapse of the bubble economy, the situation has changed. In early Japan 2003, "Yokoso" (Visit Japan Program), and Welcome Plan in 1996 launched by the Japanese government was intended to increase the number of visitors to Japan. The percentage of Japanese people travelling abroad is still lower than that of other industrialized countries (Munehiko, 2005) The Ten Million Program in 1987 encouraged Japanese people to travel abroad. Japan National

Tourism Agency (JNTO), established in 1964, a Government Tourism Agency formed to promote inbound tourism promotion joined in this effort and advertised overseas destinations for Japanese tourist to travel abroad easily (Shindo, 1999).

2.10.3 Leisure and recreation activities in Japanese society

Although Japan is a small island the differences in climate is remarkable from North to South. Geographically Japan has a mountain range as a backbone in the center and creates differences in climate between East and West parts of the island. Because of these diversities in climatic conditions, various scenic spots can be found all around Japan. From early childhood, Japanese people have learned to appreciate the beautiful nature and scenery (*kankoo*), in their country through frequent family trips, school excursions, and company recreation trips.

In Japan there are many national parks, quasi national parks, nature reserves, other conservation areas, ancient shrines, Buddhist temples , castles historic buildings, cultural monuments, architectural marvels and historical sites (Berger 2010; Munehiko, 2005). Such nature resources, and cultural properties have been declared as prefectural or national assets and some have been designated as global treasures and world heritage sites/ properties.

On the other hand since 1980s, amusement and theme parks have been built in various parts of Japan and attract many people (Yagasaki, 2000). Japanese visitors interested in visiting zoos, aquaria, and botanical gardens too. Japanese are generally curious and inquisitive people and have been interested in learning about regional ethnic cultures; they admire music and symphony orchestra, operas as well. The best known and most loved by Japanese are the traditional performances of “Kabuki” and “Bunraku” Puppet performances. Traditional cultural pursuits such as “sado” (Japanese tea ceremony) and “ikebana” (flower arrangement) embody spiritual ways seeking the traditional values of “wabi” (elegant stillness) and “sabi” (antiquated elegance with calm) and facilities abound which offer hands-on experience of such and other cultural pursuits are most famous. The cultural festivals too are a part of Japanease culture.

From ancient times Japanese have made frequent trips to hot springs, hot spring resorts because they believe that the waters contain minerals that are beneficial for health. Japanese are interested in outdoor sports and recreation too. The most popular outdoor sports activities include golf, tennis, marathons, fishing, swimming, water sports such as snorkeling, scuba diving, parasailing, yachting, and motor boating. Skiing is the most popular winter sports in Japan.Pachinko parlors are abundant all over Japan and people play for fun or for money and merchandise.

2.10.4 Institutions and existing management framework for tourism, and recreation in Japan

2.10.4.1 The institutions related to recreation and tourism

Ministry of Tourism, Land Infrastructure and Transport

The Ministry was established in January 2001, by integrating 4 government agencies. It govern current national tourism policies under the basic Law on Tourism and has set up 5 policy goals and carries out policy measures under the transparent division of rules between the Ministry, the private sector and the local governments. The goal 1 which says to support joyful life and goal 4 which targeted on preserving and creating a beautiful and benign environment are directly related to leisure and recreation and enhancing local tourism aspects (National tourism policy review of Japan, 2002).

.Japan National Tourism Agency (JNTO)

JNTO was established by law in 1964, is a non profit statutory organization under the supervision of the Ministry of Transport to promote inbound travel to Japan and to develop their understanding of Japan history, culture, traditions, customs and people. It has maintained a very comprehensive information data bases on all these aspects in their web site- http://www.jnto.go.jp/eng/.

Ministry of Environment and involvement of other Ministries

Environment Ministry is the central governing body for the policy decisions related to all the natural resources in the country. The important recreation destinations and

resources are conserved and managed by a comprehensive legal framework. However other Ministries are becoming involved in some part of national tourism policy. Alternatively some of the Japanese current tourism policies have been successful and draw upon flourishing connections between national government and local authorities. The Ministry of Agriculture, Forestry and Fisheries supports Green Tourism Law that emphasizes and attract more visitors to rural areas from urban areas. The Ministry of Education, Culture, Sports, Science and Technology is also supporting local authorities and promotion of excursions in the school curriculum.

2.10.4.2 The existing management framework for tourism, and recreation in Japan

Japanese tourism policies changed dramatically since the end of the bubble economy in the early 1990s. Apart from the current national tourism policies under the basic Law, Tourism Nation Promotion Basic Plan is basically responsible for all tourism related activities. The Nature Conservation Law (http://www.env.go.jp/en/nature/npr/ncj/section2.html) consists basically of the environment law and of the national land use planning law are responsible for the sustainable management of the nature resources in which some are basically related with out door recreation sector. The National Parks are landscape areas of national importance, and has been designated as areas of the greatest natural scenic beauty by the Ministry of Environment under the Natural Parks Law. The law provides the legal basis for three types of natural parks, National Parks, Quasi- National Parks, Prefectural Natural Parks. Law concerning special measures for the conservation of lake water quality, the hot springs law, the natural parks law, wildlife protection and hunting management law, act on welfare and management of animals (Act No. 105 of October 1, 1973) are some of such laws that are related to outdoor recreation destinations as well. The principles of the city planning law are to maintain healthy and cultured urban life, ensure harmony with various land use activities, rational utilization of land under due regulation and the structure of city planning system include urban facilities, land use regulations, urban development projects etc.

The landscape law is the basis for the scope of the land scope administrative organization. Under this a region has been divided to different landscapes such as natural parks, areas planning for developing green areas etc.

The new urban green space law (2004) plan for greenery in municipalities, green space protection in regional districts, protection of green space by notification of actions, expansion of application and management agreed system to green space protection regimes etc thus could be related to recreational aspects.

2.11 Local tourism and recreation in Beppu city

2.11.1 The basic facts of local tourism and recreation in Beppu city

Some facts of the demographics (Table 2.2), land classification (Table 2.3), the estimated public welfare expenditures and tourism costs of the general account (Table 2.4), the change of social expenses and entertainment expenses for special position in government service by year (Table 2.5) in Beppu city have been shown.

The scenery of Beppu Hot Spring's Stream is unique. Eight typical hot spring areas called "Beppu Hatto" with its unique characteristics has declared Beppu city as an " International Hot Spring Culture and Tourism city" in 1950 (Munehiko, 2005). The Citizen's Charter established on 1st January 1968, describes the commitment of the citizens in Beppu to make their city beautiful, to cherish hot springs and to welcome the tourists. Beppu has been developing steadily so far with the maintenance of an efficient transportation network, the elevated railroad of Beppu station, extension of Route 10, opening of Trans Kyushu Road (Yamanami Highway), Oita Expressway, Usa- Beppu Road, Oita Airport road, and the International Ferry Port.

Beppu city s renowned for a total 2600 numbers of hot spring vents, which is of 10% Japan total, and place as number one in the world and by the hot spring amount number has placed as two in the world (94.84% in Japan), Beppu has ten types of eleven chemically classified types of hot spring water out in the world except the radio active spring (Taguchi,Itoi & Yusa, 1996; Summary for Beppu City, 2010). Summary for Beppu City (2010), says that there are 2511 fountainheads in the city and the output reaches 87 567l a minute as at 31st March 2009) which is the largest in Japan.

Some of the major programs that were responsible to revitalize and develop Beppu city in the recent past were the Central District Revitalization Basic Plan of Beppu that was authorized by Prime Minister in 2008, the area regenerating plan/ designated as "World Therapeutic City, Beautiful and Cheerful Beppu" in the year 2004. Designation Beppu as the "National Model City for Greening" by the Ministry of Construction in 1976, designation of Beppu Yamanami Area as the "International Tourist Model Area" in 1986, the area promotion tickets issued 1999, the establishment of Tourism Bureau in 2003, the establishment of Onsen Tourism Bureau in 2005 were some of the major events that were directly responsible to attract large number of visitors to Beppu city(Summary for Beppu City, 2010)

Beppu is involved in the "Sister City Program", the "Friendship City Program" and in the "International Exchange City Program" which enable the city to develop tourism, economy, cultural and education exchange and to promote peace, friendship, good will relationships and cooperation with a wider community in the globe. So Beppu is not an isolated city but which has a potential to develop in all means in the future.

Table 2.2. Registered population from the year 1975 to 2010 in Beppu

	1975	1980	1985	1990	1995	2000	2005	2006	2007	2008	2009	2010
male	59726	60993	60588	58967	57860	56861	56097	56064	55907	55735	55421	55167
female	70427	72646	72102	70550	69607	68334	66833	66535	66311	66020	65697	65456
total	130153	133639	132690	129517	127467	125195	122930	122599	122218	121755	121118	120623

Source: Summary Beppu City, 2010, with courtesy of Beppu city office

Table 2.3. Classification of Land in Beppu(as at 1st January, 2009 (km^2, %)

classification	field	residential area	mineral spring	marsh	forest	plain	hybrid	others
area	6.468	12.611	0.014	0.025	12.033	13.257	4.940	75.798
ratio of structure	5.17	10.08	0.01	0.02	9.62	10.59	3.95	60.57

Source: Summary Beppu City, 2010, with courtesy of Beppu city office

Table 2.4. Estimated Expenditures of General Account

Budget classification	2010(%)	2009(%)
public welfare cost	48.2	45.9
tourism cost	2.1	2.6

Source: adopted from Summary Beppu City, 2010 with courtesy of Beppu city office

Table 2.5 . Change of social expenses and entertainment expenses for special position in Government service by year

Classification	1990	1995	2002	2003	2004	2005	2006	2007	2008
Social Expenses	7762310	7861861	3078319	2144903	2179191	1705642	1392936	1463779	495443
Entertainment expenses	3059331	2026236	261071	155207	192362	151651	148451	92355	176880

Source: summary Beppu City, 2010, with courtesy of Beppu city office

2.11.2 Administrative organization for the management of the out recreational facilities in Beppu city

The Beppu City Hall Mayoral Bureau is responsible for the management of some outdoor recreational facilities operating in Beppu city. The Onsen Tourism Department, the hot springs management division and the tourism community development division are responsible for the management of government onsen facilities. The life style and environment Department, the environment division look after the waste management and other environment related matters, the urban policy division and the parks and recreation divisions are responsible for the matters in urban environment and the park maintenance in the city (Summary for Beppu city 2010).

2.11.3 Local tourism and visitor statistics in Beppu

Table 2.6 shows the Beppu visitor statistics for the year 2008 and 2009. The tourism figures show that the year 2009 the total visitor increment was 104% compared to that of 2008. The tourism dynamic directory (FY 2009) says that the declaration of

Kyushu highway free of charge was the reason for the increase number of day travelers, while the spread of new type of influenza was mentioned as the reason for the decrease numbers of stay visitors.

Table 2.6. Visitation of Beppu in 2008 and 2009

numbers of visitors	2009	2008
total	11, 999, 003	11, 518, 360
did not stay	8, 346, 658	7,779,620
stayed	3, 652, 345	2,765,950

Source: Tourism dynamic directory, FY 2009, with courtesy of Beppu city office

Table 2.6 describes the visitor percentage figures to Beppu city in the year 2008 and 2009 and from different parts of Japan (Table 2.7) as well as the international tourist numbers.

Table 2.7 Visitor statistics to Beppu city

	Hokkaido	Kanto	Chubu	Kinki	Chugoku	Shikoku	Fukuoka	Oita	Other Kyushu	Foreign
2008(%)	3.4	11.2	4.8	6.8	7.4	4.2	24.3	22.2	13.5	2.2
2009(%)	2.0	11.0	4.2	8.0	7.7	3.3	25.1	21.3	16.0	1.4

Source: Tourism dynamic directory, 2010, with courtesy of Beppu city office

The number of school children who visited Kijima Kogen, African Sarfari Park, jigoku area, Mt. Takasaki, Umitamago and Oita fragrance museum are shown in table 2.8.

On the other hand there are many historic events and infrastructure developments that were important to the development of recreation and tourism

sectors in Beppu,. Some of such basic infrastructure developments, popular events, and some special programmes held related to these sectors (see the appendix 1) have been summarized.

Table 2.8 School excursions, Beppu in year 2008 and 2009

Month	2008	2009
1	140	109
2	223	232
3	508	333
4	1691	1507
5	9474	11543
6	2947	2915
7	941	861
8	442	693
9	4043	2757
10	3100	4872
11	3731	3298
12	1368	322
total	28, 608	29442

Source: Tourism dynamic directory, FY 2009, with courtesy of Beppu city office

2.12 The main types of recreational facilities in Beppu City

The table 2.9 is a summary of the main recreational facilities operating in Beppu.

2.12.1 Resource-based facilities adopted for leisure

2.12.1.1 Public parks and beach parks

Various types of parks maintained by the city office in Beppu and their area extents have been summarized in table 2.10 and the definitions for the types of green spaces are described in table 2.11 and the distribution of public parks (appendix 2) in Beppu have been shown.

Table 2.9. Summary of the recreational facilities in Beppu city

Facilities not existing primarily for leisure	Resource-based facilities adopted for leisure	Built facilities adopted for leisure	Built facilities designated for passive leisure	Built facilities designated for active leisure
Forests & Agricultural lands	Urban/ Rural Parks	Ancient monuments	Museums	Sports stadia/ Athletic fields
Mountains/ Moorlands	Beaches, Beach parks	Traditional craft centers	Art galleries	Theme parks/ Amusement Parks
Water courses	Hot springs/ Jigoku		Libraries	Umitamago
Private dwellings & working places	Natural Lakes		Cinemas	Gymnasia
	Ropeway		Restaurants/ Spa	Wildlife Safari Park
Streets	Nature Parks		Hotels	Golf courses
	Scenic View Points		Shopping malls	Shopping malls
Temples & Shrines			Community welfare centers	

Source: Adopted from Ravenscroft, 1992

Table 2.10. Distribution of public parks network as at 2009.3.31

Population in the district		121,118		
Population in Municipal Planning District		120,608		
Population of DID		113,075		
Population in Central City		119,173		
		Type	No s	Area(ha)
city park	municipal parks within the area of city planning	central city park	18 16	6.21 4.90
		neighbor	10 7	13.40 8.26
		district park	3 1	16.6 6.38
		general parks	5 2	121.9 38.14
		sports park	1 1	44.30 12.41
		special park	1	32.10
		special	1 1	36.40 5.79
		green payment(road)	3 2	59.90 1.66
		sub total	42 30	330.81 77.54
	others	development	98	
		others	6	
		sub total	104	
	Total		134	
	area/person			6.93m^2
park for child			27	2.70 ha
total			161	86.58 ha
area/ person				7.15m^2

Source: Information sheet provided by the City Office, Beppu on request by the author

Table 2.11. Classification of city Parks

Park Category		Definition
Residential Park	Central City Park	0.25 ha average area , for residents who live within 250 m
	Neighbor Park	2 ha average area , for residents who live within 500 m
	District Park	4 ha average area , for residents who live within 1k m
	General Park	area is 10-50 ha for city size
	Sports Park	15-75 ha
Special Parks	Special Park	animal parks, historical parks
Large Parks	Regional Park	average 50 ha
	City Recreation Parks	the city planning park, area 100 ha
Buffer green areas		industrial park
City Green Areas		buffer zones
Green belts		10 – 20 m
Government operated Natural Park		more than 300 ha

Source: Information sheet provided by the City Office, Beppu on request by author

Beppu Park

In 1977 Beppu Park (Fig. 2.13) was designated as the memorial park of the 5th year of the Showa Emperor's reign, and it is the Symbolic park of Beppu. The area coverage is 27.3 ha include grass land, a bamboo plantation area, about 640, 80 – 100 years old Pine trees, other tree types such as , Camphor, Camellia, Wisteria , and 60 types of other tree species, and a total of 2900 numbers. A pond area, kids play area and a parking area for 400 cars and for 25 buses could be found.

Figure 2.13. Symbolic Beppu Park

Shoningahama Park

The park consists of a landward park area, a narrow stretch of beach area and an artificially created beach area. The park area before creation of the artificial beach area (Fig. 2.14) was 7.9 ha (Flower City, Parks Guide).

Figure 2.14. Shoningahama Park

Minamitateishi Park

The park (Fig. 2.15) has been designated as the tree planting botanical garden of the city. The area is 11.5 ha, and some gardening advices are being provided by the Bureau of Midori located within the park. The park attract more people in cherry blossom season (End of May to Early April) and in February in the Japanease plum blossoms season. Apart the park is with dense vegetation and adds greenery to the urban environment. Parking capacity is 56 cars and 5 buses. The bridge of Inachus, a pedestrian only suspension bridge is found connecting the park and the Nishibeppu National hospital.

Figure 2.15. Minamitateishi Park

Source: Flower City, Parks Guide, with courtesy of Parks & Recreation division, Beppu City office

Kannawa Jigoku Area Park

It is located in Kannaw Hell area. Contains a grass field, athletic field, parking. The large equipment placed on the athletic field is called " Oon Toride". Jungle Gym and kids play items present.

Other small local parks

The small parks scattered throughout Beppu city are serving a lot for the neighboring communities. They are maintained at high levels of cleanliness, with attractive plant species, flower beds and bushes. Pruning schedules on time have make them attractive. Provision of few kids garden play equipments, tolet facilities, seating arrangements and some are even with small temporary enclosures to place the sports items of the park users, and some even have some basic infrastructure facilities as well could be found in these. The notice boards are located in the premises and making the community aware on different local events etc.

2.12.1.2 Onsen facilities in Beppu

There are various types of active geothermal manifestations, hot springs, hot pools, mud pools, geysers and fumaroles scattered on a fan-shaped area, extending 5 km from East to West and 8 km from North to South (Taguchi et al., 1996) . Those are mainly distributed along and/or around the Asamigawa fault to the South and the Kannawa fault to the North. Beppu has eight different hot springs areas: Beppu, Kannawa, Myoban, Kankaiji, Kamegawa, Hamawaki, Horita and Shibaseki. Their chemical compositions vary from one to another (Table 2.12). The total amount of discharged hot springs water is estimated to be 50,000 ton/day indicating a huge geothermal system (Taguchi et al., 1996)**.** The temperatures of the springs range from 50^0C - 100^0C. Range is usually kept between 41^0C and 48^0C, hence the cooling or diluting the water in bath preparations is often necessary.

Beppu's *onsens* (Table.2.13) is the key factor of Beppu's tourism. But it also plays an important part in the daily lives of the city's residents. Beppu's Onsen attract lot of families and senior citizens looking for a comfortable everyday country type of lifestyle from every where. The Beppu's onsen have various visual surroundings, mineral types in water, colors and smells and accommodations enabling the users to select as per their desires.

Table 2.12 . Typical Chemical Compositions of Hot Springs in Beppu

Area Name	Kannawa Ishimatsu	Kannawa Chinoike	Myoban Yamadaya	Kamegawa Shinoyu	Old-City Kimura	Hotta Hotta	Kankaiji Jizouyu
Temp.	100	60	67.5	56.6	55.6	75.5	50
pH	7.7	2.4	1.7	8.2	7.4	6.2	6.9
Na^+	882	700	24.1	182	170	26.78	30
K^+	97.8	103	16.7	28.6	14.1	3.438	5
Mg^{2+}	1.0	17.6	10.2	6.6	33.2	12.22	12
Ca^{2+}	24.5	42.0	26.0	20.4	47.5	17.91	57
Al^{3+}	0.1	2.28	203	0.1	0.1	0.12	
Mn^{2+}	0.4	4.3	0.4			0.005	
Cl^-	1104	1003	5.7	225	107	17.88	3
SO_4^{2-}	455	570	1649	152	53.4	66.05	45
HSO_4^-			1108				
HCO_3^-	49			108	504	76.25	188
$HAsO_2$	1.63	1.3		0.7	0.21		
H_2SiO_3	506	299	411	198	252	112	126
HBO_2	39	72	49.9	15.8	4.7	22.7	

Source: Taguchi et al., 1996

Bathing has long been a national passion in Japan and the Japanese bath is more a place for , relaxation . Even if there is a bath at home, the family often goes out to soak with friends and strangers at a public bathhouse. Many Japanese believe that different minerals found in Onsen waters help to alleviate different types of medical disorders, beneficial for health and give a relaxing effect on body and mind (Funagura, 2002). Basic plan of a hot spring facility is shown in Fig. 2.16. Hot spring baths come in many varieties, indoors and outdoors, gender separated and mixed, developed and undeveloped. Ryokan is a traditional Japanese style inn with hot spring baths while others are public bath houses, "kashikiri" (private) baths, kazokuburo", and in family baths. Outdoor baths are called rotemburo Ryokan offer different baths in various natural environments, temperatures. etc. Some baths are wooden or stone tubs, others are built to resemble or are actually natural hot spring pools. Some outdoor baths are spectacularly situated in the mountains, valleys or

along rivers, lake or sea shores. Besides conventional hot water tubs, a popular feature of larger baths are so called waterfalls.

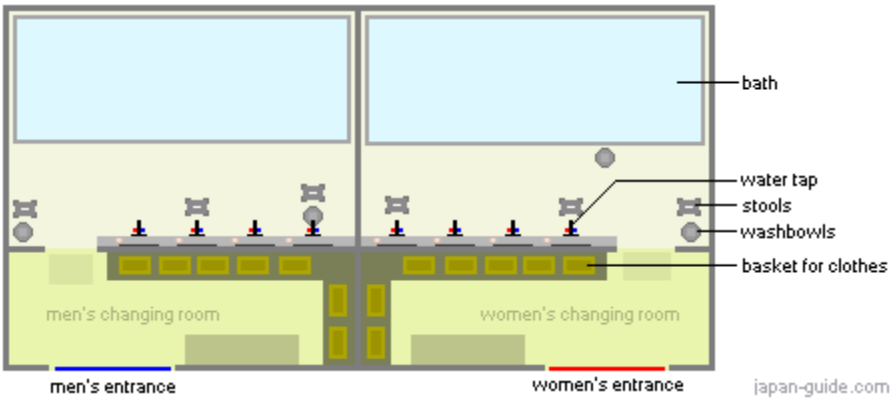


Figure 2.16. Typical layout of a small indoor hot spring bath

Source: Funagura (2002)

The hot spring resources spread throughout the city are maintained and managed by different parties. The government owned onsen facilities are managed by the Hot Springs Management Division of the Onsen Tourism Department of the Beppu city hall. Some others are privately owned onsen premises or owned by separate private business parties and are with the ryokan provide unique experiences with its natural setting and different types of activities and facilities allied to them.

Besides from conventional hot water baths, Beppu offers sand baths, where bathers are buried in naturally heated sand, steam baths (Fig. 2.17), that are heated by the steam of a hot spring and mud baths which are basically muddy hot water baths. "Ashiyu" are shallow hot spring pools for bathing just for one's feet. They are found along the streets, in many hot spring resorts, and can be used free of charge. The table 2.14 shows the number f visitors who took a a bath in the government onsen facilities from 2005 to 2008.

2.12.1.3 Jigoku facilities in Beppu

Beppu's most unusual sightseeing attractions are ten jigokus(Fig.2.18). The word "jigokus" has originated from the "burning hell" of the Buddhist sutras. The main group of eight hells are administered by the Beppu Jigoku Association.

(www.beppu-jigoku.com). Seven of the hells are located in the Kannawa district and two in the more remote Shibaseki district (Geo thermal heat center quarterly bulletin, 1996).

Table. 2.13. Different types of onsen facilities in Beppu

Name of the Onsen Facility	facilities	special features
Takegawara	2 separate baths for men & women, 2 sand baths	A woodern building of Chinease design, a spacious lobby
Utopia Hamawaki (Multipurpose Hot Spring Sanatorium)	baths(dash water, waterfall shower, buble bath, Sauna, recling, presued baths ect, exercise room	different types of baths, health advice
Kitahama hot spring(Termas)	2 regular baths, 2 open air baths, 2 pail showers, steam baths, mist sauna, high temperature baths, water fall shower, dry sauna, lakewarm bath, salt water baths	different types of baths, bath for children
Shibaseki hot spring	2 open air baths, 2 steam baths, family baths, Fureai Yasuragi room, display room	designated as " heart warming hot spring (Fureai Yasuragi" resort by the Ministry of Environment, excellent natural environment
Hamada hot spring	2 baths for men and women, lavatory for disabled	consists of handrails and wide passages for weel chairs
Horita hot spring	2 indoor and 2 open air bath made of rocks for baths for men and women, rest room	open air baths
Kannawa Mushiyu (Steam Bath)	4 foot steam baths, 2 stone huts for men and women, 2 baths for men and women, tourist centre, rest room, storage for *Acorus graminius*	

Source: Summary for Beppu city, 2010 and information provided on request, with courtesy of Beppu city office.

Table 2.14. Visitor statistics of the government onsen facilities from 2005 to 2008

	竹瓦温泉	不老泉	田の湯温泉	海門寺温泉	永石温泉	鉄輪むし湯	柴石温泉	堀田温泉	別府海浜砂湯	北浜温泉	浜田温泉	湯都ピア浜脇	浜脇温泉	合計
平成17年度	86,481	96,059	42,585	28,290	37,049	18,445	91,648	163,028	24,754	42,956	88,632	62,615	141,793	924,335
平成18年度	87,935	94,087	41,200	26,765	32,829	30,110	97,427	156,737	31,051	42,438	82,047	61,657	138,020	922,303
平成19年度	88,407	84,993	37,434	25,677	27,129	34,831	73,548	157,881	28,208	40,496	74,111	61,284	137,035	871,034
平成20年度	88,282	84,105	42,976	24,993	32,169	30,772	89,183	152,528	28,075	40,964	74,314	62,086	132,379	882,826
平成21年度	88,731	95,596	48,701	34,398	40,277	31,878	96,419	159,451	28,795	40,614	76,861	68,408	153,777	963,906

Source: Tourism Dynamic Directory FY 2009, with courtesy of Hot Spring Management Division, Onsen Tourism Department, Beppu City Hall)

Figure 2.17. The steam baths

Source: Beppu city guide 2009

Oniishibozu Jigoku

This hell is named after the mud bubbles, which emerge from boiling mud pools and look like the shaven heads of monks.

UmiJigoku

The "sea hell" features a pond of hot, blue water. It is one of the most beautiful hells. Contains white particles that reflect the color of the sky. At Umi jigoku, which is much hotter than the bathing springs, piped steam heats a large banana greenhouse alongside the pond. At another steam vent, more than 900 tons/day (238,000 gal/day) of water bubble out in a garden of a Buddhist statuary.

Oniyama Jigoku

Crocodiles / alligators are bred and kept on the grounds of the "monster mountain hell".

Shiraike Jigoku (white pond hell)

According to its name, the "white pond hell" features a pond of hot, milky white water.

Yama Jigoku

The "mountain hell" features small ponds of steaming hot water and a small zoo with small cages. The mini zoo has been constructed around the Yama jigoku, and the animals that drink and wallow in the warm water include hippopotamuses, monkeys, snakes and pelicans.

Kamado Jigoku

The "cooking pot hell" features several boiling ponds and a flashy demon statue as cook. Kamado, the red demon/ pots of murky

Kinryu Jigoku

The "golden dragon hell" features a dragon statue and a greenhouse, heated by the hot spring.

Chinoike Jigoku (Blood-pond hells)

The "blood pond hell" is the oldest natural jigoku features a pond of hot, red water is perhaps the most spectacular, due to the red precipitates. The temperature is 136.8^{o}C at the bottom (-26 m). The red precipitates are rich in heavy metals, and consist of

low cristobalite, tridymite, kaolin, hematite, and montmorillonite (Koga, 1972; Yamashita, 1977; Yoshida, et al., 1978).

Bozu jigoku

Contains boiling gray viscous mud which bubbles incessantly with a menacing sound.

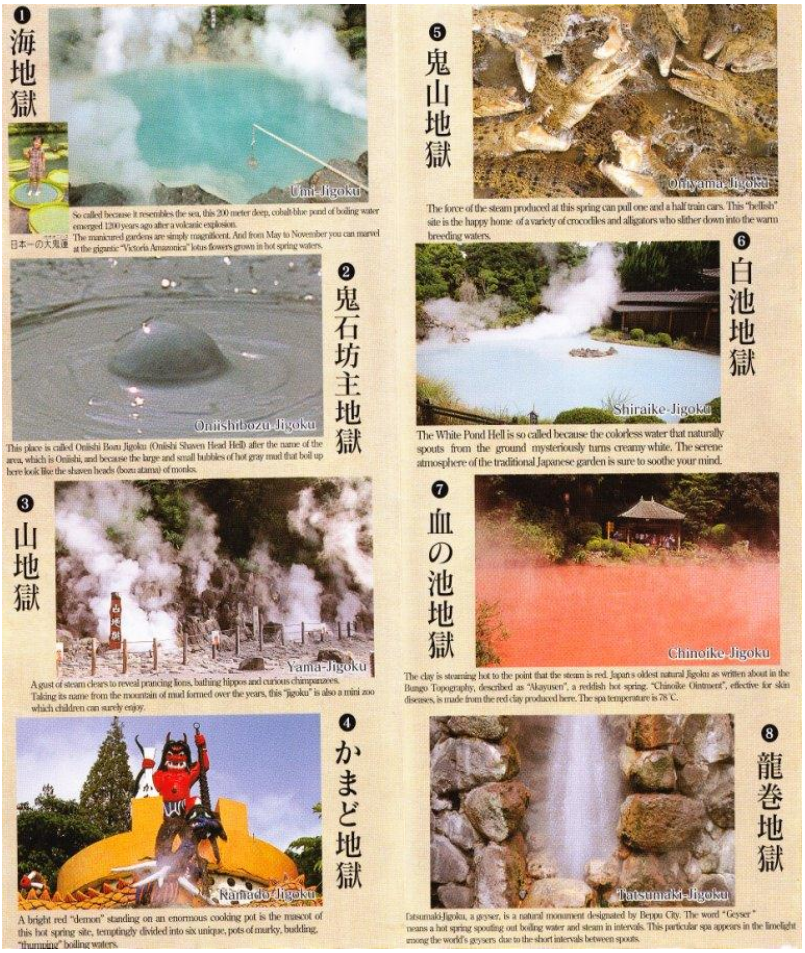


Figure 2.18. The diversity of Jigoku facilities

Source: Beppu jigoku association/ foregin tourist information office

Jigoku Mushi Kobo Kannawa

This facility is located in Kumi Furomoto, Beppu offer experiences to "Jigoku Mushihell"(the method of cooking various types of food in geothermal steam) in

steamed dishes(jigoku mushi). The facility has “jigokugama”, the pots to be placed in the steam, a dining place, information center, a cooling device monument, a

spring water drinking fountain, and an exhibition center. The pocket park “Ideyuzaka” has free foot steam bath and foot baths too.

2.12.1.4 The Natural Lakes in Beppu

Lake Shidaka

Lake Shidaka is a natural lake. The total land area of the facility is 198, 900 m^2, and the surface area of water is 88, 700m^2 and is located at 624m above the mean sea level. The diameter of the lake is around 2 km and the depth is 2 m to 5 m. The total water volume is about 25, 000 tons

The facility was opened for recreation in 1968 but the building complex of the facility was constructed in 1969. The lake is covered by surrounding natural vegetation and the adjacent forested area act as its buffer zone and hence a larger catchment area is attached to the lake. Various facilities and events conducted at the premises make it famous among the people. Has a parking facility for about 200 vehicles.

Lake Kagurame

Lake Kagurame is a natural lake (Fig. 2.19, Fig.2.20) which is famous for Iris watching in June when the lake is filled with water. But in most of the months of the year the lake is just an abandoned area (Fig.2.21) with out any eye catching scenery apart from the near by forest patch.

Figure 2.19. Spring at Lake Kagurame

Figure 2.20. Site map of Lake Kagurame

Figure. 2.21 Lake Kagurame in off season

2.12.1.5 Takasakiyama monkey park

Mt. Takasakiyama is a bell shaped mountain (Fig. 2.22) of 628 m altitude and has an area coverage of about 330 hectares. It is located in between Oita and Beppu cites in Route Number 10. This is a habitat for approximately 1200 of wild monkeys..

2.12.1.6 The Nature Walks

Recently many Japanease have begun to pay attention to nature conservation activities. On the iotherhand inorder to introduce the local area to the foreigners different types of nature walks are being organized by different parties at present. Asami Walk is conducted by Asami Community club. Asami area which is rich in cultural and historical relics and beautiful scenary ae the main target sites. Kannawa walking tour was started by NPO Kannawa Yukemuri Club. It is one of the best way to experience the Kannawa area in Beppu. The stone paved street of Kannawa which was repaired to be a new sightseeing area with many Japanease type hotels "Ryokan" are some of the attractions.

Figure 2.22. Mt. Takasaki from a distant

2.12.1. 7 The scenic view points

Jumonjibaru Plateau

This is a scenic view point (Fig.2.23) and the view of the Beppu and surrounding areas from the plateau is marvelous. This is famous among the local tourists as well.

Figure 2.23. Description board, Jumonjibaru view point

Beppu Wan Service Area

It is located in an intersection of number of highways and is specially designed resting area for the highway users. But serves considerably for the local tourists and leisure seekers too. The landscape is designed attractively and restaurants, rest areas and the scenic views from this point attract considerable number of leisure seekers to this venue. Apart Beppu Yukemuri scenic out look is also another view point.

2.12.2 Built facilities designated for active leisure

2.12.2.1 Kintetsu rope way

The rope way was opened in 1962. It is towards the climax of Mt Tsurumi of 1375m and provides a grand view of the surrounding forest area of Aso Kuju National Park and Kuju range to the visitors. This Aerial tramway has 2 track cables and 2 haulage ropes. The cable length is 1.8 km. The vertical interval of the 2 stations is 792m, and has an operational speed of 4.1 m/s. The passenger capacity per cabin is 101 personnel. The duration per trip is approximately 10 minutes **(**Kintetsu Rope Way web site, 2011)

2.12.2.2 Amusement Parks

Since 1980s, theme parks were built in different parts of Japan. The theme parks attract many tourists (Yagasaki , 2000).

Beppu Wonder Rakutenchi Nature Amusement Park

It is the closest amusement park to down town of Beppu. A cable car is available in which one can enjoy Flower Ferris Weel and the stunning view of Beppu Bay from the Rain Bow bridge. A scenic outlook and the panorama spa has been added as new attractions.

Kijima Kogen Amusement Park

Kijima Kogen is advertised as a forest amusement park. It has 4 main sections, namely thrill seeker rides, games, events and fun section, toy's kingdom pavilion, and easy going attractions section which gives different types of experiences for different categories of people (Fig. 2.24). Apart the Centleisure Kijima Kogen Hotel,

the Kogen Golf Club also are part of the theme park. Apart from the range of attractions it locates the Japan's first wooden Jupiter roller coaster.

2.12.2.3 African Safari Park

The wildlife Safari Park is located in an area of 1.15 million m^2, a total of 1400 numbers in 70 species are present in the facility. The different sections present in the site map of the facility have shown in Figure 2.25.

2.12.2.4 Aquarium Umitamago

Umitamago was established as the Marine Palace in 1964, and renovated to present status as Umitamago in 2004 approximately, 2.5 times bigger than its former size. From 2004.04.01 to 2009.05.04 about 5 million visitors have been recorded (Umitamago web site, 2010). The total area is about 14, 000m^2, and the volume of water in the tanks is 3350 tons. 500 species of animals and about 15, 000 of total number present. Over 1500 specimens of 90 species are in display in the facility. There are large 12-50 ton circulating tanks, specialized cubicle tanks, animal habitats and specially designed performance areas could be found. Animal performance shows and various other activity schedules are present in the facility.

2.12.2.5 The sports facilities

The Jissoji central park is shown in Fig. 2.26. Jissoji Soccer Field (Fig. 2.27) is about 20,000m^2 has a one natural and one artificial turf fields. It promotes sports tourism and conduct training programs too.

Noguchibaru overall athletic field

Is a comprehensive athletic field located in the middle of the city, often used for seasonal events. It consists of athletic field, football field, 2 soft ball field for night games, 2 baseball fields.

Figure 2.24. Ground layout of Kijima Kogen

Source: Kijima Kogen Park Guide Map, http://www.kijimakogen.jp

Fig. 2.25. Ground layout of African Safari, Beppu

Source: African Safari Guide Map, http://www.africansafari.co.jp

Figure. 2.26. Jisoji central park

Figure. 2.27. Jissoji soccer field

Source: Beppu Enjoy Guide, 2010

Beppu citizens' Baseball stadium

Beppu citizens' Baseball Stadium is shown in Figure 2.28.

Figure. 2.28. Beppu citizens' Baseball stadium

Source: Beppu Enjoy Guide, 2010

Golf courts

The Sent Leisure Kijima Korakuen Golf Club (Fig. 2.29), Beppu Ougiyama Golf Club (Fig. 2.30) are famous among the leisure seekers in Beppu.

Figure. 2.29. The Sent Leisure Kijima Korakuen golf club

Source: Beppu Enjoy Guide

Figure. 2.30. Beppu Ogiyama golf club

Source: Beppu Enjoy Guide, 2010

Aoyama Pool

Aoyama (Fig.2.31) consists of 50m and 25m pools and a diving pool and serving the training camps and promote swimming activities among the community.

Figure 2.31. Aoyama Pool

Source: Beppu Enjoy Guide, 2010

Suginoi Palace, Aquabeat, Suginoi Bowing

A large public outdoor bath " Tanayu" about 4000 m^2 is present. Aqua beat is a water amusement park. Suginoi bowling is the only alley in Beppu

Beppu Kerin

Beppu Kerin (Fig. 2.32) is a popular indoor cycle racing facility which has many events organized for the community's recreation.

Figure 2.32. Beppu Kerin

Source: Beppu Enjoy Guide

2.12.3 *Built facilities adopted for leisure*

2.12.3.1 Bamboo craft center

It is important in recreation together in serving as a center for promoting bamboo industry and contributes to economic development, researches and as a training institute. The facilities include a display room, folk history reference room, conference room and a store room.

2.12.3.2 Beppu Convention Plaza (B- Con Plaza**)**

The Beppu Convention Plaza has been designed with the theme of environment and harmony by world famous architect Arata Isozaki from Oita. The Global tower (Fig.2.36) which is 125m of height, is the symbol of B – Con Plaza. The observation desk located at 100m above ground where the 2 columns cross each other, would provide opportunities to enjoy the magnificent view in and around Beppu the Beppu bay ,stunning view of all of Beppu, the mountains and the hot spring steam. It has a convention hall with a maximum capacity of 8000, available for large conferences, exhibitions, gathering, Philharmonia hall with a capacity of about 1200, with a movable stage for music dancing concerts, meetings etc. Further the oval shaped reception hall designed to obtain the natural sun light available for grand occasions. There is an international conference room, and one medium size, and 7 small size conference rooms as well.

2.12.3.3 Beppu Comprehensive Gymnasium(Beppu Arena)

Beppu Arena (Fig. 2.33) is one of the very famous sports facilities in Western Japan. It is the base for developing sports among the citizens and a destination for sports tourism as well. 2nd floor consists of a main arena, sub arena, conference room, exercise room etc. Apart machinery room, a store house for disaster management are located in the first floor. The 3rd floor consists of 1950 seats in the main arena and 744 in sub arena and about 1788 movable seats.

2.12.4 *Built facilities designated for passive leisure*

2.12.4.1 The Museums

Beppu Art Museum

The aesthetic enthusiasts are able to watch the marvelous work of art in Beppu museum. All year round calendar events scheduled at the art museum, art exhibitions help to promote art culture, the calligraphy, etc to encourage and train school children and other general public on cultural art work. Skilled local individuals as well as invited artists performances are welcomed and is given the

opportunity to display their masterpieces hence would be an encouraging factor for them.

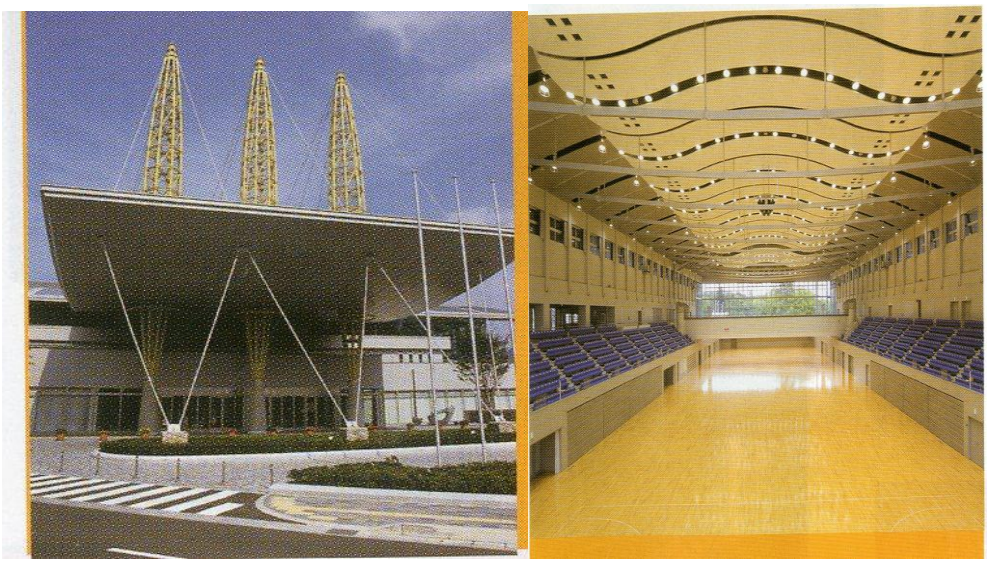


Figure.2.33. Beppu Comprehensive Gymnasium (Beppu Arena)

Source: Beppu Enjoy Guide, 2010

Oita Fragrance museum

It has been established as part of activities to commemorate the 100th anniversary of Beppu University. Serves in a wide variety of needs, including tourism, education and research. It is a novelty experience and other than the fragrance product display gallery, history of the fragrance, introduction to fragrances from a scientific view points have been described. Apart an aromatherapy experience room, and perfumery experience room, manga and animation zone are very attractive components of the facility.

Hamda Onsen Meseum

The Hot spring museum a tangible cultural property itself provide a learning opportunity of the hot spring culture of Beppu from the beginning of the Showa period.

2.12.4.1 Community, education and welfare centers

Welfare centres are located in all over Beppu and serving a lot in different aspects. Central, Northern District, Western District, Central District, Southern District, Southern District Community Center, Asahi Ohirayama District Community Center, Welfare Center for disabled, Welfare Center for workers, Athletic center for workers, Comprehensive Education Center, Community Center, Heart- warming Plaza(Southern Cross), Youth Center in Nature(Ojika), Women s Center (Nadeshiko), Social welfare Center, Nothern Community Center(Asunaro-kan), Southern Children Hall, Nothern, Western, Hikarinosono Children's Hall are some of such established facilities.

The community center, Kami Noguchi cho with the design of architecture from Edo period with an authentic Japanese type hot spring facility, and the Sumo training camp, the Beppu welfare center for workers has been constructed or setup for the citizens to have leisure experiences, together with develop physical stamina cultural educational activities. Citizens hall life long study and social education "Hoppe Park", Soen, Beppu, "Skip Park" , Kunitate Dai, Beppu, Southern Children Hall, Northern children Hall(Asunaro kan) combine different recreation and childcare services specially for children.

The Women Center (Nadeshiko), Youth Center in Nature " Ojika" provide various recreational and leisure experiences for women, children. Learn disciplines, partnerships and volunteer sprits and out door recreational activities would add variety to the monotonous life styles of the different categories of people in the society.

Other than the above facilities, the library facilities, the .cinemas, the shopping malls are serving in fulfilling the various recreational demands of the communities.

CHAPTER 03

DATA AND RESEARCH METHODOLOGY

3.1 Conceptual framework

Conceptual frame work is a representation, either graphically or in a narrative form of the main concepts or variables, and their presumed relationships with each other. These may be qualitative Neuman, (1994); Rosenberg, (1968) or qualitative (Miles & Huberman, 1994).

The conceptual framework for this study (Fig.3.1) was based on few concepts;

The recreational opportunity spectrum (ROS) (Driver et al., 1987; Driver & Brown 1978; Clark & Stankey 1979; Brown et al., 1978; Brown et al., 1979), describes about recreation opportunities in a particular setting. The outdoor recreation has been selected from other recreational opportunities, and in this study the main focus was to study Beppu city's outdoor recreation experiences and if I were to investigate the diversity of the existing outdoor recreational facilities in Beppu, and how they perform, the concerns on the ROS and the recreation management process as a whole need to be considered.

As my focus was to investigate the visitor profiles, perceptions of the users which speak aspects of recreation demand spectrum (Cooper et al., 2008). On the other hand the visitors' suggestions and the selection of two performance indicators have been beneficial to describe the level of performances of such destinations and would speak on some considerations towards the sustainability of the destinations.

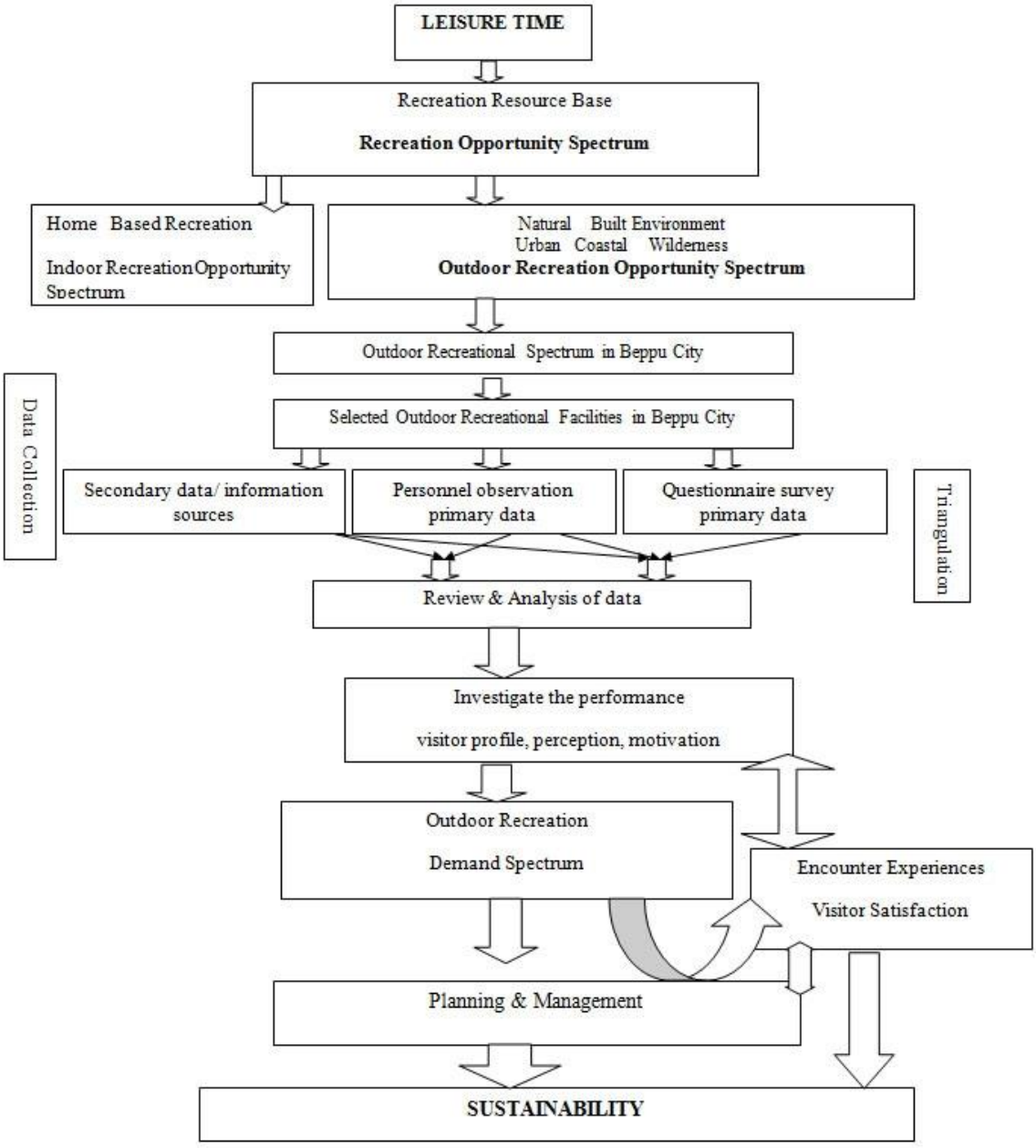


Figure 3.1. The conceptual framework

3.2 Research area and geography

Beppu city located in Oita prefecture which is famous for its hot spring resources has been selected as the study area. Beppu is tucked between a bay of the inland sea and two mountains; Mt. Tsurumi of Aso National Park and Mt Yufu on the edge of the island of Kyushu. Mount Takasaki is bounded in the Southern part of Beppu

where Kunisaki Penninsula, is on the West. The area extent of Beppu is 125.31 km^{2,} the total population is 120,623 as at 2010 (2010, Summary for Beppu City). Beppu city's location map (Fig. 3.2) and the views of Beppu city are shown in Figure 3.3 and Figure 3.4.

Figure 3.2. The location map of Beppu city

Source: Beppu jigoku association broachure

Figure 3.3. Beppu city

Figure 3.4 Beppu city and characteristic hot spring stream

Source: Beppu city guide 2009

3.3 Research methodology

3.3.1 Case study methodology

The case study approach involves a systematically gathering of data about a subject; particular person, social setting, event or group, and it will enable the researcher to effectively understand how the case is really functions. Case studies can be classified in a variety of ways (Tellis, 1997, Becker et al., 2005; Stake 1994, 1995). Smith, 2010 has described some tactics to address key analytical issues in case studies; construct validity, internal validity, external, validity and reliability which could be tackled at different stages (data collection, report preparation, data analysis, and data collection) during the research process. Paying attention to research ethics revolve around various issues of harm, consent, privacy, and the confidentially of data (Punch, 1994) is a factor that should be considered in carrying out researches.

The size and quality and representative of the sample are key determinants for the accuracy and validity of the final results. The conceptual population, the study population, a suitable sampling frame depending on the requirements are important to obtain accurate, most reliable and statistically valid results. The probability

samples (simple random, stratified, cluster)which are representative of the sampling frame are the most useful for making valid decisions compared to no probability samples where sample units are not chosen randomly .

Hence in this study some of the outdoor recreational facilities in Beppu city were selected in order to represent different types of outdoor recreational experiences, uniqueness, and easiness of accessing the information and based on the popularity as sample units to investigate the research objectives.

3.3.2 Data sources

3.3.2.1 Primary data collection

The data collected by the researcher for his or her own use is called as the primary data. It could be roughly associated with either empirical or subjective paradigms or some may have both empirical and subjective qualities.

Surveys are a tool to solicit information from a group of people through the use of structured questionnaires or personal interviews. Surveys are usually administered to a relatively small portion of a larger population and can be administered in a number of ways; personal contact with the potential respondent, distribution by mail, email(web based mail), telephone. The particular techniques associated with each of these methodologies such as questionnaire designs, ethical concerns in obtaining information etc. should carefully be taken into consideration to get the maximum use of the effort and to minimize the conflicting situations

Field research is another tactic for collecting primary data. This is carried out by visiting the study location and make systematic observations of a phenomenon. It is a useful way to obtain information that would not be available from other sources of information. Participant observation (Bruyn, 1972) is a special form of field research in which the researcher himself becomes involved in the community being studied. The method would provide with deeper understanding of the dynamics and the complexities of the study situation. The first hand information could be obtained and interactions with the surrounding would add additional information to the study.

Photographs are often beneficial to communicate and photography could be used as a technique in primary data collection. Special photographic techniques and considerations that suit the content analysis Neuendorf (2002b) could be considered (Collier, 2001) in data collection.

The personal observations, formal questionnaire surveys, personal communications the photographic techniques were used as primary data collection techniques sources in the study.

3.3.2.2 Secondary data sources

Secondary data sources are the data that has collected by someone else. A limitation of the use of secondary data is that one has to admit the definitions, methodologies, analysis methodologies set up by someone else. Thus in this respect the meta data is important. It allows exploring the topics without spending much time, money or energy.

In this research, the secondary sources of data such as annual reports from Beppu city office, tourism directories, broaches and booklets, other source documents, web information were used to obtain in depth knowledge and information regarding the sites concerned.

3.3.2.3. Triangulation method

"The defining characteristic of triangulation is the use of multiple sources of data from different perspectives to arrive at a most definite and reliable conclusion" (Smith 2010). Smith further says that triangulation does not mean simply the use of a combination of different methods but it is a matter of using three or more methods or data sources that share common epistemologies and ontologies to assess the reliability of findings or to identify potential biases in data or investigator characteristics. Hence by combining several methods researchers obtain a better more substantive picture of reality; a richer, more complete understanding of a situation. This is interpreted as a means of mutual confirmation of measures and validation of findings. Jick, 1983; Leedy 1993; Felding, 1986 specifically address this aspect of triangulation. They suggest that the important feature of triangulation

is not the simple combination of different kinds of data but the attempt to relate them so as to counteract the threats to validity.

In the present study personnel observations, secondary data and for some facilities data from formal surveys, inquires (appendix 3,4) were triangulated in the form of case studies (Smith, 2010; Berg, 1998; Punch,1999) to obtain a most reliable conclusion/ results at the research completion stage.

The investigations on performances of outdoor recreation facilities in the city via 3 bottom line approaches; environmental, social and economic sustainability (Gunn, 1988) and obtaining perceptions which speaks on the different aspects of planning and management Pigram & Jenkins, 2006) and satisfy the visitors that would ultimately lead to overall sustainability of the destinations have been explored.

3.3.3 Research in the field

The diversity of outdoor recreational facilities in Beppu city were investigated based on different types of outdoor experiences, the ownership, differences in the admission charges using secondary sources of information such as reports, web information, personnel communication, broaches etc. The cultural and special events that are organized in Beppu city were also tabulated based on the secondary sources of information and from personnel experience.

Personnel field observations were carried out in some other major outdoor recreation facilities; Shoningahama, the Spa Beach and Motigahama Park, Kintetsu Ropeway, Mt. Tsurumi and Aso Kuju National Park, , African Safari, Aqarium (Umitamago), Kijima Korakuen Amusement Park, Mount Takasakiyama Monkey Park, and Jigoku, operating in Beppu and scenic view points, Jumonjibaru Plataue and Beppu Wan Service Areas to investigate the overall performance covering all the three bottom line approaches; environmental, social and economic conditions of outdoor recreational facilities operating in Beppu city.

Further during personal investigations attempts were made to find out destination's strengths such as destination‘s assets, priority use areas, current and potential attractions, areas of natural interest, landscape aspects together with the

opportunities that could be explored for the development of the facilities . The weaknesses, and threats associated with each sites were also taken into consideration together with identifying, festivals or cultural events conducted or any other programmes for community attractions.

Apart personal observations and questionnaire surveys (Fig. 3.5) were carried out in the month of November 2010 in some of the selected Government owned public recreation facilities and the facilities with minimum authorization needs to access the facilities were only selected for carrying out the questionnaire surveys. The major case study areas, Lake Shidaka, a natural lake, which is a popular local recreation destination, Myoban Onsen, which is a unique onsen facility in Beppu with outdoor recreation aspects as well and in Beppu Park that represents public parks net work in the city were selected for the detaied visitor surveys.

Figure 3.5. Questionnaire survey in the field

Total visitor counts were obtained by direct head counts over 3 hours period. For getting the accurate and reliable data depending on the premises some counts

were made repeatedly as shown in table 3.1. Then the average total counts in peak hours were obtained.

50 questionnaires (see appendixes 5, 6) were distributed in each premises after a brief explanations of the study to the respondents. Rejecting to respond were recorded only 5 times throughout the surveying attempt. The questionnaire distribution and field survey schedule is shown in Table 3.1. The questionnaire surveys were used to analyze visitor profiles such as the peripheral distances where visitors come from, visitor group sizes, gender classification, age groups, and stay durations. Some visitor perception aspects; on the most appreciated qualities of the facility, adequacy of infrastructure facilities, staff assistance, adequacy of information and sign boards were inquired through the questionnaire in each case study locations. Attempts were made to obtain the difficulties encountered by the visitors and to obtain visitor suggestions to the three facilities concerned. The level of visitor satisfaction and the frequency of visiting the facility which were selected as two performance indicators for the three sites were obtained.

Further the respondents were inquired to obtain the most common constraint in outdoor recreation and to know the visitor preferences on other recreational facilities operating in Beppu.

Table 3.1. Questionnaire survey and field survey schedules in Lake Shidaka, Beppu park & Myoban complex

Plan	Field survey destination					
	Lake Shidaka		Myoban complex		Beppu park	
total number of responses	50		50		50	
Questionnaire distribution plan	Week Days	Week End/ Holidays	Week Days	Week End/ Holidays	Week Days	Week End/ Holidays
Number of days of distribution	2 days	1 day	3 days	2 days	3 days	3 days
Visitor count duration (10 am-1pm)	3 hours	3 hours	3 hours	3 hours	3 hours	3 hours
Frequency of counting (per hour)	1 time	1 time	2 times	2 times	2 times	2 times

The study was supported by many personal photographic presentations for clearer explanation on the field conditions in the main case study areas and in the other selected out door recreational sites.

CHAPTER 4

RESULTS (PART I)

PERFORMANCE OF POPULAR OUTDOOR RECREATION FACILITIES OF BEPPU CITY

4.1 The diversity of outdoor recreation opportunities in and around Beppu

Table 4.1 illustrates the diversity of outdoor recreation facilities, outdoor experiences encountered, ownership status and admission charges. Table 4.2 illustrates the year round use of the outdoor facilities for traditional and recreation related events (Fig. 4.1, Fig.4.2, Fig.4.3)

Table 4.1. Summary of diversity of outdoor recreation facilities in and around Beppu

Category of Recreation	Main types of facilities	Facilities in Beppu	Ownership; Admission-Free/Charged
Urban Recreation	Public Parks Network	Beppu Park, Minamitateishi Park, Kita Ishgaki, Matogahama, Minami Ishigaki, Ryokuchi Asamikawa, Sakaigawa, Kannawa, jigoku Chitai koen	Public; Free
	Children Parks	Jidou Koen, Kaimonji jido Koen, Nakooyoshi jido Koen, Matsubara jido Koen, Nochiharabaru jido Koen, Higashi Koen, Temanjido	Public; Free
Forest Recreation/ Wilderness	Ropeway	Kintetsu Ropeway	Private; Charged
	Natural Zoological Gardens	Mt Takasaki Open Zoological Garden	Private; Charged
	Natural Lakes	Lake Shidaka, Lake Kagurame	Public; Free

Table 4.1 Cont..

Category of Recreation	Main types of facilities	Facilities in Beppu	Ownership; Admission-Free/Charged
Excitement	Theme Parks/ Amusement Parks)	Kijima Korakuen, Beppu Wonder Rukutenchi Nature Amusement Park	Private; Charged
Coastal Recreation	Beach Parks	Shoningahama Park, Spa beach, Tanura Beach, Sekinoe Beach	Public; Free
Sports and Swimming	Sports Stadia	Jissoji Central Park, Noguchibaru Athletic Field, Beppu Citizens' Baseball stadium	Public; Charged
	Swimming Facilities	Aoyama Swimming Pool	Public; Charged
	Golf courses	Kijima Korakuen, Beppu Ogiyama	Private; Charged
Cultural/ Traditional	Outdoor Onsen Facilities	Tanayu Onsen, Kitahama Termas	Private; Charged
	Sand Baths	Rokushoen	Private; Charged
	Jigoku	Umi,Oniishibozu, Yama, Kamado, Oniyama, Kinryu, Chinoike, Shiraike, Tatsumaki	Private; Charged
Wildlife/ Aquarium	Safari Park	African Safari	Private; Charged
	Umitamago/ Aquarium	Umitamago	Private; Charged
Viewing of Scenery	Scenic View Points	Jumonjibaru Plateau, Beppu Wan Area	Public; Free

Table 4.2.Annual outdoor recreation and tourism related events in Beppu

Date	Event
beginning of January	Coming- of –age celebration
9th January	The new year parade of fire brigades
23rd (middle – end) January	Oita-Godo Beppu mid winter swimming meet
25th January – 6th February	Bamboo art crafts exhibition
6th February	Beppu - Oita mainichi marathon
8th February -20th February	Bamboo light exhibition
1st March - 3rd April	Light festival, Kannawa district
13th March	Opening of Lake Shidaka
1st – 4th April	Beppu Hatto onsen festival, Mt Ogi fire Festival
9th April	Lake Shidaka - Cherry blossom festival
9th - 27th April	Beppu Argerich music festival
10th & 11th April	Mt Tsurumi climbing rally
6/7 & 29/30 May	Beppu Hatto Onsen Expo, Onpaku
4th June – 5th June	Iiris watching at Lake Kagurame
Middle of July	Beach Cleanup (Volunteer Activity)
18 & 19th July	Opening festival of Sekinoe Beach
22nd – 25th July	Early evening Summer festival, Spa Beach, etc
end of July	Fishing boat Festival, Hamawaki Port
beginning of August	Beppu port festa, Beppu International Tourist Port
beginning of August	Kamegawa summer festival, Kamegawa fishing port
end of August	Lake Shidaka, Early summer evening festival
27th – 29th August	Hamawaki Yakushi Festival, Hamawaki Onsen
21/ 23 to end of Sep.r	Kannawa Onsen Yuami (bathing) festival
middle- end of October	Oita fisheries festival, Kamegawa Port
16th – 17th October	Beppu Yukemuri Health marathon/walk Lake Shidaka, Lake Kagurame

Table 4.2. Cont..

Date	Event
middle- end of October	Oita agriculture & forestry festival, Beppu Park
middle- end of October	Beppu dance festa , Beppu Park
end of October	Beppu Yoi-yoi women's' festival, Kitahama Station
end of October – beginning of November	Beppu educational festival(Oni-no-Iwaya festival Shonin elementary school/The ancient tomb of Oni-no-Iwaya)
beginning of November	Aburaya Kumahachi memorial festival Beppu Park/ West Gate
beginning - mid of November	City Welfare Festival / Citizens & Fire Brigade
beginning of November	Heart Hot! Festa Sentomyo/Candle light festival, Beppu Park
beginning of November	Sento Taisai, Beppu city Beppu community development promotion committee
end of November	Lake Shidaka, visitors day
mid of December	Beppu Tosuisai - Chic winter festival, Beppu Park
end of December	Waku-Waku farm products fair, Beppu Park, Cultural Zone
end of December	Beppu Christmas Hanabi fantasia Motigahama Park, Spa Beach, etc.
end - the beginning of the new year	Free access- Municipal regulated hot springs

Figure 4.1. The brochure of Beppu hot spring festival

Figure 4.2. Kamegawa Summer festival

Figure 4.3. Kamegawa Autumn festival

4.2 Performance of popular outdoor recreational facilities operating in Beppu city

4.2.1 Public Parks Network in Beppu

4.2.1.1 Shoningahama Park

This park consists of a beach area and an adjacent inland park area (Fig.4.4) as well, so that it provides both the coastal and terrestrial form of recreational experiences. One part of the beach area consists of a narrow stretch of land that directly exposed to the sea with some natural rocks and some what a similar to rocky shore type characteristics. The other part of the beach area has been modified by creating and extended new artificial beach (Fig.4.5) which has been a very attractive modification. This recently modified beach area of the park has added more space to the park and would able to attract more leisure seekers to the site. Such rehabilitation activities would ensure and enhance the coastal conservation attempts as well. A sports area has recently been added as a new component to the park.

Figure 4.4. Shoningahama park landward park area

The neighborhood communities seek to spend their leisure time with their children in this park. Mostly the time single individuals or couples with their pet animals visit the park. The small groups of children, especially in nursery schools conduct their field activities and young play groups frequently use the inland area of this park.

Figure 4.5. The recently modified artificial beach area

The neighborhood communities seek to spend their leisure time with their children in this park. Mostly the time single individuals or couples with their pet animals visit the park. The small groups of children, especially in nursery schools conduct their field activities and young play groups frequently use the inland area of this park.

The park has a considerable amount of greenery especially in one side of its land area thus are helpful in contributing to urban greenery and be beneficial in maintaining different ecological processes such as in providing shady environments, fauna and floral conservation, carbon sequestration, etc. Different types of tree species are planted in the park and few flower beds and bushes have been maintained to add some beauty to the park.

The availability of adjacent leisure facilities such as sand baths would attract more individuals to the park and even the park has been advertised together with such facilities. The park would provide leisure opportunities to the attendants to the women's community center which conduct different programs with the participation of the community located in the park neighborhood.

Figure 4.6. The supportive structures for old trees

The old plants are with supportive frames (Fig.4.6) and seems to be having due care. The weeding operations, pruning activities of the vegetation in the park were seemed to be carried out as per schedules. The maintenance, the cleanliness was very satisfactory. The park administration has provided the basic needs and necessities for the users such as parking, water, toilets, etc, and these infrastructure facilities seems to be adequate (Fig.4.7).

Figure 4.7. The basic infrastructure facilities in Shoningahama park

4.2.1.2 The Spa Beach and Motigahama Park

The Spa beach is having some what a wider beach area exposed directly to the sea along its sea ward boundary, and with a inland park area (Fig.4.8). Compared to that of Shoningahama park people can enjoy more on the beach activities. People visit the park for walking, cycling, exercising, accompanying pets in their visits, and for various other activities; flying of kites, beach ball activities etc (Fig.4.9).

Figure 4.8. The spatial arrangement of the Motigahama park

Figure 4.9 Recreation activities in Motigahama park

The steps facing the sea side provides a good seating arrangement for larger crowds (Fig. 4.10). The water sprinklers (Fig.4.11) which operate in timely manner save both water and the energy added beauty and aliveness to the park.

Figure 4.10. Seating arrangement in Motigahama park.

Figure 4.11. The water sprinklers

The lightning at night was sufficient and especially in summer and in favorable weather conditions people throng for fun and other activities such as for barbeques etc. at night. Special events such as the summer festival, Hanabi (Fig.4.12), beach cleaning programs (Fig.4.13) are organized at the park premises. As the park is located in an easily accessible area, very close to the center of Beppu city, it could be considered as a good venue to organize such events. The beach cleaning program organized by voluntary organizations would aware the general public on the importance of keeping a clean beach area and would enhance the cleanliness of the beach. The park is clean and has sufficient number of waste segregation containers around the park, so that the waste management operations were carefully carried out.

Figure 4.12 Hanabi festival 2010, Spa Beach

The stretch of land adjacent to the road side of the Motigahama Park was with some dense vegetation areas (Fig.4.14) and was not very attractive. Although the spatial arrangements are suitable to conduct festive events, the land-side of the park was not spacious enough to accommodate large crowds at a time.

Figure 4.13. Organizing the beach cleaning activities

Figure 4.14 Dense vegetation and dampness in Motigahama park

A building at one end of the park, facing the sea side, has not been used for any special purpose and remains in ruined state (Fig.4.15). Parking was somewhat a difficult task as no allocated parking lot for the park exists. A limited number of park users can stop their vehicles in the adjacent coined-parking areas.

Figure 4.15. The unused building structure

4.2.2 Kintetsu Ropeway, Mt. Tsurumi and Aso Kuju National Park

The Kintetsu ropeway (Fig.4.16) provides a magnificent view of the Beppu Bay, whole of Beppu city and surrounding areas of Beppu and an opportunity to observe large forest area of Aso Kuju National Park (Fig.4.17). The surrounding natural forested area serves as the resource base for the rope way to appear in different scenic views all the year around. The designing of the ropeway has provided an excellent opportunity for outdoor recreation and has contributed to conserve a large area of Aso Kuju National Park with least management involvements. Ropeway does a minimum of impact and is less disturbing to the natural environment compared to other types of forest recreation operations in parks and other conservation areas and generates an income. Few minutes tour within the cubicle with a short welcome and an introduction to the local area when climbing the summit was interesting.

Figure 4.16. The Kintetsu ropeway

Figure 4.17. Magnificent views from the ropeway

Being in the ropeway the seasonal changes (Fig.4.18) could be observed in a very unique way. The forest coloration and the appearances of the surrounding areas give different picturesque views in different seasons of the year. In Spring early April, with about 2000 cherry blossoms, mid May, Kyushu Azaleas, wild grasses and flowers, in Summer, June to July with mountain Hydrangeas, wild grasses and flowers, Autumn foliage in multi color in mid October to mid November, and Hoarfrost in early December to mid March add unique natural sceneries for the ropeway to operate all the year around. The different types of fauna (Fig. 4.19) and

flora occurring in the forest areas could be observed with fewer disturbances to them.

Figure 4.18 Seasonal variations in the forest from ropeway

Figure 4.19 Undisturbed wildlife viewing from the ropeway

On the other hand other than the hiking trails, the rope way is an alternative path to reach the religious landmarks such as Hono Honome Upper Shrine, the seven Gods of Good Fortune etc. The shrines and cultural monuments (Fig.4.20) depict the cultural uniqueness associated with the Mt Tsurumi. The ropeway assists and

enhances the participation of small children, elderly and disables community for such traditional events.

The mountain climbing is a different type of experience and would enhance the community participatory activities thus helping to continue cultural or traditional rituals that are embraced with the volcanic mountain. The events such as Mt. Tsurumi climbing rally(Fig.4.21) in second Sunday of April, the climbing rally and seven deities festival in late July, cold endurance contest in late January have make the “Tsurumi Sama”, a famous outdoor recreation facility among the community.

Figure 4.20. The shrine area on the summit

Figure 4.21 Mount Tsurumi climbing rally

Source: Beppu city guide 2011

The observation platforms for night viewing, and to view the Kuju range and Yufin area, the Sanjo Station for Kisok/ Hoarfrost display are some of the facilities associated with the rope way. Opening of the rope way for evening viewing in early to late August provides night views and different types of experience for the visitors. The observation area with the resting facilities, refreshment and souvenir sales sections were some of the facilities available in the summit of the mountain. The giant temperature gauge and weather indicators (Fig. 4.22) were additional components of interest in an inquisitive moment on the top. The emergency safety concerns of the visitors were assured by the availability of medical support facilities operating within the resting area on the climax and the presence of emergency plans for rescue operations.

Figure 4.22. The giant temperature gauge

The plant selling stall “Sanyasou Kan” maintains in the close vicinity sells broad range of area specific plant species should be appreciated as it would motivate the tree planting behaviours of the general public while enjoying a well maintained forested area. The Kyushu Shouchu Kan sells and displays around 300 liquor varieties, famous distilled liquor, cane sugar liquor and “awamori” (a special local food product) and souvenirs as well as information brochures (Fig.4.23).

Figure 4.23. The souvenir shop and Shouchu Kan area

4.2.3 The African Safari Park

The African Safari Park is an open zoological garden in Beppu. The animals are mostly from African continent, thus they are in an alien habitat in Japan that is different to their original free ranging areas. But rather than being kept in cages with limited space as in normal zoological gardens the animals in African Safari park have comparatively a higher degree of freedom (Fig.4.24).

Figure 4.24. The animals have freedom

There are jungle buses (Fig.4.25) for field observations and they are very attractive. The explanations on the field tour around the park are done by the staff. Observing the wild animals being in jungle buses provide a maximum and a very close and an exciting experience. Opportunity for offering food to free roaming animals while being in the jungle buses is a unique experience (Fig. 4.26).

Figure 4.25. The jungle buses for field observations

Figure 4.26. Offering different types of food to animals

The observations inside park areas while being in the jungle buses showed that most of the land areas in the park were grasslands. The bare and degraded land areas also could be observed (Fig.4.27)

Figure 4.27. The bare and degraded land inside the park

The landscapes of higher elevations provide good observation positions. Most of the animals showed year-round good body conditions (Fig.4.28) while some of the individual animals with poor body conditions could be observed during spring visits to the facility (Fig.4.29). Specific techniques to provide fodder, water shelter, hiding places such as caves could be appreciated (Fig.4.30). Less artificial structures were used and efforts have been made to preserve the naturalness of the animal living areas.

Figure 4.28 Animals in good body conditions

Figure 4.29 Animals in inferior body conditions

Figure 4.30. Different types of installments to provide fodder, water

The prescribed types of private vehicles are allowed for field observations (Fig.4.31). The electrically operated gates (Fig.4.32) are used to regulate the vehicle movements while limiting the animals' movements. Number of patrolling vehicles operating in the field ensures the safety aspects and emergency preparedness.

Figure 4.31. Field observations in private vehicles

Figure 4.32. Electrically operated gates for safety precautions

Night time safari offered during the summer time is a good opportunity to continue the public visitation avoiding the hot daytimes. The experience of the nocturnal behavior of wildlife is well appreciated by the visitors. The “Teepee” camping

provide in the facility also attract visitors and enable them to experience a night with African wildlife.

The main sections of the safari park the bear mountain animal section, tiger section, cheetah section, section of antelopes, restaurant area, petting farm, kyatto saron(cats corner), friendship forest, kangaroos corner, squirrel money forest, miniature horse riding, dog saron, provide an opportunity to experience the wonderful animal world.

Various small animal species kept in different locations in fenced areas or cages are allowed to pet for fee, would specially train the children to learn on the kindness towards animals and suppress animal cruelty in their world. Such activities provide diversified recreation opportunities and give maximum satisfaction to the visitors while maximizing the profits of the facility. The pigmy pony rides for small kids, and horse rides for children and adults make the children enjoyable and strengthen their characters.

The kangaroo corner (Fig.4.33) has allowed the visitors to interact closely with kangaroos. The setup of the monkey area has been built to match their natural behaviors. The attendants who are in charge of each corners are responsible for the routine maintenance activities, assure safety concerns of the visitors and visitor control activities. The horse chariot operating in the visitor interaction zone is very attractive and provides the whole family members to enjoy a ride (Fig.4.34).

Figure 4.33. The kangaroo corner

Figure 4.34. Pigmy ponies and horse chariot for hire

The visitor interactive and service area provide different recreation opportunities. Different artificial animal models are placed in the garden are rotated for make the environment a newer appearance (Fig.4.35). The open space in the interactive area is attractive with beautiful landscapes, seasonal plants species, bushes and unique restaurant designs which resemble the Africa/ Kenyan situations (Fig.4.36).

The picnic area (Fig.4.37) which has been designed for small picnic groups to be in a relaxed outdoor picnic environment is unique and interesting. The shopping outlets (Fig.4.38) with unique, imported, African products are very attractive and suit to the site. Part of the revenue generated through local tourism activities directly diverted to the native African wildlife communities could be an added benefit of the facility.

Figure 4.35. Different spatial arrangements and models of animal

The adequacy of the infrastructure facilities such as the big parking area, food and refreshment facilities, restrooms are maintained at higher standards. The site maps, information and sign boards and directions are displayed to make the visitors comfortable during the stay.

Figure 4.36 The unique restaurant designs

Figure 4.37. The picnic area

.

Figure 4.38. The original African products outlet

The facility has been well received by the community. This could be justified by the presence of more than 500 numbers of vehicles in the parking area during some field visits (Fig.4.39). The facility has provided wide range of employment opportunities as managers, curators, animal care takers sanitary staff, jeep guides, tour guides etc thus socially serving .

Figure 4.39. The infrastructure facilities maintained in the premises

The public bus services operate to the site. The facility has been advertised in different media, the television, the broaches, through a descriptive web site, and has widely been popularized among larger community.

4.2.4 Aquarium Umitamago.

Umitamago is a marine palace in which a wide range of individuals in the society; the kids, the children, young, old aged can enjoy themselves (Fig.5.40). It's a peaceful environment to spend the leisure time experiencing the fascinating aquatic world. The diversity and colorful aquatic life that could be observed ranging from the gigantic seals, sharks to very delicate sea anemones, corals are marvelous. (Fig.5.41). The facility displays different forms of aquatic life in different sections.

Figure 4.40. The facility is well perceived

Figure 4.41. The Aquatic world on display

The explanatory notes in two languages, Japanese and English on each display cubicle (Fig.4.42) provide an additional knowledge on the species, describe their adaptations and build curiosity for learning more on the aquatic life. The feeling of being inside the waters has given by the arrangements and the setup in some of the observation areas.

Figure 4.42. The introductory notes of the specimens

Different aquatic life forms and eco systems such as local rivers, freshwater, oceans, lagoons, the tropical zone with large coral tanks, and the jungle tanks representing tropical Amazon, zone with sea lions, otters, walrus, the section of fishes with different adaptations to their environments and with diverse ecologies are being displayed(Fig.4.43) in mermaid, wonder zones and in frigid zones.

The performance schedules of various aquatic animals are on schedules (Fig.4.44 and Fig.4.45) to maximize the visitors' satisfaction. The performances of dolphins, sea lions and walrus are conducted with a large number of visitor participation and with some interactive activities, giving them a maximum level of enjoyment, fun and excitement. The performances were conducted with maximum care; the observers make prepared before the shows by distributing coverings, advising for the best practices etc by the staff in charge.

Figure 4.43. The different zones in the facility

Figure.4.44. Entertainment with walruses

The science zone with the laboratory shows the adaptations of different fish species and the explanations were carried out with the interactive participation of the observers. The displays really show the adaptive radiation among the different fish species can be considered as a practical session to learn on fishes (Fig.4.46).

Figure 4.45. The performance of dolphins

Figure 4.46. Demonstrations of adaptive radiation of fishes

The large sea turtles in tanks could be fed by purchasing food items from the turtle feed outlet. The indoor touching area allows the kids to play with the sea urchins, sea cucumbers and to be really relaxed (Fig.4.47). The experiences with pelicans, penguins were also quite interesting.

The kids corner (Fig.4.48) has been carefully designed specifically to give the children a feeling of being in a beach or sea shore and characteristic units such as sea shells, fishing equipments, ships or boats associated with the coastal environment have been located in order to provide a chance to play and learn on the items and processes coupling with the oceanic or beach environment.

Figure 4.47. Indoor touching pool & turtle feed outlet

Figure 4.48. The kids play area

The availability of directions, guidance and the assistance for performance areas are well organized and could be appreciated. The cafeteria and refreshment corners are very spacious with quite lot of food varieties. The temporary roofs adjusted in the cafeteria enable to increase the seating capacity of the cafeteria while proving the customers to enjoy the outdoor environment while enjoying their meals (Fig.4.49).

Figure 4.49. Souvenir shop, food & beverage corners

4.2.5 Kijima Korakuen Amusement Park

This theme park (Fig.4.50) is designed to give the visitors a maximum range of excitement through various creative and adventurous activities. This facility has introduced the Japan's first wooden roller coaster, "Jupiter"(Fig.4.51). Large number of special types of excitement opportunities and activity designs are made available targeting all age groups of people. The kids play areas with attractive features and quite interesting. The toys kingdom and various other arrangements for them and specially designed activities add wonderful memories to their visits (Fig.4.52). The participation in different amusement activities are on charged basis. Numbers of ticket vending machines (Fig.4.53) are available enabling the visitors to join the performances as per their needs. Further identification bands are attached to special pass holders are tracked in entrances for each attraction is a special provision and efficient method of exploring the facility.

The special concessionary packages allow the people to visit the facility at concessionary prices. Special different performances/shows organized all the year around welcome the visitors from all walks of life even from distant places. The seasonal propaganda such as winter snow parks in winter, spring fiesta etc make the facility famous and attract large crowds for the unique attractions. Giving a wide popularity in mass media, distribution of brochures even in far away places, offering special discount and free passes to school children, nursery schools have make the premises a popular recreation destination and have enable to be perceived by a wider community.

Figure 4.50. Kijima Kogen entrance

Figure 4.51. Japan's first wooden roller-coaster

The natural surrounding with large trees and maintain greenery in the premises (Fig. 4.54) should be appreciated. The display boards, information and directions are clear and descriptive (Fig.4.55).

Figure. 4.52. Excitement opportunities for all age groups

The equipment lending such as carriers for kids, wheel chairs etc., for a reasonable fee make the visitors life easier. The information center provides information on other nearby recreation facilities and offer some discount tickets for other nearby recreation locations as well. The other infrastructure facilities such as spacious parking, resting facilities seem to be adequate. The Kijima Golf facility and the hotel are also an attractive features attached to the facility

Figure 5.53. The ticket vending machine

Figure 4.54. Maintaining the greenery at the premises

4.2.6 Takasakiyama / Mt. Takasaki Wild Monkey Park

At the Takasakiyama park visitors are able to observe monkeys in their natural habitats (Fig.4.56). The interesting social behaviors of monkeys (Fig. 4.57) attract visitors to the premises. Different feeding mechanisms (Fig.4.58) to feed the monkeys, to improve the animal welfare activities are practiced in the vicinity.

Figure 4.55. The directions for visitors

Figure 4.56. Monkeys in the observation area

The ropeway, “Sarukko Rail” a mono rail (Fig.4.59) is an easy access to the mountain top and provide opportunity to observe the natural habitats of monkeys and the scenic view of the surrounding as well.

The museum and the shopping mall are able to attract people who visit the park and nearby aquarium. The museum provides a vital opportunity for the visitors to learn on the life histories of monkeys. The evolution of monkeys, their allied partners and primate family has been explained and is very enthusiastic for the

interested personnel on animals. The premises provide information broaches on other environment related projects carried out in the area by different parties.

Figure 4.57. The social behavior of monkeys

Figure 4.58. The methods of feeding the monkeys

Source: Beppu Enjoy Guide, 2010. Tourism Division Publication

Figure 4.59. "Sarukko" mono rail

4.2.7 Outdoor onsen facilities

Besides from the conventional indoor hot water baths, Beppu offers outdoor baths (Fig.4.60), mud baths (Fig.4.61) which are basically muddy hot water baths, sand baths(Fig.4.62), where bathers are buried in naturally heated sand, steam baths that are heated by the steam of a hot spring. "Ashiyu" are shallow hot spring pools for putting one's feet. They are found in recreational sites, outside of many hot spring resorts, in streets, and some public places and can be use for free of charge (Fig.4.63). A sand bath is shown in Fig. 4.62.

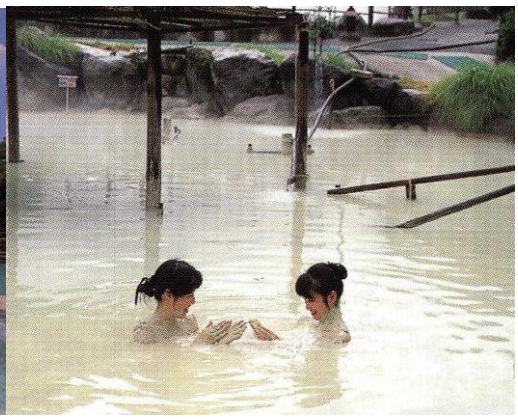


Figure 4.60. Outdoor onsen baths **Figure 4.61. The mud baths**

Beppu Enjoy Guide, 2010. Tourism Division Publication

Figure 4.62. Sand baths

Beppu Enjoy Guide, 2010. Tourism Division Publication

Figure 6.63. "Ashiyu" located in Kijima Kogen

4.2.8 Jigoku Facilities

Tatsumaki Jigoku

Tatsumaki jigoku (water-spout hell) /Tornado geysers forces and shoots up water to a height of 20 meters every 25 minutes and is designated as a natural monument of Beppu. This "spout hell" which features a boiling hot geyser, erupts underground hot

water about 150^{0}C under pressure every 25-40 minutes for about five minutes (Fig.4.64). The blow up a hearty hot fumaroles has a temperature of about 105 ^{0}C. This natural dynamic mechanism is something indescribably wonderful and attracts visitors to the site (Fig.4.65)

Figure 4.64. Tatsumaki Jigoku

Figure 4.65. Visitors waiting for the sprout and enjoying the moment

The facility consists of spacious observatory which could accommodate about 200 people (Fig.4.66). A stretch of land area above the facility is maintained as a tropical botanical garden (Fig.4.67). Palm trees and some other tropical trees could be found in the garden. From mid April, bright color azalea flowers are spread

on the garden slope and the scene is very grand. Large private car park, refreshments and toilets facilities are present in the facility.

Figure 4. 66. The observation area

Figure 4.67. Adjoining tropical garden

The display center and sales outlets maintained at the premises provide detailed information and interesting facts on jigoku tour in Beppu, brochures, sightseeing maps, products from jigoku and Onsen. Different types of gift items, products from jigoku are available in the sales outlet. Special products from jigoku such as boiled eggs, cans of powdered minerals to be used in bathing, are available as products of the jigoku (Fig.4.68).

Figure 4.68. Jigoku products and souvenirs for sale

4.2.9 Scenic view points

Jumonjibaru observatory

Jumonjibaru plateau is a scenic view point at a higher elevation where the leisure

seekers, local tourists as well as international tourists pay their visits for short durations just to observe the panoramic view of the surrounding area (Fig.4.69). The restaurant present in the site is quite peaceful (4.70). The parking is sufficient for vehicles even for few tourist buses.

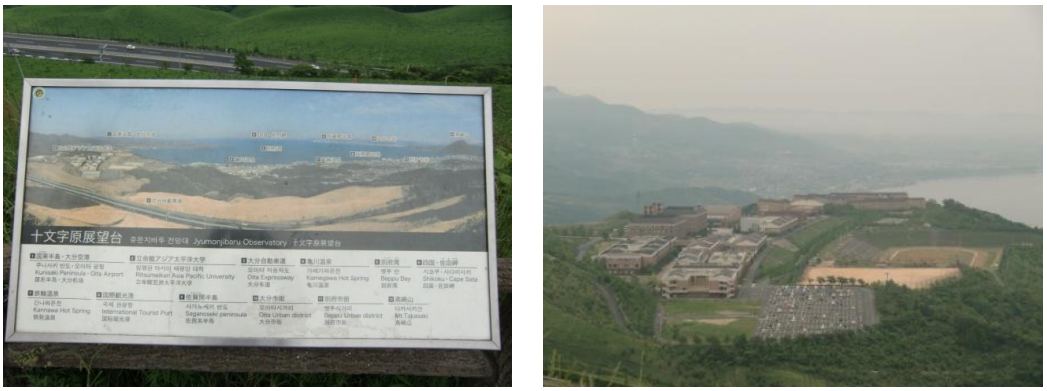


Figure 4.69. Description board of Jumonjibaru observatory and the panoramic view

Figure 4.70. The restaurant at the site

Beppu Wan Area

The Beppu Wan area (Fig.4.71) has been focused as a resting area for the high way users as it is located in the intersection of Oita expressway. The site provides fine view of the Beppu city and on the bay area (Fig.4.72). The facility has been famous among the highway users. But the local area visitors and daily leisure seekers too visit the premises. Variety of food and refreshment outlets, large resting areas, restaurants and hotels (Fig.4.73) are available in the site. The landscape in the facility has maintained in an attractive way.

Figure 4.71. The Beppu Wan area

Figure. 4.72 View of Beppu City & Mt.Takasaki

Figure 4.73. A rest house in Beppu Wan area

CHAPTER 5

RESULTS (PART II)

VISITORS' PERCEPTIONS OF LAKE SHIDAKA, BEPPU PARK, MYOBAN COMPLEX

5.1 General comparison of visitor profiles of Lake Shidaka, Beppu park, Myoban complex

5.1.1 The total visitor counts

In weekends / holidays compared to that of weekdays has a higher average total number of visitors per three peak hour period in all 3 facilities (Fig.5.1). The highest average total number of visitors per 3 hour period in weekends or holidays was recorded in Lake Shidaka and in weekdays it was in Myoban complex. Both in week days & weekends or holidays, comparatively a lesser number of visitors have been recorded in Beppu park compared to other two facilities.

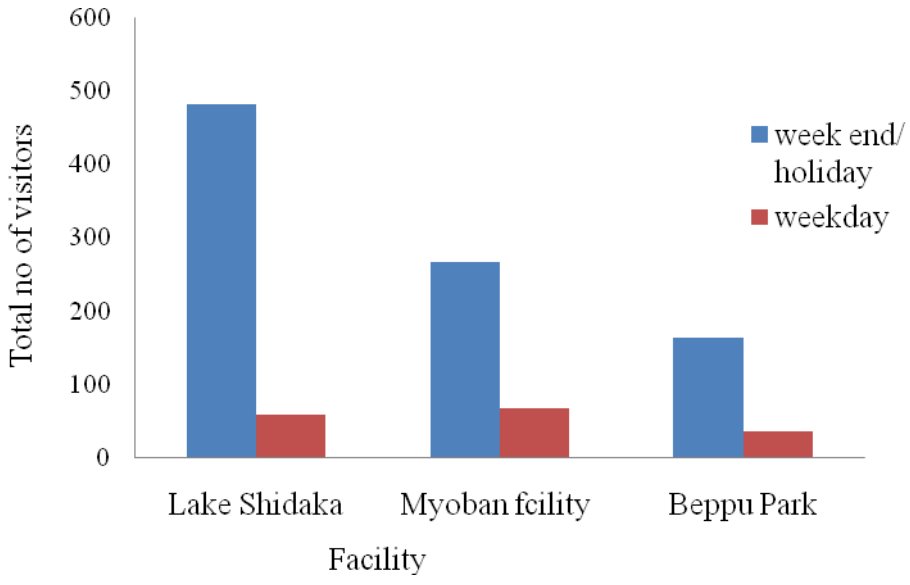


Figure 5.1.The total visitor counts in peak hours

5.1.2 *Presence of visitors as per peripheral distances*

Most of the visitors (72%) to Lake Shidaka were from more than 2km distance and no visitors were recorded from less than 250m distances. Most of the visitors (34%) to Myoban were from 1km to 2km peripheral distances and in Beppu park they were from 250m to less than 1km distances (58%). In Myoban some a similar percentage of visitors (24%) were recorded from 250m to less than 1km and from more than 2km distances (Fig.5.2).

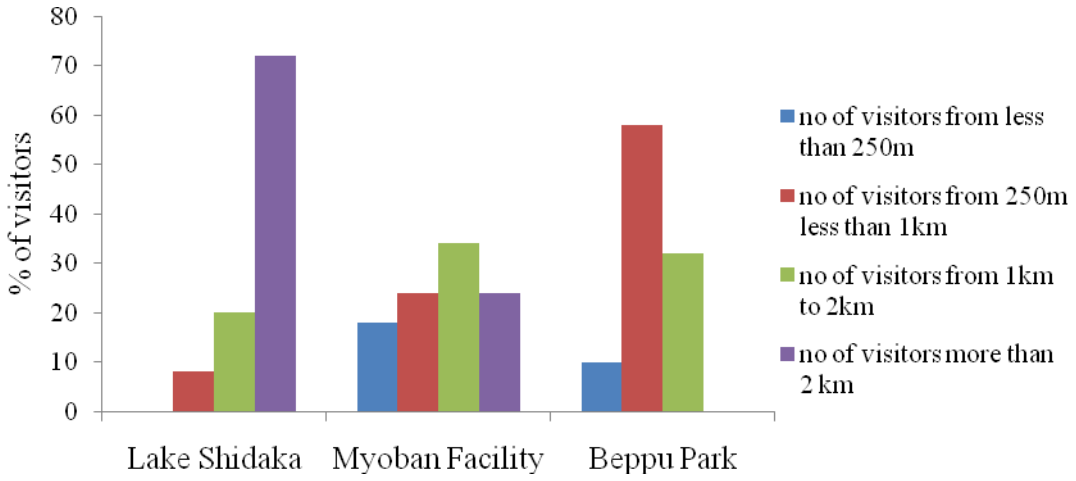


Figure 5.2. The percentage of visitors as per peripheral distances

5.1.3 *The visitors' stay length*

As per the Fig.5.3 in Lake Shidaka most visitors (94%) stayed for 2 hours to 5 hours. In Myoban and Beppu park most visitors spent less than 2 hours. Only a few percentage individuals (2%) visited Lake Shidaka tend to leave spending less than 2 hours. From the 3 facilities concerned long stay periods (more than 5 hours) were recorded only for Lake Shidaka.

5.1.4 *The visitosr' group size*

Most frequent visitor group size in Lake Shidaka and Beppu park were 3 to 10 individual groups while 2 persons groups were the most common group

size in Myoban complex. Large group (> 20 individuals) size was only recorded in Lake Shdaka. Mostly single individuals (38%) visit Beppu park and couples (48%) in Beppu park. Singles and couples were rarely seen (2%) in Lake Shidaka. 3 major visitor group sizes showed comparatively similar percentage of occurrence in Beppu Park (Fig.5.4).

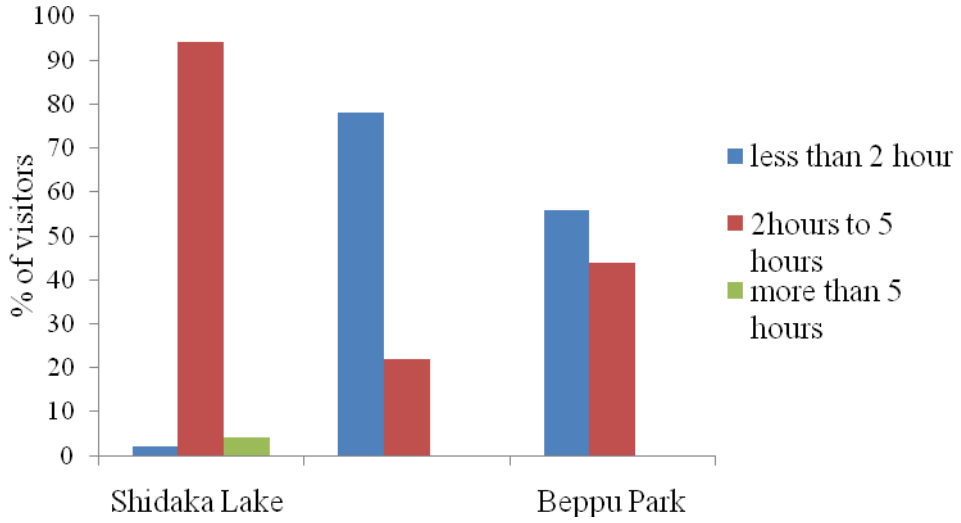


Figure 5.3. The stay length of visitors

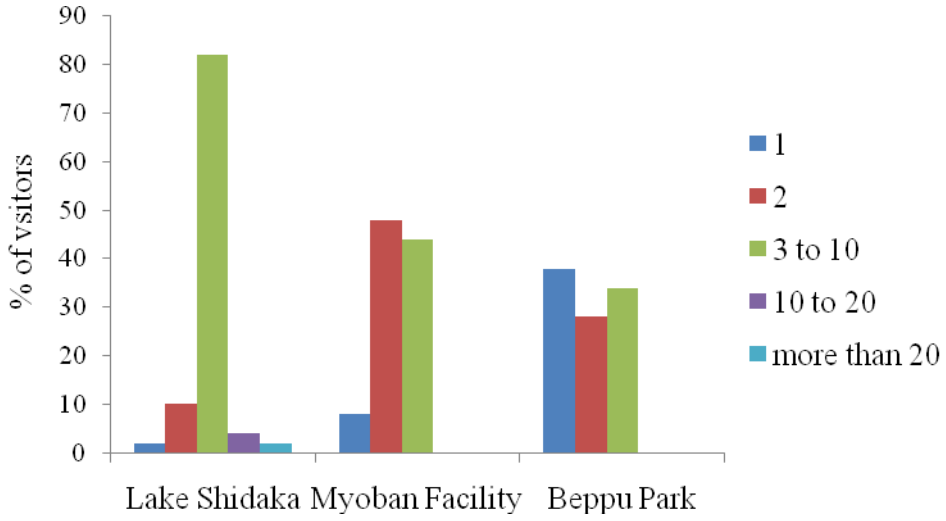


Figure 5.4. The visitor group sizes

5.1.5 *Visitors classified by gender*

Higher numbers of male visitors were recorded both in Myoban complex and in Beppu park while female numbers were higher in Lake Shidaka. Comparatively a similar total number of male and females were present in the facilities representing a male: female sex ratio of 1: 1.07 (Fig.5.5).

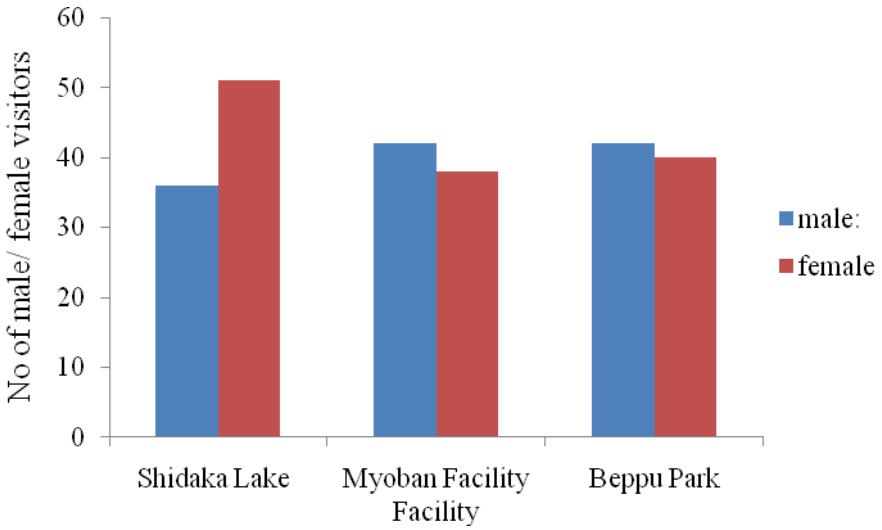


Figure 5.5. Visitors classified by gender

5.1.6 *Visitors classified by age groups*

The group of the infants and over 55 years of age category were the least recorded age group categories in Lake Shidaka, and in Myoban complex. The presence of over 55 year age group was comparatively higher (30%) in Beppu Park than in two other facilities. The working age group dominated in Myoban and the school age category was the prominent age group in Shidaka Lake and in Beppu Park (Fig.5.6).

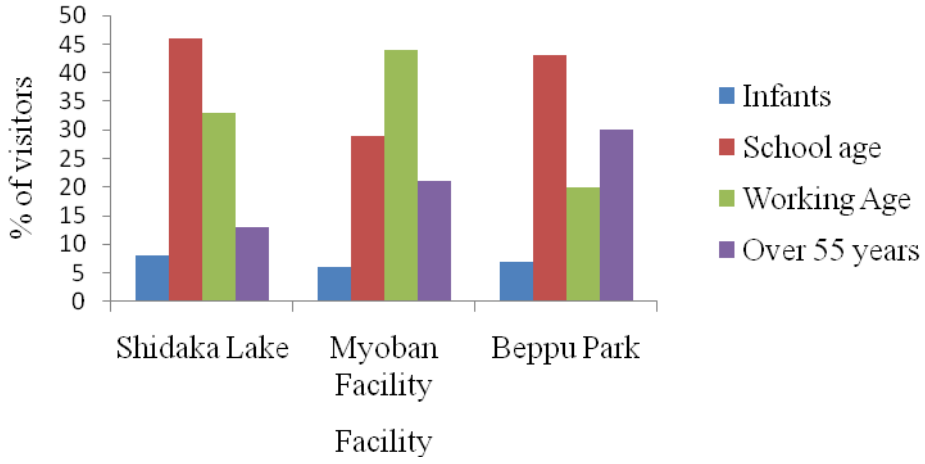


Figure 5.6. Visitors classified by age groups

5.2 In-depth analysis of the case studies in Lake Shidaka, Beppu park, Myoban complex

5.2.1 Case 01 : Lake Shidaka

5.2.1.1 Visitor Perception

The most appreciated qualities of Lake Shidaka

Most of the visitors (49%) responded that they visited Lake Shidaka because of its natural environment. Openness and quietness have been appreciated by (42%) of the individuals (Fig.5.7).

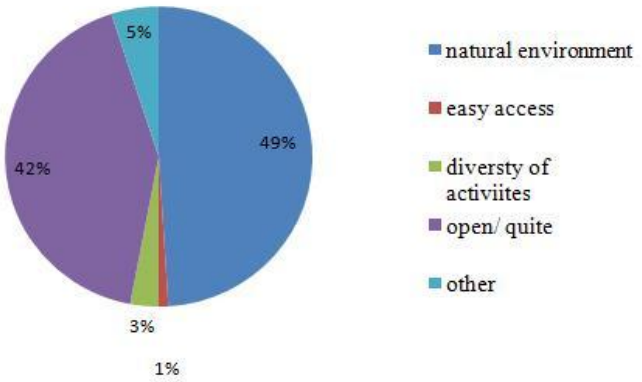


Figure 5.7. The most appreciated qualities in Lake Shidaka

The adequacy of basic infrastructure facilities in Lake Shidaka

Considerable number of visitors (30%) stated that the infrastructure in Lake Shidaka was maximum, and (68%) have reported that it was adequate. Only 2% of the visitors mentioned that the infrastructure facilities were maintained at a minimum level. No facility has been complained for the maintenance of excess infrastructure facilities (Fig.5.8).

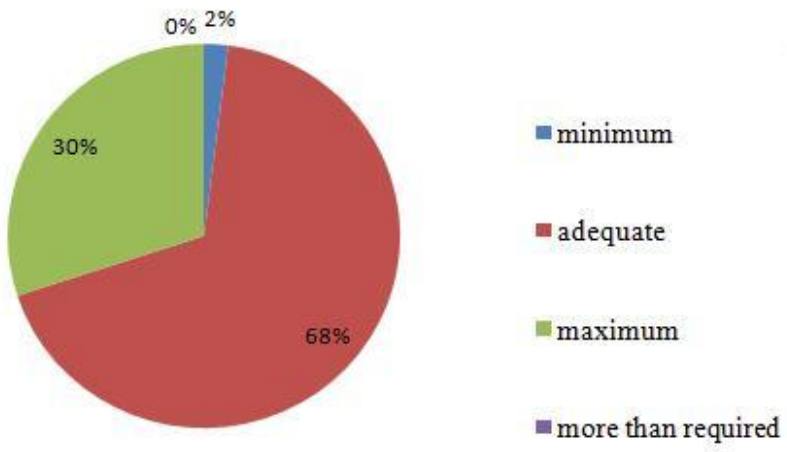


Figure 5.8. The adequacy of basic infrastructure facilities in Lake Shidaka

The adequacy of staff assistance provided in Lake Shidaka

In Lake Shidaka large percentage of visitors (64%) had no comments and 12% of the visitors were satisfied with the staff assistance provided in the facility. A considerable number of visitors (24%) were not satisfied with the staff assistance available in the facility (Fig.5.9).

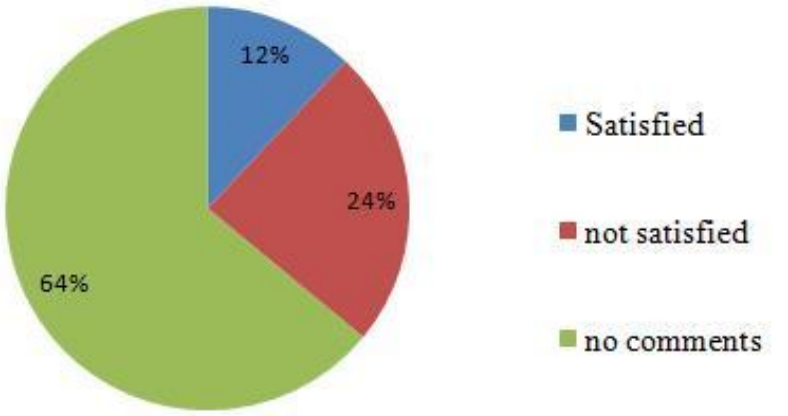


Figure 5.9. The staff assistance provided in Lake Shidaka

Adequacy of information boards and sign boards in Lake Shidaka

90% of the visitors at Lake Shidaka were satisfied with the availability of information and sign boards in the premises, while 6% had no comments in this regard. 4% of the visitors were in the opinion that the available information and sign boards were not adequate (Fig.5.10).

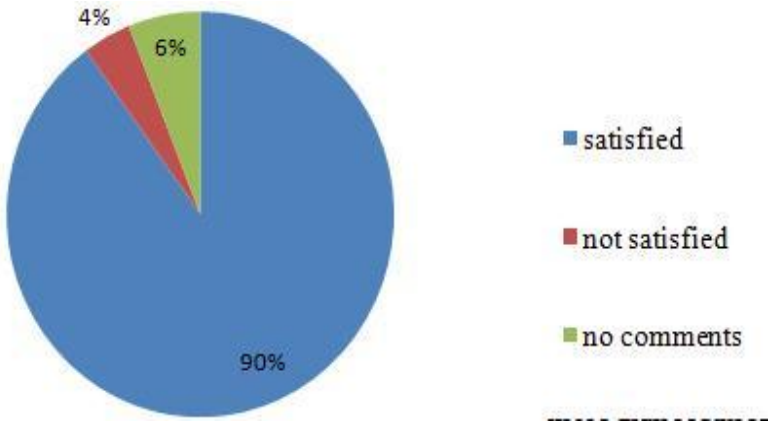


Figure 5.10. The adequacy of information boards and sign boards in Lake Shidaka

5.2.1.2 Selected performance indicators for Lake Shidaka

The frequency of visiting, Lake Shidaka

Most of the visitors (59%) to Lake Shidaka were visiting the facility for the first time. There was a considerable percentage (35%) of visitors who visited Lake Shidaka twice or thrice, but very few percentages 4% and 2% of the visitors have visited the facility for 3 to 4 times and more than 5 times respectively(Fig.5.11).

The level of visitor satisfaction, Lake Shidaka

A maximum visitor satisfactory level was recorded from 88% of the visitors while a 12% of the visitors stated that their satisfactory level was in an average level. No responses for the minimum level of satisfaction (Fig. 5.12).

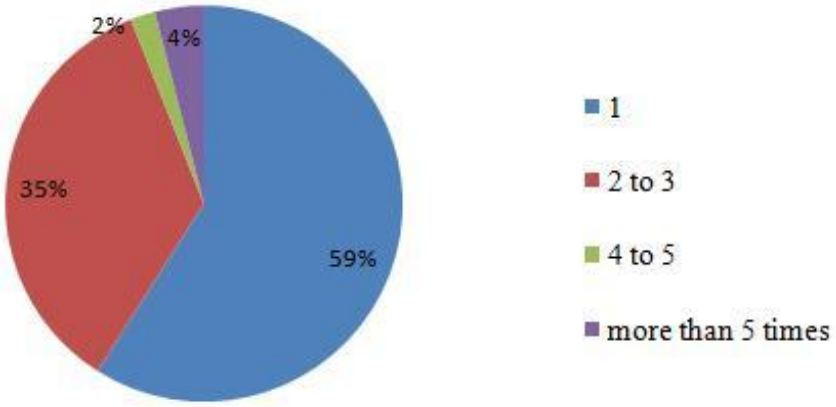


Figure 5.11. The frequency of visiting, Lake Shidaka

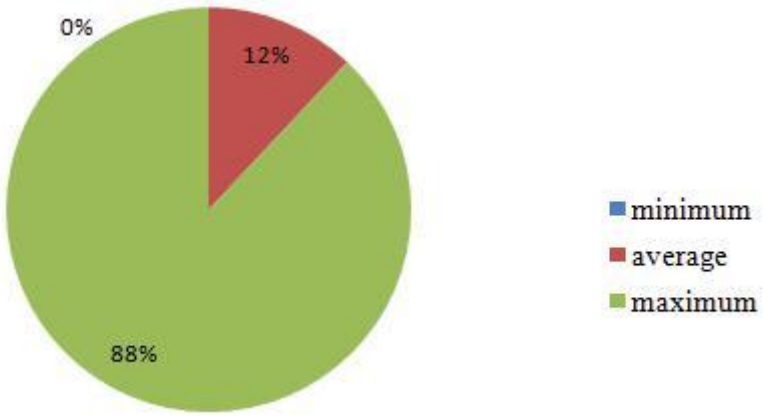


Figure 5.12. The level of visitor satisfaction, Lake Shidaka

5.2.1.3 Concerns towards development of Lake Shidaka

The difficulties encountered in Lake Shidaka

The most common inconvenience factor mentioned in Lake Shidaka was over crowding (26%) followed by safety (8%) concerns in boat rides. Poor maintenance was recorded by 2% (Fig.4.13). No any other difficulties encountered or complains were for noise as a hindrance were stated by the visitors surveyed.

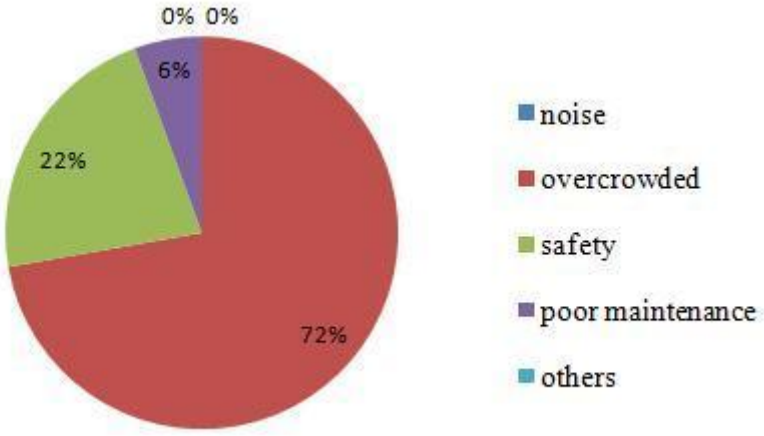


Figure 5.13. The difficulties encountered, Lake Shidaka

Suggestions for Lake Shidaka

As per the expectations of the visitors in Lake Shidaka, 48% of the visitors would like to have more diversified recreation opportunities. 22% of the visitors wanted to have awareness creation programs especially on environmental concerns. Among the prioritized suggestions for the facility 4% of the visitors would like to have participatory activities. The introduction of nature trails, more education activities to the facility were also among the prioritized activities suggested (Fig.5.14).

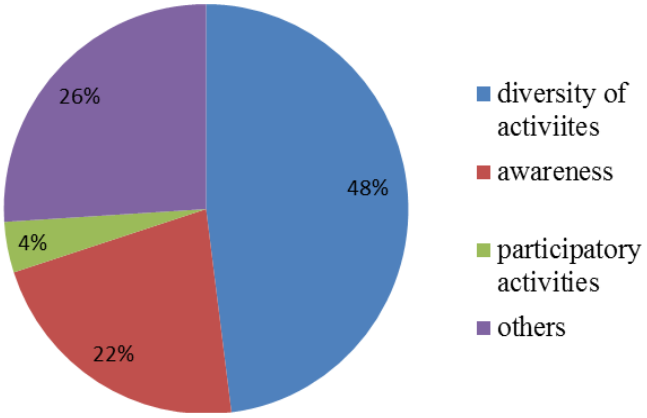


Figure 5.14. Suggestions for Lake Shidaka

5.2.1.4 Observations on the performance of Lake Shidaka

The landscape and the natural environment of the Lake premises was beautiful and attractive (Fig.5.15). Diversification of recreational activities in the premises has been achieved by providing the facilities mentioned below and in Tables 5.1 and 5.2. Some of these were paid recreational activities and were operating in harmony with natural environment and have been designed to gain economic benefits which would contribute to achieving the economic sustainability of the facility (Fig.5.16, 5.17, 5.18, 5.19).

Figure 5.15. The beautiful landscape of Lake Shidaka

Camping Facilities

Opening Period : April to October

Admission/ Charges : 310 Yen per individual, vehicle charges 410 Yen

Figure 5.16. The camping area

Boat Riding in the Lake

Table 5.1. Description on boating facilities

Type of the boat	Capacity	Duration (minutes)	Charges(Yen)
paddle	6 persons	30	1560
paddle	3 persons	30	1050
manual (2 types)	3 persons	30	510

Figure 5.17.Types of boats and boat riding in the Lake

The grassland areas in the vicinity have been properly managed (Fig.5.20). The young vegetation is managed and new trees have been planted to replace the old growths and to give the premises a more colorful and a picturesque view (Fig.5.21).

Figure 5.18. Fishes aggregating for feed by the visitors

The Barbecue Areas

Table 5.2. Description on barbecue facilities

Capacity	Number of units	Charges(Yen)
10 individuals	8	3000
20 individuals	2	4000

Figure 5.19. The barbeque areas on the site

Figure 5.20. The grassland areas

Figure 5.21. The plantation programs

The premises has become more popular and memorable among both the adjacent communities and visitors from near by areas who especially visit the site for special events organized in the premises in different seasons. Hence other than the regular visitors the destination act as an important recreation site in Beppu city for the near by communities.

5.2.2 Case 02 : Beppu Park

5.2.2.1 Visitor Perception

The most appreciated qualities of Beppu park

Majority of the visitors responded that the most appreciated qualities in Beppu park was its openness and quietness (37%) and easy access (32%). Apart natural environment was also a concerning factor for (22%) of the individuals (Fig.5.22).

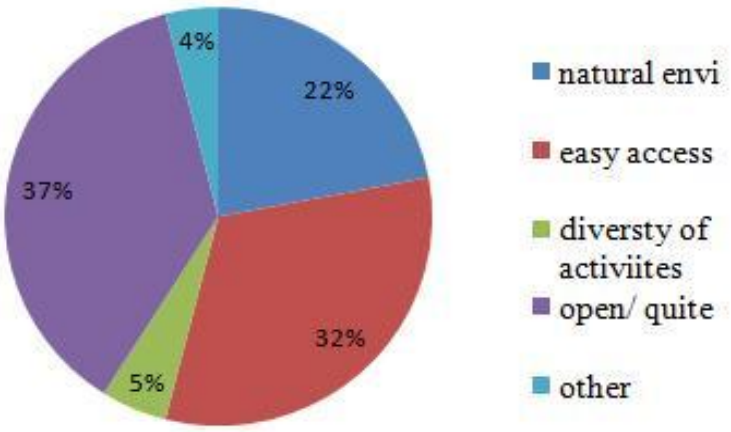


Figure 5.22. The most appreciated qualities of Beppu park

The adequacy of basic infrastructure facilities in Beppu Park

98% of the visitors in Beppu stated that the infrastructure facilities in the park was adequate. 2% reported that it was at a maximum level. No responses were obtained for the maintenance of minimum or of excess infrastructure facilities (Fig.5.23).

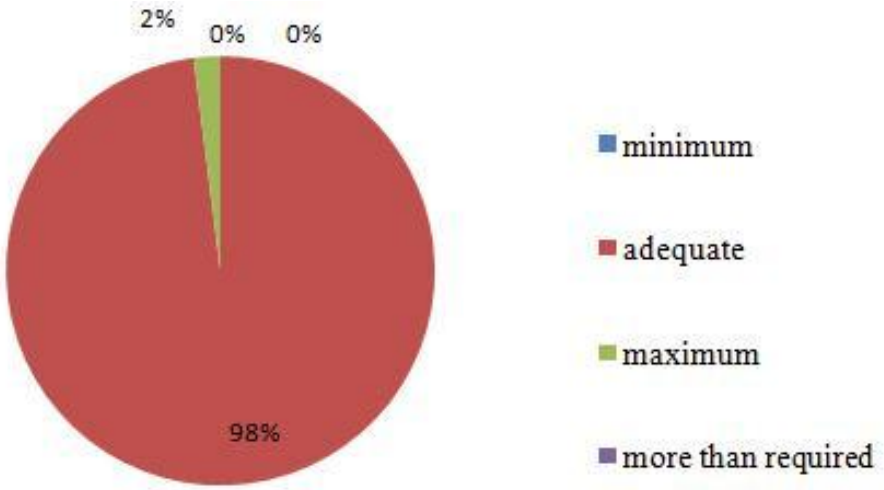


Figure 5.23. The adequacy of basic infrastructure facilities in Beppu park

Adequacy of information boards and sign boards in Beppu Park

In Beppu park large number of visitors (78 %) were satisfied with the availability of information and sign boards in the premises. 12% of the visitors have no comments in this regard , and 10% were not satisfied with the availability of information and sign boards within the facility (Fig.5.24) .

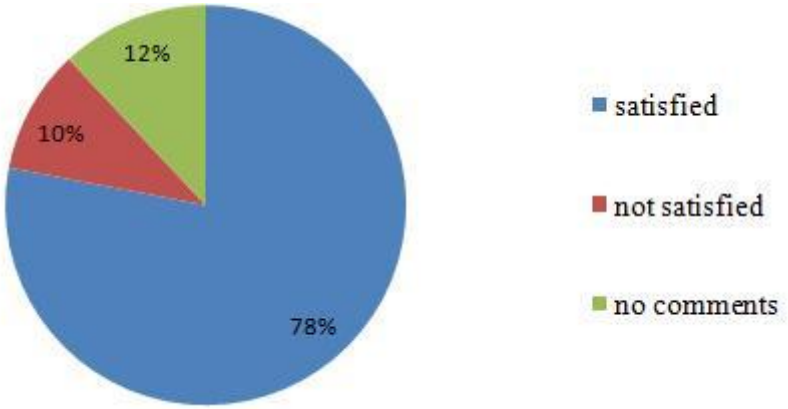


Figure 5.24. The adequacy of information boards and sign boards in Beppu park

The staff assistance provided in Beppu Park

In Beppu park, large percentage of visitors (78 %) has no comments on the staff assistance provided, 16% were satisfied with it and 6% of the visitors were not satisfied with the staff assistance provided in the facility (Fig.5.25).

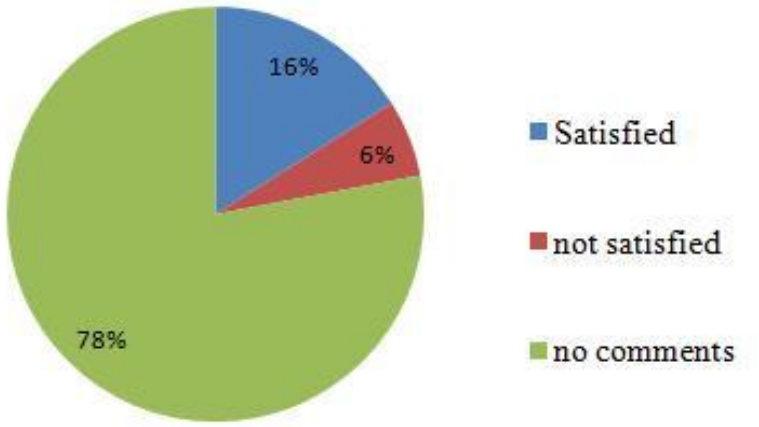


Figure 5.25. The staff assistance provided in Beppu park

5.2.2.2 Selected performance indicators for Beppu Park

The frequency of visiting Beppu park

Majority of the visitors (92%) to the Beppu park were seems to be regular or routine visitors. Very few visitations (8%) were 2 to 5 times visitors while no first time visitors were recorded during the survey (Fig.5.26).

The level of visitor satisfaction, Beppu Park

Most (74%) of the visitors' level of satisfaction towards Beppu park were on an average level. A maximum visitor satisfaction level was recorded by 26% of the visitors. A minimum level of satisfaction was not recorded by any visitors (Fig.5.27).

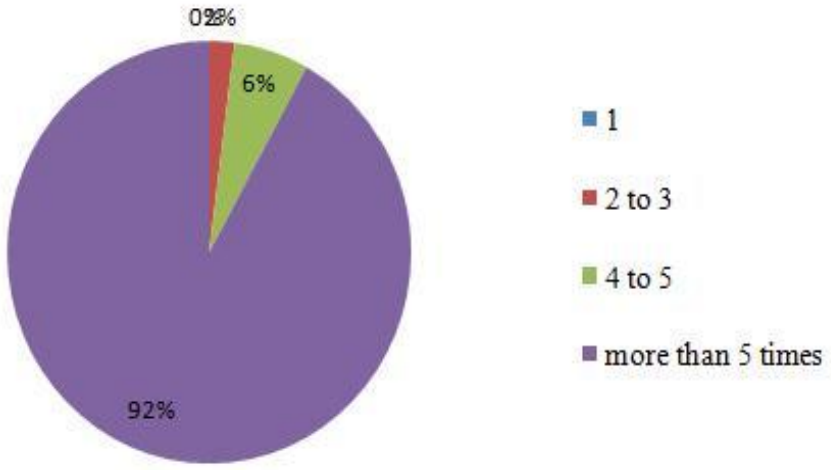


Figure 5.26. The frequency of visiting Beppu park

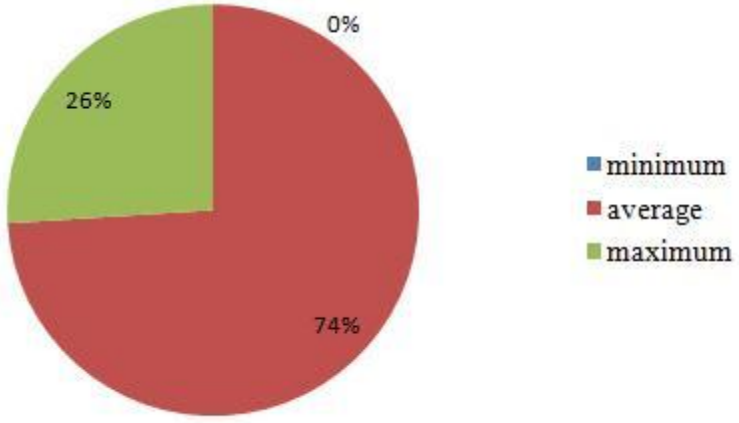


Figure 5.27. The level of visitor satisfaction, Beppu park

5.2.2.3 Concerns towards development of Beppu Park

The difficulties encountered in Beppu park

In Beppu park, 71% of the visitors has not specifically mentioned on the difficulties regarding the facility other than the absence of a kids play area, and unavailability of refreshment outlets. Safety concerns and congestion were not the priority concerns at all, while 19% of the visitors recorded the park for its poor maintenance and 10% for the inconvenient noise levels (Fig.5.28).

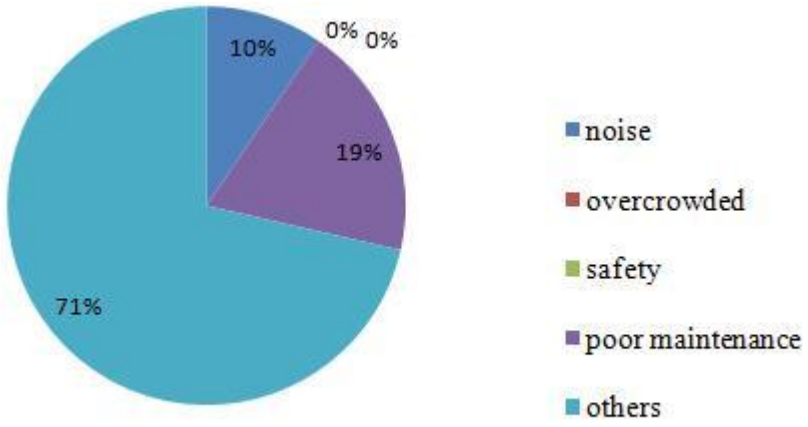


Figure 5.28. The difficulties encountered in Beppu park

Suggestions for Beppu Park

Figure 5.29 describes that 48% of the visitors expected more diversified recreation opportunities in Beppu Park. 16% of the expectations of the visitors were to have more participatory awareness activities. The kids play areas, refreshment facilities, planting of more attractive plants species which exists in all seasons, replacement of

over mature trees in some areas of the park were among the prioritized suggestions for Beppu park.

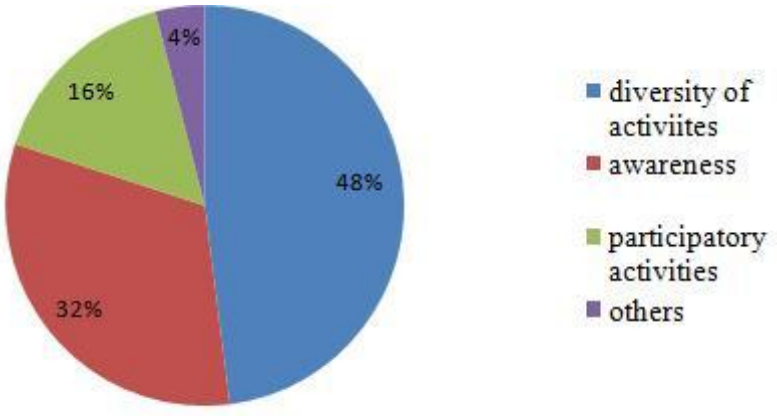


Figure 5.29. Suggestions for Beppu Park

5.2.2.4 Observations on performance of Beppu Park

The park was with a peaceful environment (Fig.5.30), beautiful scenery and different types of landscapes (Fig.5.31) and located in the mid of Beppu city is really serving as a symbolic park in Beppu. The park was a relaxing a patch of land for different categories of leisure seekers (Fig.5.32).

Figure 5.30. Beppu park with a peaceful environment

Figure 5.31. Different types of landscapes; grass land, patch of bamboo plantations

The arrangements at the entrance (Fig.5.33) could be used for different purposes; group gatherings, different types of performances. The name board on the trees could rarely be found to give an identity for the trees could be used as an educational tool for the general public (Fig.5.34). The old plants were given due care for its long

term survival (Fig.5.35). The park maintenance activities (Fig.5.36, 5.37) were on satisfactory schedules as per the observations at the field visits.

Figure 5.32. Different categories of Beppu park users

The people in Beppu and near by areas will never miss the cherry blossom season with tulips and the Umi flowering seasons in which the park appears in a renewed state and most colourful appearance (Fig.5.38).

The most popular annual events held at the premises attract large crowds other than the routine visitors to the park and these events would make the park more popular in the community (Fig.5.39).

Figure 5.33. Setup at Beppu park entrance

Figure 5.34. Giving identity to plant species

Figure 5.35. The supportive structures for old growths

Figure 5.36. The maintenance activities

Figure 5.37. Waste collection in peak season

Figure 5.38. The seasonal blossoms and colorations

Figure 5.39. "Sentomyo" in Beppu park

5.2.3 Case 03 : Myoban Complex

Myoban complex considered in this study included the Myoban onsen facility, the sight seeing area of "Yunohana" huts and the allied restaurant area.

5.2.3.1 Visitor Perception

The most appreciated qualities in Myoban complex

Myoban has mostly(49%) been appreciated for its easy access, while its natural sightseeing area has been appreciated by 23% of the visitors. 24% of the respondants highlighted the importance of health benefits, and easy stops on their way. The responses for the presence of diversified activities in the facility were at a minimum (4%) level (Fig.5.40).

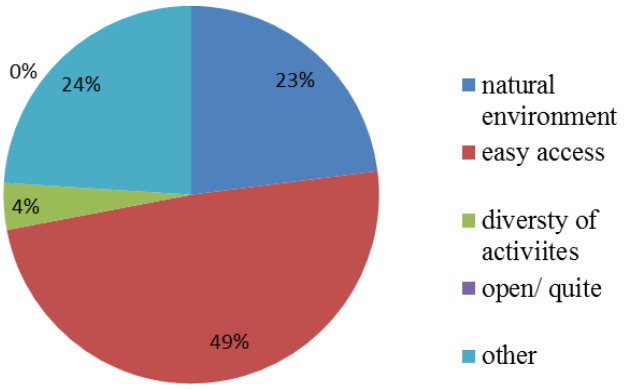


Figure 5.40. The most appreciated qualities in Myoban complex

The adequacy of infrastructure facilities in Myoban complex

More than half of the visitors (54%) responded for that the infrastructure facilities were adequate in Myoban complex**.** 42% visitors were on the view that of minimum

infrastructure facilities were maintained in the premises but only 4% of the respondents stated that the basic infrastructure maintained in the facility was at a minimum(Fig.5.41).

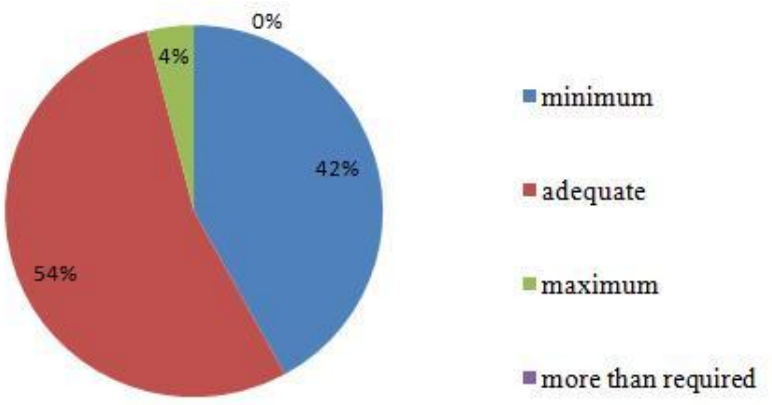


Figure 5.41. The adequacy of infrastructure facilities in Myoban complex

The staff assistance in Myoban complex

In Myoban complex most of the visitors (68%) were satisfied with the assistance provided by the staff especially within the restaurant areas (Fig 5.42).

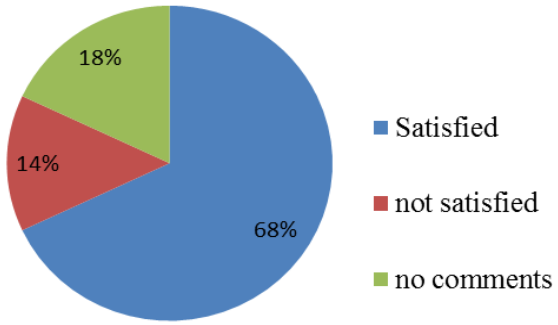


Figure 5.42. The staff assistance in Myoban complex

The adequacy of information boards and sign boards in Myoban complex

56% of the respondents had no comments for the adequacy of information and sign boards while 38% of the visitors were satisfied in this regard (Fig. 4.43).

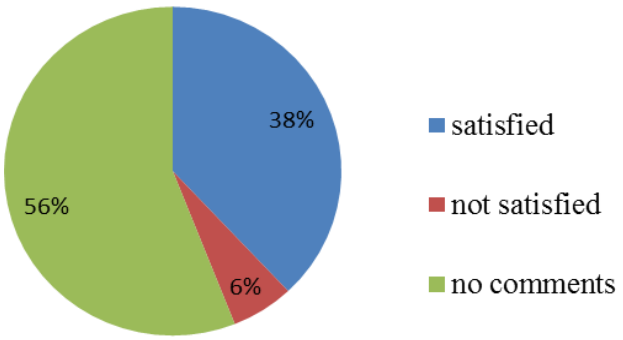


Figure 4.43. Adequacy of information boards and sign boards in Myoban complex

5.2.3.2 Selected performance indicators for Myoban complex

The frequency of visiting, Myoban complex

According to Fig. 5.44, Myoban has a similar number of visitors(34%) who visited the facility for 4 to 5 times and more than 5 times. 28% of the visitors have visited the facility for 2 to 3 times. Only very few (4%) were the first time visitations.

.

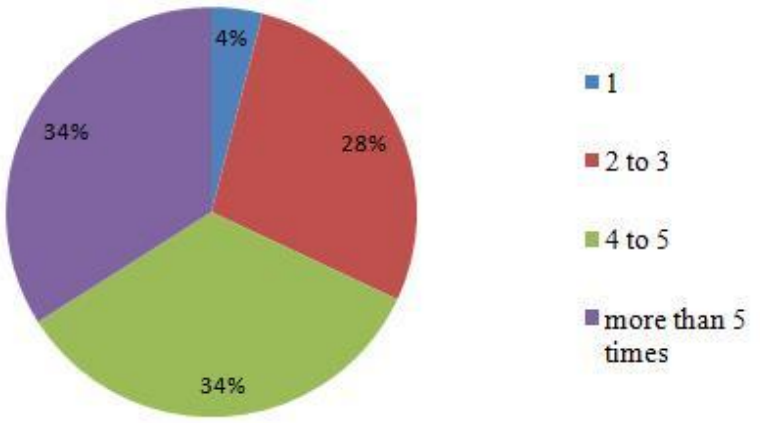


Figure 5.44. The frequency of visiting, Myoban complex

The level of satisfaction in Myoban complex

Almost 94% of the visitors in Myoban complex stated that their satisfactory level of visiting the facility was on an average level, while only 2% of the visitors were satisfied to a maximum level and 4% stated their satisfactory level of the visit to was at a minimum(Fig.5.45).

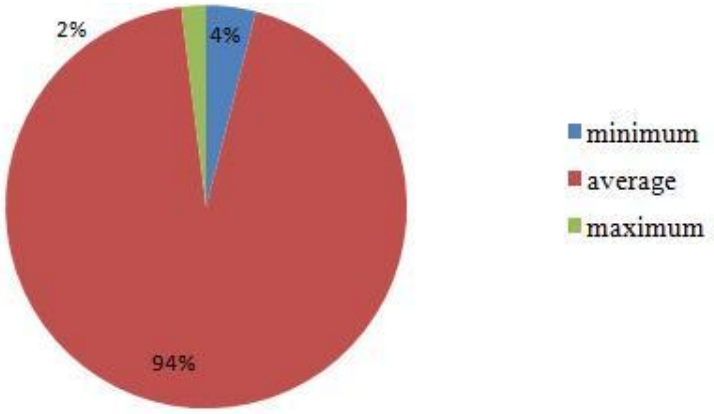


Figure 5.45. The level of satisfaction in Myoban complex

5.2.3.3 Concerns towards development of Myoban complex

The difficulties encountered in Myoban complex

The most recorded concerns (52%) on the difficulty in Myoban complex was the smell and smoke. (has been mentioned under other category of the answers). Over crowding was stated by 34% of the visitors while 4% complains were for the poor maintenance of the facility (Fig.5.46).

Suggestions for Myoban complex

The concerns on brown environment and development of seating facilities, providing adequate parking in the restaurant area were the most concerned factors to be considered in upgrading Myoban complex. Other aspects such as diversification of the activities (6%), awareness (4%) were of least concerns (Fig.5.47).

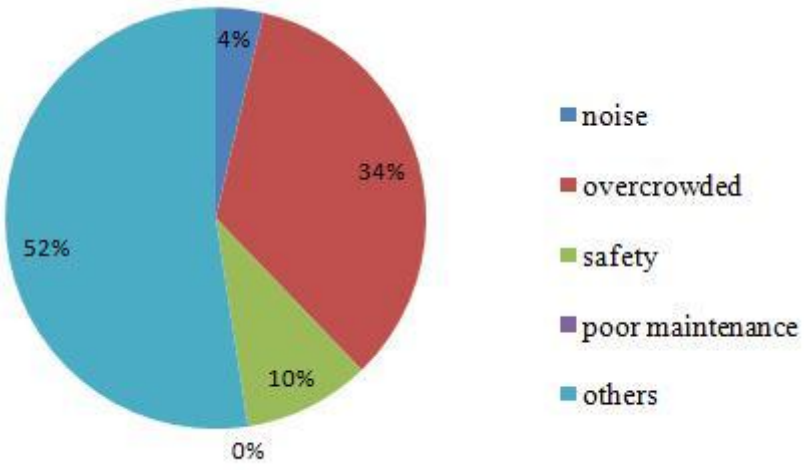


Figure 5.46. The difficulties encountered in Myoban complex

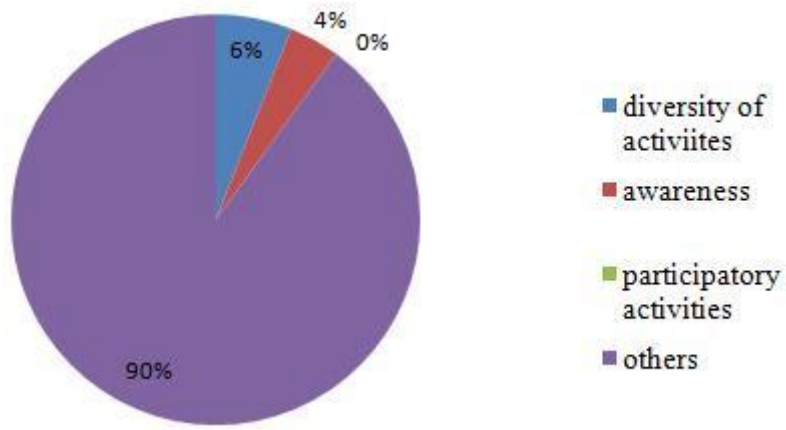


Figure 5.47. Suggestions for Myoban complex

5.2.3.4 Observations on performance of Myoban complex

The onsen facility has 2 bathing areas, one is for family baths, and the other is for common baths (Fig.4.48). The premises is having a sightseeing area with the Yunohana huts (Fig.4.49) for collecting a special product called "Yunohana" (Sulphur powder for onsen), looks wonderful because they are lined up in beautiful rows as yellowish Sulphur crystals along ditches and in side walls of the ditches (Fig.5.50).

Figure 5.48. The onsen facility of Myoban

The restaurant area was not that spacious enough to create a relaxing environment (Fig.5.51). The parking area was able to serve only for about 20-25 vehicles in the restaurant area, but as their rotation periods were smaller the situation has been controlled in an accepted level.

Figure 5.49. The “Yunohana” huts and sight seeing area

Figure 5.50. “Yunohana” huts and Sulphur crystals

Figure 4.51. The restaurant area of the Myoban complex

Energy was produced from geothermal activity was used in restaurants in special ovens, boiling utensils (Fig.5.52). Special types of food, puddings, yoghurt, boiled eggs, boiled yams and other vegetable types were being prepared which have a high demand at the premises. The smoke and the smell at the restaurant area is some what irritating and some may dislike such experiences (Fig. 5.53). The outside seating arrangements may not be suitable in such conditions.

Figure 5.52. Energy usage for different purposes in Myoban complex

Figure 5.53. The smoky environment in Myoban complex

5.4 General concerns of the visitors

5.4.1 The constraints in participating in outdoor recreation activities

Among the visitor statements the most common reason for not participation in out door recreation activities was the time constrains or inadequacy of time (38.6%). This was followed by the weather factor and the percentage responses were (27.6%). Similar percentages (16.9%) of visitors have mentioned that lack of money and unavailability of close by preferred recreation sites were also important (Fig.5.54).

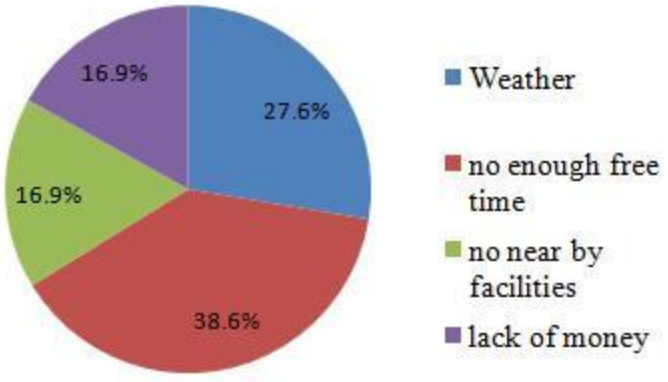


Figure 5.54. The constraints in participating in outdoor recreation activities

5.4.2 The visitors' preferences on recreation facilities

When inquired for the most preferred recreation facilities in Beppu, the highest visitor preferences (29.2%) was recorded for jigoku and onsen facilities. The popularity of other recreation facilities were, public parks (18.9%), amusement parks (20.9%), aquarium and safari parks (11.8%) among the individuals surveyed. The popularity of the National Parks and museums and art galleries were 3.5% and 6.4% respectively (Fig.5.55).

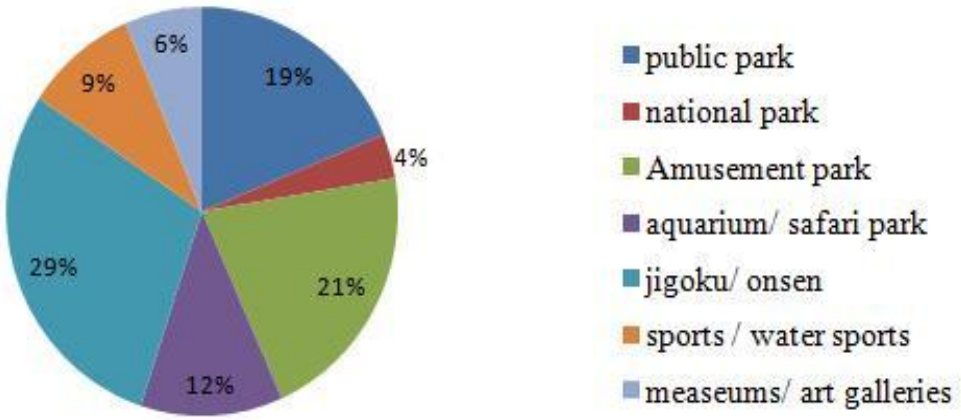


Figure 5.55. The visitors' preferences on recreation facilities

CHAPTER 6

DISCUSSION

Beppu is a unique tourism city that is famous for its hot spring resources attract 1.4 million both local and international visitors annually (Summary for Beppu City, 2010). Different types of recreational opportunities could be found in and around Beppu city contribute to fulfill different recreational needs of the city dwellers as well as of the people who visit the city for various purposes or solely for leisure and recreation purposes as tourists. A wide array of destinations from scenic view points, with least management concerns or involvement to built in facilities with technologically managed theme parks exist in Beppu. Such vicinities would provide opportunities for mental and physical relaxation and other recreational benefits.

6.1 The diversity of resource bases and recreation opportunities in and around Beppu

6.1.1 The diversity of resource bases and recreation experiences

Different types of recreation opportunities exist in Beppu. Outdoor recreation facilities as well as indoor recreational activities offer active as well as passive leisure opportunities. Developing of outdoor recreation facilities has been achieved by focusing on geographically available natural resource bases in Beppu, as a choice in developing multiple uses of other resources by built in facilities solely aimed at providing outdoor experiences. So that the maximum use of resource bases have been achieved while providing the community with a broad range of unique recreation opportunities.

Various types of indoor recreational facilities such as different types of hot springs, cultural places, museums, sports stadia, water sports opportunities, craft centers, social gathering and community welfare centers, gymnasia, shopping complexes, restaurants, spas, cinemas, amusement facilities are responsible in serving for the different types of recreation needs of the people in Beppu.

The forests and agricultural lands, mountain ranges, water courses, private dwellings and working places, street, temples and shrines which are not operating primarily for leisure also provide some outdoor recreation experiences.

The out door hot spring baths, the sand, mud, steam baths for leisure and health benefits, natural lakes, conservation areas for wilderness experiences, public parks, beach parks, sports facilities, bathing and swimming facilities, guided tours/nature trails for sightseeing and admiring nature, aquarium for aquatic world experiences, cultural and other festivals are some of the popular out door experiences that one could enjoy in this city. As such one could gain a broad range/spectrum of outdoor experiences. On the other hand these facilities offer various types of benefits such as physiological, psychological and social benefits as well (Leitner, M. & Leitner, S. 2004).

6.1.2 The admission charges

As the entrance fees to some of these outdoor recreation facilities such as public and beach parks, natural lakes are free the people can enjoy these vicinities at different choices at a least cost. The paid facilities may charge for the admission or all or for some selected activities operating within. So that such diversity in charges would affect differently to specific user groups, at specific periods according to their needs and according to individual's economic status.

6.1.3 The ownership

As different types of stakeholder institutions or hierarchies such as the national government, the local authority, private organizations, private individuals are responsible for the management or maintenance of the recreational facilities in Beppu , this type of diversification in ownership could contribute to broaden the outdoor recreation sector with more capacities, innovations, and to meet the recreation demand with maximum level of visitor satisfaction. Warzecha et al. (2001) has discussed such diversity as a contributing factor to broaden the scope of the outdoor recreation sector.

Various festivals and events organized in Beppu city mainly as cultural celebrations add different type of outdoor recreational background or chance for the near by community. The recreation opportunity spectrum (ROS) could be beneficial to broaden the diversity of the outdoor recreation programs, for managing and planning new opportunities in the city. On the other hand the recreation demand spectrum should also be coupled for better decision making and in designing various outdoor recreation opportunities.

The case study locations and the other outdoor recreation facilities concerned in the study are mainly focused on local tourism and serve for local leisure seekers. On the other hand Beppu being designated as the "World Therapeutic City", the development of the international ferry would attract most of the visitors from neighboring countries, and from other regions of Japan. Hence providing broad range of outdoor facilities in Beppu is essential to meet the recreation demands of such consumers. Further Cybriwsky(1999) said that the nature of recreation demand in cities is changing, with higher levels of environmental education, awareness, health and fitness programs and emergence hence more wide array of leisure activities with specialized equipment and facilities to meet such demands is needed. This also has stressed that it will be important to discover new opportunities or upgrade the existing facilities of outdoor recreation specially aligned with the ongoing Beppu development plans and coastal development plans and to meet the community's need. .

As the Beppu Bay is along the Beppu city more coastal outdoor recreation activities could be promoted. The diversification of water related activities such as fishing, boating etc. could be considered. The Water Recreation Opportunity Spectrum (WORS) users Guide Book (2007), the Indiana Statewide outdoor recreation plan 2006- 2010(Daniels & Carter 2006) could be studied to diversify the water resources based recreation and other outdoor recreation activities in Beppu. As Beppu is not a fully modernized industrial city, still the wilderness experiences and mountain climbing and nature trails activities could be designed and promoted with tour packages or as an integral part of community well fare development programs or including in school excursions and so on. Above all a sustainable plan for

diversifying the hot water geothermal springs related outdoor recreational activities which are unique to the city could be promoted in order to maximize their uses.

6.2 The performance of major outdoor recreation facilities in Beppu

6.2.1 The public and beach parks

A wide array of public, beach parks, sports parks classified by their types, sizes and locations situated in Beppu are able to serve the community in different capacities. The upgrading of the park net work in Beppu is underway at present under the new city development plan and would help to assure their long term viability in future and serve its people.

Some of the following considerations could be suggested for improving/ upgrading the parks network in Beppu city. The maintenance of an arboretum, plant nurseries, the stalls which sell fruit tree species, vegetable plants, seeding materials, compost, and the endemic plant species could encourage the planting behavior and promote gardening practices among the general public.

The display of name boards on mature trees in parks that educate the general public specially the younger generations and build interests on plant related studies and on plant taxonomical studies. The maintenance of ornamental fish tanks, pond areas, growing of aquatic plants would attract more visitors to the park premises. Although such additions would require extra labor and maintenance costs the diversification of activities in the park vicinities would contribute to upgrade the community well being and would be advantageous for making the premises more popular.

The fresh fruit outlets, food stalls providing opportunities to sell home based products in the premises would attract more people. The local small scale industrial and home based products such as hand made toys, ornaments could be promoted in such outlets or in temporary built up layouts maintained in the premises. Such promotion activities could be scheduled and be advertised through various channels to attract the customers.

The pruning schedules and replacement of old growths in the parks and replacement with younger plants would be essential. The school children could be directed to these outdoor classrooms of nature for field studies. Conducting of local community events, adult awareness campaigns, health programmes such as yoga based on these park premises would attract more people to them.

The parks and recreation development plan (PORS consulting, 2009) mentioned in the literature review could be incorporated and integrated with Beppu city development plans to develop comprehensive park management plans for Beppu city.

6.2.2 Kintetsu Ropeway

The rope way in Beppu is performing well and it could be considered as a form of forest recreation. The techniques of herbarium collections, preservation of plant materials, small animal preservation techniques, forest ecology, behavioral studies on wild life, ornamental fish culture are some of the related components that could be added/ incorporated into the promoting agendas of the facility. Conducting environmental education programs, school children awareness would be beneficial to create a conservation oriented future generations.

Planning for more diverse forest recreation opportunities, promote research extension and assistances programs could be designed for the nearby nature reserve in the foot of Mount Tsurumi based on the established rope way facility would be beneficial for conserving the environment in Beppu.

6.2.3 African Safari Park

African safari park is an anthropocentric leisure facility which gives an excitement with free roaming wild animals from Kenya. Although it has adopted some measures for the wellbeing of the animals it is a challenging task to maintain this wild stock in an environment that is different from their natural habitat in the long term.

Although some of the activities are very exciting, adopting and offering some of them would need to be reconsidered in a broader scope. The practice of

offering food for the animals from the jungle buses would disturb the normal behavioral patterns of the animals and would affect their survival in the long run. Thus encouraging this type of forced behavior would not enable to observe their natural behavioral patterns which are quite interesting and unique in the long term. Hence the final goal of visiting this type of a facility to experience such curious behaviors of the wild animals could not be achieved.

Some habitat enrichment programs would be important for making available adequate fodder, shelter and making the animal inhabiting area more productive, alive and more attractive. There should be programs to replace the old growth trees and the trees debarked which are partially damaged by the animal. The habitat improvements in this plot of land with minimum human interferences would contribute to increase the other faunal and floral diversity as well and serve in conserving the bio diversity aspects which is an important concern at present. In such an attempts introducing of rare indigenous and threatened species should be prioritized.

It should be accepted that the living and body conditions of the animals living in a different land to that of their native lands could be relatively be inferior. Some animals show good body conditions while some were having skin problems and were in some what weak body conditions. These unsatisfactory conditions were some times observed differently specially with the seasonal changes of the year. Continuous health monitoring and nutritional assessments are beneficial for keeping a healthy wild stock of animals.

The camping experience is an extension of diversifying the activities. The night safari allowed in summer, where very warm conditions prevail is a good management decision to attract visitors all the year around.

The facility has by all means has tried to maximize their economic returns while giving maximum opportunities for being in a world of wild and pet animals. Such diversification techniques could be replicated based on the resources any where is a very positive approach in developing any destination while maximizing the economic benefits.

The African gift products shops operating in the facility is a good way of channeling the incomes from them to the poorer communities towards or the product originated land. On the other hand this facility would stimulate or promote the Japanese people's willingness to experience the true wildlife experiences in African countries.

6.2.4 Umitamago(The Aquarium)

The aquarium attracts large number of visitors to observe the aquatic world. The animal performances are many and are on schedules. They are very attractive and are conducted with maximum level of interactions of the observers. The animals' rights that have been discussed by different groups in relation to the species that are used for performances are really noteworthy in this regard. Although such performances give maximum joy to the viewers the animal well being in the long term is really questionable.

Very responsible and trained employees to carry out the specified tasks, to conduct animal performances, the enthusiasm shown in carrying out their assigned tasks, the specialization of labor as well enable providing an efficient and effective high level of service to the customers and contribute to operate the facility in high standards which would ultimately lead to the sustainability of the facility .

Generally the space allocated to the animals especially the giant sharks, sea lions, walruses; dolphins who are kept in limited space in large glass tanks are some what pathetic.

The animal care manuals provided by the Association for Zoos and Aquariums provides a compilation of animal care and management knowledge which describes the best practices for caring for ex situ animal populations based on most current science, practices, and technologies used in animal care and management should be practiced to ensure the facility's long term popularity and survival.

Conducting visitor and public researches to gain a better understanding of how visits to zoos / aquariums are interpreted & valued, the conservation attitudes,

& to determine what general public views as conservation priorities are important for the long term sustainability of these facilities.

The accreditation standards and processes introduced to meet the standards for animal management and care, including living environments, social groupings, health, and nutrition would be important. As institutions that have contact areas with animals and maintaining animal stocks should thoroughly be adhered to the best management practices animal collection, protection for the animals, conservation, education and interpretation, research, and adopting safety measures for the visiting public, adopted by the governing authorities and international agencies the management of the facility should paid attention to these aspects as well.

6.2.5 Takasakiyama Monkey Park

Mt Takasaki park area links the people with nature and provides outdoor recreational opportunities. Thus declaring Mt. Takasaki conservation area plays a vital role in eco system conservation aspects in an urbanized area, contribute to preserve country's biological diversity, preserve the landscape and providing outdoor recreation opportunities as well. Hence Takasakiyama Park could be considered as a multiple use recreational facility as it matches the conservation as well as the recreational needs of the communities. Such approaches have been discussed in the literature emphasize the importance of maximizing the resource uses without hindering the ultimate objective or target of the facilities (Pigram et al, 2006). Although the anthropocentric recreational attitudes dominate in the recreational facility, serving the monkey populations to be in their natural environment and maintain them within with high management care should be appreciated.

The museum attached to the facility adds more value to the destination. The photo catalogues maintained on the dominant animals in the park for many years, the studies on their life history patterns, morphological, behavioral changes, and group compositions are valuable and very explanatory. Such studies could even be used for further researches, determining the carrying capacities and improve the welfare facilities of the animals in the premises. The provisions of hot chimneys in

winter season and maintaining other welfare activities speaks on the high concerns of the management towards the animal welfare aspects.

The use of multifactor analysis to determine the most suitable and attracting recreation sites of the park, zoning of the nature reserve to define specific areas for protection such as core conservation zones, zones with limited access and buffer zones with more intensive use for visitor facilities have been suggested in the literature (Oruru, Kamil & Oznur, 2006), could be advantageous in improving the facility. The studies on impact of visitors on the environment and towards the animals, studies on their behavioral changes would be interesting. Species counts in the nature reserves can be carried out for monitoring processes. More comprehensive recreation management plans, recreational suitability zones maps could be prepared in future planning efforts.

Engaging in outdoor recreation within forests tends to build support among visitors for protecting and managing these forests, and indirectly building support for the sustainability of the forest lands. The outdoor recreational experiences which obtained from visiting fragile sites to observe or study the species and ecosystems enhances learning about environments and bring down the risks of damages to them in future. Apart these areas could be used as outdoor classrooms so that the school excursions, field assignments could be targeted for the site.

These outdoor recreational activities are increasingly important as sources of employment and local income generation which would enhance and assure the economic sustainability of the facility.

6.2.6 Jigoku Facilities

The geothermal green houses discussed in Lienau, 1996 could be replicated in hot spring and jigoku areas in Beppu in order to maximize their geothermal energy usages. The complains for ignoring the welfare of animals on display in some jigoku areas were came out during the discussions.(Iguchi, pers. comm , 2011 November). Such issues should wisely be handled for the existance of the facility with additional attractions in the long run.

6.3 General comparison of the visitor profiles of Lake Shidaka, Beppu Park, Myoban complex

6.3.1 The total visitor counts

The total number of visitors recorded for a peak three hour period showed that the recreational facility usage in weekends and in holidays with more free time was higher than in weekdays. This is related with the findings of the survey in which the time constrain was mentioned as the major factor for not participating in out door recreational activities.

The more visitors in Lake Shidaka compared to other two case study sites could be explained by the Lake's popularity among the people as a famous unique recreation destination in Beppu. The high number of regular visitors in weekdays in Myoban could be related to its location which is in an easy access where the passengers can stop for a while in their drives. Some what a similar number of users both in weekdays and in week ends or holidays in Beppu park could be explained by it's significance as a routine leisure site to the near by communities.

Monitoring visitor use is a key part in helping to determine whether the stated goals and objectives of a destination is being achieved (WTO 2004). As such the identifies of visitor use information such as total number of visitors, number of vehicles parked, visitor counts to specific sites, number of visitors and vehicles at different seasons, vehicle traffic flow patterns would need to be considered for providing better management. These measurements on the other hand would serve as indicators to manage visitations and its effects (WTO, 2004). Further the results of the total visitor counts are important for resource allocation and planning of these sites as well. Further the degree of seasonality and various other factors such as the geographical concentration of the visitors, accessibility of specific sites, the limits of acceptable change and carrying capacity related to visitations can be investigated with particular research design frameworks which capture the dynamic nature of visitation and could subsequently be useful in planning and management of the destinations performances.

6.3.2 The presence of visitors as per peripheral distances

In Lake Shidaka the recreation demand was more from distance places (more than 2km). In such situations the accessibility and modes of transportation will be of more relevant concerns. The directions or availability of sign boards from main routes will be more important and be useful.

This situation is some what different in Beppu park, where the demand is mostly from near by neighborhoods. Easy accessibility, the circulation patterns of user groups are important fundamental concerns for determining the equity of recreational provisions within an urban recreation space. Burgess et al., 1988; Pincetl et al., 2003 showed that people to the urban parks are said to come mostly from nearby distances thus supporting the results of the visitor analysis on peripheral distances in Beppu park.

The study of Pincetl et al., 2003 also showed that the accessibility to residents as measured by ¼ mile radius indicating walking distance could be taken into consideration to identify the most park poor parts of the city and would be helpful in determining how to provide of additional nature's services is in urban areas. The urban park area in Japan is approximately 8.1m^2 as per a survey carried out in 2001(Stener, 2010). Hence such survey results could be compared with the Beppy city individual per capita park statistics of 7.15m^2 (table on park statistics provided by the park management division of city office, Beppu) to identify the future needs of Beppu city. Further the people who use public transport services and as such services are limited especially in holidays or weekends where there is a high recreation demand exist suggests that many city dwellers are denied access to park and recreation facilities beyond walking distances. In these circumstances again, the provision of close- to home recreation opportunities is said to be essential.

Myoban is attracting neighborhood visitors as well as the passers by other than the small number of visitors who visit the premises from long distances. In such situations the designing of resting facilities, quick serving refreshment outlets, provisions for delivering fast food items may be important.

6.3.3 The visitors' stay length

The people visit Lake Shidaka in their day trips comparatively from far away places may tend to spent 2 hours to 5 hours for spenting their day in the facility while some may remain even for longer periods (more than 5 hrs) in the Lake site. In such cases provision of different types of recreational activities within the premises would enable to keep more visitors for longer periods of time while providing maximum satisfaction and joy from their visits. The short duration visits of less than 2 hours at Beppu park and Myoban imply that the people visit those two places may not expect the presence of diverse activities rather identification of the exact or major demanding factors will assure the long term popularity of the premises.

The investigations of the present study on different perspectives related to visitor profiles such as visitations according to their peripheral distances, the visitor group sizes occurrences, the average length of their stays, sex and age considerations are important when serving the different niches of people in the society and in planning and management of these facilities to supply their recreation demands efficiently.

6.3.4 The group sizes of visitors

The most common group size recorded in all 3 facilities were 3 to 10 individuals which may consist basically of the basic family unit , the mother , father and a child and some members of the extended family. As the three case study areas are mostly places of local leisure seekers and local tourism, large group tours of about more than 20 personel may not have been recorded at higher percentages during the study. Singles or couples just come for leisure walks or simple exercises or who stop on their travelling dominated Beppu park and in Myoban facilities.

The designing of facilities such as parking, rest rooms and provision of group activities to cater the needs of the medium sized visitor groups would be some of the factors to be considered when planning for group sizes. The adherence to rules and accepted behavior patterns would be some what altered or challenging

especially when the visitors are in groups. Such situations may need additional care to manage and control them.

6.3.5 The visitors classified by gender

The gender representation figures showed that Myoban and Beppu Park is dominated by males while the female representation is somewhat higher in Lake Shidaka. But the 1: 1.07 ratio of male to females during the surveys suggest that an equal opportunity to both males and females to access the said facilities. Although the female participation in leisure activities were said to be limited by numerous factors such as house duties, children caring, personal safety and other socio cultural factors, the development of alternative facilities to lessen the burden of household activities has persuaded women to seek leisure activities at higher levels than in the past (Henderson, 1994a, 1994b; Jackson & Henderson, 1995; Horna, 1991).

6.3.6 The visitors classified by age categories

The higher representations of school aged group and working age groups suggest that the provisions of the outdoor leisure facilities should be more targeted and concentrated on such age categories.

Incorporating different factors that determine the recreational needs of the special groups such as women, youth and adolescents, children, elderly, people with disabilities in providing leisure facilities has been discussed in the literature (Veal, 2002; Pigram et al., 2006).

Cybriwsky, 1999 has discussed that the pressures on urban recreation landscapes come from number of directions. He stressed that as the recreation facilities will attract the socially disadvantaged; the poor, the homeless, the transients, the unemployed and disabled apart from averting conflicts with other uses, it is challenging to develop programs which encourage the disadvantaged to use the recreation space more constructively.

6.4 The visitors' perceptions in Lake Shidaka, Beppu Park and Myoban complex

Perceptions are mental impressions and are determined by many factors, which include childhood, family, work experiences, education, books, mass media, promotional images (Cooper et al., 2008; Williums & Roggenbuck, 1989).

One of the most persuasive issues is to find out the trends and tastes in leisure and outdoor recreation (Pigram & Jenkins, 2008). The problem of matching potential demand to the supply of recreation space means that quality and satisfaction in this regard is important. Hence exploring the needs of the consumers in outdoor recreation is essential, as their changing demands and impacts affect the performance of a destination (Pigram & Jenkins, 2006). On the other hand the intervening factors and variables such as socio economic factors, income levels, education levels, awareness, health aspects which affect differently on the recreation choice and participation have also been discussed in the literature(Rojek et al., 2006) should be incorporated in decision making.

A community survey is said to be a most practical way of obtaining comprehensive information on current patterns of leisure participation in an area, the levels of participation in a range of leisure activities and use of a range of leisure facilities, resident opinions (PROS Consulting, 2009; Pincetl et al., 2003).

The most appreciated qualities regarding the facilities, adequacy of infrastructure facilities, impression on staff assistance, availability of information and sign boards which have been explored in the study are important to obtain some visitor perception aspects on the 3 case study destinations. Obtaining the visitor use preferences, their perceptions and how projections for the future demand should be incorporated for regional recreation development has been discussed by NLSRA (2000).

Pine and Gilmore (1999) argue that the nature of the experience should be engineered to transform the visitor. He argues that by transforming the nature of the visit to observe sensitive natural sites, ect managers can change behavior such that the visitor understands the nature of the site, and therefore most inclined to protect it

and behave in an appropriate manner. As Pine and Gilmore's arguments that there are 4 types of experience that can be engineered by experience providers, the entertainment, education, escapist, aesthetic confirm the use of above management tools and criteria to achieve the sustainability goals.

6.4.1 The most appreciated qualities

The visitor responses inquired for the most appreciated qualities of the Lake Shidaka stated the natural environment and its openness and serenity were the most important factor for them. The pleasing view of Lake Shidaka's water body, surrounding forested area, the open grass land, the mountain ranges visible from distant and the natural landscape with different elevations together with availability of different types of vegetation, flowering plants explain the most possible reasons for such reasoning out.

Buckley (2008) stated that the presence of natural features and opportunities of being close to nature even within the built environment facilities enhance the potential for out door recreation. The results obtained for the most appreciated qualities of Lake Shidaka and in Beppu park confirmed this fact. The index of naturalness described by Machado (2004) who says that it can be applied to any environment will be useful in assessing how close an area to its natural settings is.

The features such as different types of flowering plants, non flowering plants and bushes, patch of bamboo plantation, veins and flower beds, the 100 years old Pinus and other giant trees which add a magnificent and ancient look to the Beppu park environment must have been the attractive features for the visitors. The pond area and attached water streams with aquatic fauna and flora have make the park alive. The open grassland serves mainly as a play ground. As Beppu park is located in one of the most urbanized area of Beppu city, such urban greenery and the serene environment in the park would be an admiring factors by all the parties.

In a study of urban parks in Melbourne, Australia, the attractiveness and variety of the vegetation, and the presence of water bodies, were found to be important factors in accounting for variations in recreational use (Boyle, 1983). He further says at some parks, a strong preference was expressed for peace and

quietness in relatively natural areas with few facilities. A similar preference for nature dominant environments was reveled in a major study of inner city parks in the city of Brisbane, Australia (McIntyre et al., 1991). Results of these studies revealed that the natural setting of inner city parks and green areas provide a venue for rest, recreation and release from tension for urban residents, as well an opportunity to appreciate nature. Hence such preferences on naural settings emphasizes that there is a need for preservation of these "islands of naturalness" within the city space.

The sightseeing area of "Yunohana huts" and how the yellowish Sulphur crystals lined up and crystallize in ditches and their side walls is a rare sight, so that this area of sightseeingwould have been the most attractive feature or the natural setting in Myoban complex.

Environmental cognition is the mental process of making sense out of the environment that surrounds us (Cutter and Renwick, 1999) and will further be useful in describing various preferences of the visitors.

In a natural setting the considerations on landscape emphasizes leisure, relaxation and the visual consumption of place (Penning & Rowsell, 1975; CPRE, 2003, LCA,). On the other hand the importance of managing visual impacts of recreation facilities and infrastructure is important. The architectural design of facilities must demonstrate unique responses to the local environment, climate and culture and should not compete with the natural landscape and the surrounding vegetation, but should be harmoniously integrated with the environment (Pigram & Jenkins, 2006; Baerenholdt et al., 2004). The further emphasizes the presence of infrastructure facilities such as roads, power lines, etc can cause serious visual impacts in natural areas hence should be integrated into the landscape and architecture of the facilities concerned.

Myoban facility has mostly been appreciated for its easy access as it is located by a main road which is very close to Oita Expressway. The Beppu park is mostly used by the near by communities and is surrounded by the city road network. Hence both the have been accepted for their easy access.

The validity of such responses could be confirmed by the literature (Pincetl, PROS consulting, 2005) which discusses the importance of easy access which is one of the most important factor in choice of a destination for recreation.

In Myoban, the traditional onsen facility would have been a cultural motivator and health concerns for refreshment of body and mind would have been the prime factors of concern in visiting Myoban facility.

6.4.2 The adequacy of infrastructure facilities and information boards

Infrastructure is a critical component of providing resource protection, access, recreation opportunities, user comfort, health, safety needs, direction, orientation, information, education and interpretative needs (Cooper et al., 2008; WTO, 2004).

In Lake Shidaka considerable number of visitors stated that the infrastructure facilities maintained at the premises is average to maximum level may be because of the presence of adequate basic infrastructure facilities at the facility. The refreshment outlets maintained within the premises are separately located, attractive and provide a range of refreshment opportunities. The drinking water outlets, toilet facilities are maintained at satisfactory levels. The parking facility too, seems to be adequate. Inquiring for the adequacy of the infrastructure facilities in Beppu park revealed that almost all the visitor's satisfaction levels were on an average level. The availability of adequate parking, toilet facilities and minimum expectations of the routine visitors must have been the reason for ranking the park at a higher level for the adequacy of infrastructure facilities. The basic infrastructure in Myoban was also said to be in an average level while some said it as minimum because of inadequate parking space, and spaciousness in the restaurant area.

Among the three facilities, no facility was complained for maintenance of excess infrastructure facilities which may indicate the sufficient man power, safety measures, proper allocation of money and other resources. Maintaining sufficient/ adequate infrastructure facilities is an important aspect of the overall management responsibility. Improving and reconstructing existing facilities or constructing new facilities for modern designs and standards often requires substantial investment hence this would need to be carefully considered.

As these destinations are popular public gathering vicinities the messages of good will, the importance of environment conservation, best management practices could be passed to the general public through these information boards located at these places without any cost.

6.4.3 The adequacy of staff assistance

In Lake Shidaka, Myoban onsen compex and Beppu park a large number of visitors mentioned that the staff assistance in the premises were adequate. Most of the respondents visiting the restaurant in Myoban must have been well served so that the staff assistance was said to be sufficient. In other two facilities more people may not have expected such assistance hence most of the responses were grouped under the no comments category.

6.5 Selected performance indicators for Lake Shidaka, Beppu Park and Myoban complex

Attempts that were made to obtain data for two performance indicators, the level of visitor satisfaction and the frequency of visiting the facility. Although these would not speak on all the aspects of performance or sustainability concerns of the destinations these would to some extent speak on these

6.5.1 The frequency of visiting the facilities

Beppu Park has the most number of frequent visitors could be explained by the fact that they were the routine leisure seekers who make the frequent visits, such as old couples or singles for their daily walks, exercises etc from neighboring walking distances. As discussed earlier this could be explained by the visitor profile analysis of the park. The destinations which are used more by routine visitors, a reliable indicator other than the frequency of visiting to describe the performance levels more reliably and accordingly be selected (WTO, 2004). The vicinities like Lake Shidaka which is important as special picnic site, the indicator chosen, the frequency of visiting a facility, will give some what an acceptable ranking its performances.

Cooper et al., 2008 explains that the energizers of demand(forces of motivation), effectors of demand(attitudes and associations from promotional information), ideas developed on a destination via learning, a, determinants of demand (economic factors, sociological factors- reference groups, cultural values, information obtained via various communication channels or physiological – perception of risk, personality, attitudes) will act as motivators and initiate demand thus it will provide a pull effect for the subsequent visits. Cooper et al., 2008 and WTO, 2004, further emphasizes that the percentage of return visitors and monitor its changes over time , could be used for bench marking and would be helpful in planning and managing of the destinations.

6.5.2 The level of visitor satisfaction

As visitor satisfaction is central to whether the visitor return, recommend the destination to others or conversely advice others to stay away, it is a leading indicator of the current level of performance and long term viability of a destination (WTO, 2004).

The satisfaction levels of most of the individuals visited Lake Shidaka and Beppu park were at a maximum level and the average level of visitor satisfaction was recorded by most of the visitors at the Myoban facility could be attributed with many factors. As satisfaction is based on different factors, including the range of attractions, the destination's strengths, the quality of service, the expectations of the visitors, infrastructure, diversified attractions, safety, cleanliness, considerations of such as a whole or partially would have been the prime factors in responding to this. On the other hand the long lasting memories of the visit must have been the basis for mentioning high level of visitor satisfaction. The special events and festivals organized at the facilities too could be considered as strengthening factors in this respect.

The responses to the survey on how they perceived the facility in different dimensions, such as what they have been expected from the visit, that were explained in earlier sections of the discussion describes why the visitors have

recorded such a higher or an average level of satisfaction towards each case study areas.

The level of visitor satisfaction is in contrast to the indicators that measure the levels of dissatisfaction which may make the destinations less popular such as complains received by the log books, the rising numbers of such which highlight the potential issues, weaknesses, and threats pertaining to the destination (WTO, 2004). As many of the elements which affect visitor satisfaction are at least part within the management purview of the destination managers, such considerations are vital to be explored and investigated.

6.6 The performance of Lake Shidaka, Beppu Park and Myoban complex as outdoor recreation destinations

Apart from the findings of the questionnaire surveys, the performance of Lake Shidaka as an out door recreation facility could be described from many angles. The resource base in Lake Shidaka is nature based and is located in the part of Aso Kuju National ark. As per the location of Lake Shidaka has a large catchment area and is having a large extent of forested area as a buffer zone, so that it retains water in all the 4 seasons of the year and act as a popular recreation facility all around the year. The natural resource base is very stable in Lake Shidaka giving it's a very stable image as a recreation facility .This situation is some what in contrast to the other popular near by Kagurame Lake (Iris Garden), which is known for its blue Irish flowers only in June to July each year where it is famous only for few months, when the lake is spilled with water. . In each season, the natural vegetation and different types of flora abundant surrounding the water body and the adjacent forested area add special uniqueness to the site. The destination is managed it self by this natural phenomena with the least human interferences and involvement of the human and with least costs. Hence such a phenomena that lead to the long term viability of the destination. The grassland areas in the vicinity could be observed as properly managed. The young vegetation is managed well and the new trees have been planted to replace the old growths and to give the premises a more colourful and a picturesque view.

The premises is becoming more popular and memorable to both the adjacent communities and some visitors from near by distances who specially visit the site for the such events such as opening of Lake Shidaka, the cherry blossom festival, fishing day, hanabi festival organized in the premises in different seasons. Hence other than the regular visitors people from different areas visit the facility thus the it acts as an important out door recreation destination.

The number of fish populations seems to be excessive. The eutrophication conditions that could arise due to the addition of extra food to the Lake in long term may cause undesirable environmental issues such as spreading of bad smell and several others issues.

The new swams to be introduced as an attraction to the pond area have been acclimatizing in an enclosed cages during the winter season, so that they can easily be adopted to their new environment during the time of less visitations. This implies that such additions have been planned and carefully operated to lessen the harmful effects to the animals and people as well. As per the observations the premises is clean and the solid waste is properly managed

Beppu Park would serve as a popular location even in time to come. The peaceful surrounding in a busy environment should be admired from many angles. Apart from different types of fauna and flora, seasonal variations too could be observed in Beppu park. Specially because of the seasonal flowering plants such as cherry blossoms, tulips and peaches/ plumbs, the park appears in new and most colorful at some seasons. Even the disabled and the old aged persons find their way to the park during these seasonal occasions. The most popular annual events such as dancing festival, bamboo lightening festival, food and agriculture festival held in the premises attract large crowds thus recording a very high numbers of visitations than in normal days.

Beppu park too is clean and the responses from the park division said that the solid waste management schedules are operating on daily basis. As the parks are public entities the problem of solid waste could exist in most of such premises. Efficient management of waste collected in the premises, reducing waste produced, and integrated waste management approaches would be beneficial to maintain clean

image of a destination. Due to the problems of contamination and negative impacts of solid waste both the environment and often the image of the destination could be affected. The production of offensive smells, generation of leachate which can contaminate nearby water ways, emission of green house gases, spread of contingent diseases could damage the destination's image. But at present Beppu park is not having such problems. Pruning activities in operation and maintenance of other trees, creepers, pond areas could observed during some field visits imply that the management has more focused on these aspects. Maintenance of two dense vegetation patches add more greenery and forested look to the park. Thus maintaining Beppu park, as it was described by (Stener, 2010) would assure that it provides many amenities for city dwellers.

In Myoban, a reduction in energy consumption by using the geo thermal energy will have an additional benefit on the operational costs of enterprises and have major environmental benefits, primarily through reducing consumption of natural resources and lowering green house gas emissions and could be explained as a means of saving the money.

6.7 The concerns towards the development of Lake Shidaka, Beppu Park and Myboan complex

In describing the performance aspects of the out door recreation destinations, the destination's strengths such as resource basses , assets, community support, workforce, management capacity, weaknesses such as lack of visitor appeal, no vision, lack of preparedness, access difficulties, opportunities such as education, economic opportunities, community enhancement, conservation, threats such as environmental impacts, cultural degradation, poor quality, external threats are important(WTO, 2004). Hence consideration of such factors will be important.

As the geography in physical and social and economic environments are different from one facility to another, the performance aspects in each location should be considered separately. In the present study the difficulties encountered in the facilities and the suggestions for the facilities which would speak on the

performance of the facilities were inquired from the users were able to explain different important facts to improve and upgrade the said facilities.

6.7.1 The difficulties encountered

Lake Shidaka was reported to be overcrowded specially in holidays or weekdays during the month of November, 2010, as it was some what a peak season of visitations to such outdoor recreation sites especially because of the facvourable weather conditions prevailed. As discussed earlier, people have responded that they expect and visit the Lake because of its serene environment thus they may have perceived too many people as a hindrance for their comfort. In contrast different categories of people in the society such as young or kids or even some middle aged personal would be likely to accept such a large number of people in vicinity. The response would have been different in other recreation destinations such as theme parks where the individuals expect more live and enjoyable environment. Some times the bodily proximity of 1000s of similar other people helps to produce a distinct atmosphere (Baerenholdt et al,. 2004). These co present encounters located within particular time and space, in which people sense that they are close enough to be seen and to see others (Goffman, 1963) is important to commit themselves to remain, in that space for the duration of the interaction, for utterances and silences to perform conversations. There is an expectation of mutual attentiveness of those who are geographically and socially co present (Urry, 2003b). This expectation of mutual attentiveness is by contrast with the Goffman calls the "civil inattention" that is found amongst "strangers" who are bodily proximate in public places. On the other hand crowdedness in outdoor recreation has been discussed by Manning and Valliere(2001). At the societal levels, adoption of coping mechanisms of crowdness may indicate incremental and unintended changes in the spectrum of outdoor recreation opportunities. The possible steps to avert such crowd conditions such as designing landscape, visual barriers etc have been discussed by Manning and Valliere(2001).

Arrangements such as life guards for boat rides could not be visible at once in the lake premises must have been the reason for complaining on the safety concerns in the Lake.

The dampness in some areas of the Beppu park and the occurrences of over mature trees and absence of refreshment outlets were some of the concerning factors that came out from the survey. The absence of replacement programe of trees would be a challenge for the future. Although Beppu park is located surrounding main road network, noise has not been recorded as an inconvenience factor. But the noise has arisen as an issue in studies of many urban destinations (Gidiof et al, 2007; Szeremeta & Zannin, 2009). The noise levels tolerated and expect at a particular locality would be intolerable else where. The noisy motor vehicles, the raucous visitors are the main sources of unwanted noise in many urban facilities where the destination is shared by different niches of groups such as young and older groups. In such cases, the conflicts may occur. As noise levels are site specific, culture specific it may not serve as a good indicator (Gidiof et al, 2007). Public safety concerns in urban parks were highlighted as an issue specially for the women and for the kids (Pigram and Jenkins, 2006). Safe destinations and maintaining good public safety aspects and good public security is a key factor in maintaining a good image of a destination (WTO, 2004). The assurance of safety concerns in Beppu Park was confirmed by the users in contrast to some of these studies which speak on the safety aspects in public places.

In Myoban it was evident and confirmed that limited space was available for free moving. Even the convenient parking was not permissible due to confined space and because of the nearness to the main road.

Perception of air quality can be varying with individuals. Some are much more sensitive to poor quality air than others. The health considerations due to smoke and noxious smell in Myoban must have been the health and safety concerns that were recorded by the visitors in restaurant and sightseeing area.. Hydrogen sulfide is known to have found in tourist facilities in various parts of Japan and the geothermal field in Rotorua, New Zealand, is a colorless gas with a rotten egg smell (Heggie, 2009) is responsible for the noxious smell in and around the Myoban facility. Visitors complain on strong smell, fumes would affect their stay lengths, and some times can be affected on their health conditions as well. At low concentrations, H_2S can irritate eyes and act as a depressant and at higher

concentrations, H_2S can cause upper respiratory irritation and pulmonary edema (Heggie, 2009) and various types of inconveniences. Hence such inconvenience factors need to be incorporated if any development plans for the Myoban are to implemented as the broader response of the visitors can affect the decision of whether or not to visit the destination based on such basic factors.

6.7.1 Suggestions for Lake Shidaka, Beppu park and Myboan complex

The visitors have not rated all the three facilities for the presence of diverse recreational activities and mentioned that all the three facilities were having almost the same level of recreational diversification.

The main expectations of the visitors in the Lake site and in Beppu park were the diversification of the recreational activities. Hence adding new components and design activity schedules based on the user groups would able to attract more people and ensure its long term popularity.

The designing of nature trails with guides in Lake Shidaka which has been suggested even by the visitors may provide an additional employment opportunities to the nearby communities while providing different type of nature experience to the visitors. As the high numbers of children and younger ages visit the park as was evident in the survey, the development of the play area available in the Lake site may be quite interesting for them. The boat rides, camping facilities, barbeque areas and the pony rides offered on the premises are some of the diversified opportunities of recreation. The swarms rearing in the pond area provide an opportunity for the children and other visitors to observe bird's behavior at a close distance. This would teach the lessons to practice calm and quiet behavior for admiring the nature, bird watching, and kindness towards the animals.

The Branard lake recreation area management plan (Ranger, 2005), describes the importance of vision, goals and objectives to develop core management plans to develop outdoor recreation opportunities for most popular lake and adjacent forested areas. Such approaches could be incorporated to develop the recreational provisions of Lake Shidaka or Mt Takasakiyama monkey park recreation area or diversifying recreational opportunities in rope way facilities.

Kids play areas, introduction of refreshment facilities, exercising areas, resting areas were highlighted as future needs for Bepu Park. But at present as a new addition a kids play area which was absent at the time of the survey has been added to the facility. Lot of children could be observed in the play area with sharing some basic playing equipment and facilities in it, learn to get on or cooperate with other kids by sharing the common properties. This would be a good opportunity to the neighboring communities to accompany their children to the park, allocate a short time from their busy schedules to pay a short visit.

As per Rojek et al., 2006, adding educational components to recreational facilities would attract more customers. Educational activities mainly in Lake Shidaka and Beppu park would be fulfilled by adding information or activity centers, organize field exploration workshops, conducting community awareness programs centralizing the facility on different related topics of nature, environment , health aspects, green tourism concerns, conservation management programs etc that would targeted at different layers of people in the community.

In Myoban, visitor considerations were more for improving the brown environment facilities such as seating arrangements in outside restaurant area, provision of adequate parking facilities and upgrading other basic infrastructure facilities. Respecting the key traditions and conserving the cultural values are the most important factors that should be cared especially in the Myoban onsen area. So any development agenda should cater such prime concerns of the society.

The potential public health threats associated with the prevalence of Legionella species, *Pneumonia legionellosis* an opportunistic human pathogenic bacterium unique to aquatic environments has been recorded in hot spring recreation areas of Taiwan (Hsien et al., 2006)). The carbon and nitrogen limitation to microbial activities in acidic soils has been studied by Yoshitake et al. (2007). Such occurrences could be found in Myoban public bath area too. Hence studies on possible environmental health issues and related researches could be suggested as part of the long term development activities of the premises. The possible health hazards due to noxious gasses, which may have an effect both on visitors and the near by residents need to be explored. It can strongly be recommended that the future research efforts must strive to quantify the levels of inconveniences and

possible health risks associated with the noxious materials in Myoban complex. Such chemical analysis and possible environmental health effects will help to develop evidence based management improvements to the facility.

Using alternative sources of energy, the geo thermal energy to fulfill the energy needs of the restaurant, introduction of energy efficiency and energy saving techniques in the restaurant area will be important.

6.8 The general concerns of the visitors

.According to the survey results apart from the lack of free time available, the climatic factor was the most common reason for not participating in outdoor recreation activities. This implies that the destinations may experience extreme seasonality especially because of the seasonal changes, climatic and weather patterns together with other factors responsible for participation of leisure activities. As serious gaps could be observed outside the peak seasons. So attempts to organize special events, festivals in off seasons to fill the calendar, offering alternative and unique activities based on seasonal specialties introducing and popularizing special discount packages, low cost packages in off or shoulder season are some of the criteria that would be contributed to the popularity of the destinations at off seasons.

Godbey, 1985; Patmore 1983 who discussed the constrains in participation in outdoor recreational activities stressed that some of the barriers can be modified and be considered to identify the management improvements, further planning to increase the user levels and ensure sustainability of the facilities in the future.

As it was described in the literature review the comprehensive studies such as the National Urban Recreation Study, in 1978, NLSARA (2000) , the recreation sustainability plan for the city of Sacramento, Los Angeles(2008- 2015), The recreation area management act of 2006 in Queensland would provide a guide to move ahead in managing and planning the outdoor recreation resources in Beppu city.

6.9 The general concerns of outdoor recreation in Beppu city

Although the attempts were made to find out the past researches or studies carried out concerning the selected facilities and on related subject areas, only limited of such information and materials could be found. In some instances the responses of responsible authorities confirmed that its unavailability while in some private organizations the information were with limited public disclosure.

The concession packages to visit the famous outdoor recreational sites in Beppu city are available in most of the visitor information centers and in other public places. Such packages are able to attract more local tourists as well as leisure seekers to the city. To visit Beppu hell tour, Takasakiyama Monkey Mountain, Umitamago coupled packages, is one of such promotions. The bus guides for sightseeing around the city, such as hell seeing tour took place in 1927 is still in operation and contribute to increase the number of visitors going around Beppu and the outdoor recreation facilities in the city (Kamenoi Hotel ed.(2000).

The benefits of outdoor recreation cannot be achieved without accounting for its ecological, social, political and economic considerations. At present the increase levels of participation by the Japanese in outdoor recreation activities would often cause an overuse and may put an impact on limited number of nature sites. Hence the outcome of this study could add at least a little knowledge and concern of the responsible authorities to act upon for the long term vision, stability and sustainability of the outdoor recreational facilities in Beppu city.

Apart this study has served in different ways towards my personal satisfaction. The in-depth studies of the facilities were quite interesting and very informative than just visiting them as a normal leisure seeker. The lessons and experiences on the outdoor recreation in Beppu city could be used as an icon and be replicated specially to upgrade such facilities in my home country, Sri Lanka. I should conclude here that I really have gained much knowledge by field investigations and observations in the most famous outdoor recreational facilities in Beppu city, Japan and I have really enjoyed my study.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

Out door recreation diversity

Study showed that there was a considerable amount of diversity in outdoor recreation experience, different outdoor recreation events, and administrative setups in Beppu city. Urban recreation, forest or wilderness experiences, excitements with amusement parks, coastal recreation, sports and swimming, cultural, wildlife and aquarium, panoramic views were some of the attractions.

The performances of outdoor recreation facilities

The wide array of public and beach parks scattered in the city serve the different categories of people in the community in different capacities/ numerous ways and still can be improved to maximize their utilization.

Kintetsu ropeway and Mount Takasakiyama Monkey Park, serve in biodiversity and landscape conservation attempts and have developed the multiple use of the resource base aspects.

African safari provides opportunities for wildlife experiences, serves in ex situ conservation and has carefully planned to maximize the economic benefits from the facility. The habitat enrichment programs are a need for the facility. The careful designing of recreational activities should be planned so as to maintain the natural behaviors of the animals and assure a quality experience from the facility.

Umitamago, the aquarium has made available many performance schedules with intensive interactive visitor activities with some educational tools as well, is a

well organized facility. Still more efforts should be made especially on the large mammals welfare aspects.
Jigoku and hot spring experiences are unique outdoor recreation experiences in Beppu city and they should carefully be managed to maximize its uses.

Investigations showed that no comprehensive plan or an integrated approach for (the management of) outdoor recreation in the city could be found.

Visitor profiles
The visitor surveys conducted in three locations revealed that comparatively more leisure seekers in holidays or weekends in outdoor recreation facilities.

Higher representations of schooling and working age group individuals, and some what a similar gender representation could be found from the survey results.

Visitors' perceptions
The personal observations in field visits showed that the outdoor recreational facilities in Beppu city have been well perceived by the community.

The level of visitor satisfaction which was used as an performance indicator revealed that the level of visitor satisfaction in Lake Shidaka and Beppu park were at a maximum while it was on an average level in Myoban complex.

Perception analysis revealed that visitor concerns of natural environment, its dynamics, naturalness & other landscape management aspects are considerably high. Survey responses showed that more diversified recreational activities within the facilities were expected. Development of infrastructure facilities & concerns on built environment was mentioned as important in Myoban complex and promoting some coupling services in Beppu Park were some of the concerns which would facilitate the development of the facilities.

Lack of free time and weather conditions were the prime constraints for the less participation in outdoor recreation activities of the respondents.

7.2 Recommendations

Comprehensive research

Comprehensive field data collection, detailed visitor surveys, distribution of more comprehensive questionnaires, conduct on site interviews, conduct studies to capture seasonal variances will be beneficial to capture the dynamics of recreational demand at present or in future inorder to upgrade the facilities or provision of new opportunities.

Policy related matters

Develop a vision for outdoor recreation in Beppu city in par with the sectoral development plans in Beppu city and Japanese tourism, leisure and social welfare policies.

An integration of all the implementations in outdoor recreation sector. A central recreation planning department and a maintenance of a comprehensive inventory of outdoor recreation service providers in Beppu city. Referencing and analyzing past studies or researches for planning the outdoor recreation needs, further resources allocations for achieving higher levels of performance of the outdoor recreation sector is important.

Implementation and monitoring aspects

Explore more on the recreation opportunity spectrum based on the natural resources, built in facilities, the diversification of the recreational activities within the outdoor recreation facilities and promote multiple use of outdoor recreation resources by strategic planning to ensure the maximum and efficient use of resources and to develop unique recreation facilities in the city.

The introduction of environmental education and awareness activities via creative educational projects or programmes targeted at different levels of the community could be advantageous. The field environmental educational assignments with the participation of school children designed would help to orient the younger generation towards environmental conservation activities and practice them to admire the nature.

The selection of suitable environmental, social, and economic performance indicators to monitor and assess the destination's performance is important in order to ensure the sustainability of the facilities

Further researches

Application of environmental economic valuation techniques to assess hedonic value, willingness to pay etc. to derive green space values, including the direct use values as well as the values of ecological services, human health and social welfare aspects of outdoor recreation destinations which administrators can use such analysis in strategic planning and management efforts(in the provision of outdoor recreation opportunities).

Further the researches on environmental, sociological, economical aspects of outdoor recreation should be conducted inorder to ensure the long term viability and sustainability of the outdoor recreation destinations and to ensure highest commitment towrds the provisions of community welfare in Beppu city

REFERENCES

Adams, W.M. (2006). The future of sustainability: Re-thinking environment and development in the twenty-first century. Report of the IUCN Renowned Thinkers Meeting, Retrieved on: 2009-02-16 from http://cmsdata.iucn.org/downloads/iucn_future_of_sustanability.pdf

Aukerman, R., Haas, G. ,Lovejoy, V. & Welch. D.(2004). Water Recreation Opportunity Spectrum (WROS) Users' Guidebook. U.S. Department of the Interior, Bureau of Reclamation. Managing water in the world.105.

Azar, C., Holmberg, J., Lindgren, K.(1996) Socio-ecological indicators for sustainability. *Ecological Economics*. 89-112.

Beppu city guide, 2009. Beppu city Tourism Division Publication

Beppu city guide 2011, Beppu city office Publication

Beppu Enjoy Guide, 2010. Tourism Division Publication.

Berger,A.A.(2010). Tourism in Japan: An Ethno-semiotic Analysis - Tourism and Cultural Change No. 22. Channel View Publications Ltd.10-43
Berg, B. L. (2006). *Qualitative Research Methods for the Social Sciences* (6th ed.). Allyn & Bacon.

Boniface, B. G., & Cooper, C. P. (1987). *The Geography of Travel and Tourism*. Butterworth-Heinemann Ltd.

Boyle,R.(1983).A survey of the use of small parks. *Australian Parks and Recreation*.November.31-36

Bramham, P., Henry I., Mommaas H., van der Poel H. (1996). Leisure Policies in Europe .CAB International.

Brainard Lake Recreation Area Management Plan,September 2005, Boulder Ranger http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5228436.pdf

Britton, R. (1979). Some Notes on the Geography of Tourism. *Canadian Geographer / Le Géographe canadien, 23*(3), 276-282.

Brutland Commission Report (1987). Retrieved from http://www.bookrags.com/wiki/Brundtland_Commission

Buckley,R.(2000) Tourism in most fragile environments. *Tourism Recreation Research*,25,1.31-40.

Burgess, J., Harrison,C.M. & Limb, M.(1988) People, Parks and the urban green: A study of popular meanings and values for open spaces in the city. *Urban Studies*.25.455-473

Chino,H. & Learly, L.(1982) Recreation in Japan. Retrieved from http://www.lib.niu.edu/1982/ip820726.html

Clark, R. N. & Stankey,G.H.(1979)The recreation opportunity spectrum: A framework for
Comparison of the Value of Outdoor Recreation: A Case Study Applying Travel Cost Method and Contingent Valuation Method. Retrieved from http://sciencelinks.jp/j-east/article/200117/000020011701A0625949.php

Cooper, C., Fletcher,J., Gilbert,D.,& Wanhill,S. (2008).*Tourism –Principles and practice*(4th ed.).FT Prentice Hall,UK.

Cooperate state research education and extension service. Outdoor recreation research and education for the 21st century, defining national direction and building capacity, USDA, 2007.6.

Countryside Commission(1970). *Countryside Recreation Glossary*, London. Countryside Commission.

Crawford, D. W, Jackson, E. L., & Godbey, G. (1991). A hierarchical model of leisure constraints. CAB International, Retrieved from http://www.cabdirect.org/abstracts/19921894364.html;jsessionid=AB604FB5157CA93C59C212E82D0D36CE

Crawford, D. W., & Godbey, G. (1987). Reconceptualizing barriers to family leisure. *Leisure Sciences: An Interdisciplinary Journal*, *9*(2), 119. doi:10.1080/01490408709512151

Cushman,G., Veal, A.J. & Zuzanek,J.(eds) (1996) Cross-national leisure participation research: a future. World Leisure Participation: Free Time in Global Village, Wallingford:CABI.237-58

Cybriwsky, R. (1999). Changing patterns of urban public space: Observations and assessments from the Tokyo and New York metropolitan areas. *Cities*, *16*(4), 223-231.

Daniels Jr., M.E(2006).Indiana Statewide outdoor recreation plan , 2006-2010. 19.

DeGrazia,S.(1962). Of time, work and leisure. New York: Twentieth century fund.

Department of Environment, Housing and Community Development (1977). Leisure planning guide for local government, Canberra: Australian Government Publishing Service.

Dove, J., (2004).*Tourism & Recreation*.

Dower,M.(1965). Fourth wave: the challenge of leisure . A Civic Trust Survey .Civic Trust, London.

Driver,B.(2003) Benefits.In Jenkins & Pigram(eds) Encyclopedia of Leisure and Outdoor Recreation.Routledge,London.31-36

Driver, B., & Toucher, R. (1974). Toward a behavioral interpretation of recreational engagements, with implications for planning. Elements of Outdoor Recreation Planning. Ann Arbor, MI: University Microfilms, 9-31.Experiencing the Environment. New York: Plenum Press. 187-206.

Eagles, P. F. J., and McCool, S. F. **(**2002). *Tourism in national parks and protected areas: planning and management.* CABI Publishing, Wallingford, UK. 89-151

Environmental Performance Index(2008).Yale Center for Environmental Law & Policy.Yale University. Retrieved from http://www.yale.edu/epi/files/2008EPI_Text.pdf

Flower city Beppu, Beppu Park Guide , Parks Division, City office Beppu

Funagara, M.(2002). Guide book for the health effects of hot spring bathing; Hoe to prevent bathing accidents.Oita university nursing and health services.

Geo heat center quarterly bulletin, ISSN 0276-1084, May,1996 Vol.17 No.2, 1 – 9

Godbey, G. & Parker, S. (1976). *Leisure Studies and Services: An Overview*. Thomson Learning.

Godbey, G. (1985). Nonuse of public leisure service: A model. *Journal of Park and Recreation*

Gold,S.(1972).Non-use of neighbourhood parks. Journel of American Institute of Planners.XXXVIII,6.369-378.

Grazia, S. D. (1994). *Of Time, Work, and Leisure*. Vintage.

Gunn, C. A. (1979). *Tourism planning*. Crane, Russak.
Gunnarsson, A. G. (2007): Noise & wellbeing in urban residential environmnets: The potential role of perceived availability to near by green araes. Landscape & Urban Planning. 83: 2-3 , pp.115- 126

Haas, G.E.,Wells,M.D., Lovejoy,V. &Welch,D.(2007).Estimating Future Recreatio n Demand: A Decision Guide for the Practitioner. Retrieved from http://www.usbr.gov/pmts/planning/recreationdemand.pdf.

Haase, A., Steptoe, A., Sallis, J. F., & Wardle, J. (2004). Leisure-time physical activity in university students from 23 countries: associations with health beliefs, risk awareness, and national economic development. *Preventive Medicine*, *39*(1), 182-190.

Hall, C.M. & Page, S. (1999). The Geography of Tourism and Recreation: Environment, Place and Space, Routledge, London.

Hall, M. & Page, S. J., (2006). *The Geography of Tourism & Recreation*. Routledge,UK.

Hashimoto, H., Natuhara, Y., & Morimoto, Y. (2005). A habitat model for Parus major minor using a logistic regression model for the urban area of Osaka, Japan. *Landscape and Urban Planning*, *70*(3-4), 245-250.

Heggie, T. W. (2009). Geotourism and volcanoes: Health hazards facing tourists at volcanic and geothermal destinations. *Travel Medicine and Infectious Disease*, *7*(5), 257-261.

Heggie, T. W.,(2009).Geo Tourism and volcanoes ; Health hazards facing tourists at volcanic and geothermal destinations. Travel medicine and infectious disease, (2009)7, 257-261

Ibrahim,H. & Cordes,K.(1993) Outdoor Recreation, Dubuque,IA. Brown and Benchmark.23-45

Ittner,R., Potter,D.R., Agee, J. K., Anschell, S., eds.(1978).Determining the acceptability of recreational impacts: an application of the outdoor recreation opportunity spectrum. In: Conference proceedings: recreational impacts on wild lands; 1978 October 27-29; Seattle, WA. No. R-6-001-1979. Seattle, WA: USDA For. Serv., Pacific Northwest Region. 32-43.

Jackson, E. L. 1988. "Leisure constraints: a survey of past research". *Leisure Sciences*. 10: 203-215

Jackson, E. L., & Henderson, K. (1995). Gender-based analysis of leisure constraints. *Leisure Sciences,* 17, 31–51.

Jackson, E.L., Crawford, D.W., & Godbey, G. (1993). Negotiation of leisure constraints *Leisure*
Japan Studies/ Out door recreation**.** Retrieved from http://www.cababstractsplus.org/abstracts/SearchResults.aspx?cx=011480691189790707546:cops6fzdyna&cof=FORID:9&ie=UTF-8&q=Outdoor+recreation+in+Japan&sa=Search#1102

Japanese time-use survey. http://dx.doi.org/10.1016/j.jjie.2010.05.001

Kando, T. M. (1980). *Leisure and popular culture in transition* (2nd ed.). Mosby.

Kando,T.M.(1975). Leisure and popular culture, St.Louis, MO: C.V.Mosby.

Kintetsu Rope Way. Retrieved from http://www.beppu-ropeway.co.jp/

Kraus, R. (2001). *Recreation and leisure in modern society* (5th ed.). Jones & Bartlett Learning.

Kreutzwiser,R.(1989).”Supply” . In Wall,G(ed) Outdoor recreation in Canada,Toronto.Wiley.21-41

Kuroda,S.(2010) Do Japanese Work Shorter Hours than before? Measuring

Leitner,M.J. & Leitner,S.F.(2004) Leisure Enhancement,3rd edn. Haworth Press, New York. 34-46
Lynch, R., & Veal, A. J. (1996). *Australian leisure*. Longman.

Machado, A. (2004). An index of naturalness. *Journal for Nature Conservation, 12*(2), 95-110.

Manning,R.E. & Valliere,W.A.(2001) Coping on outdoor recreation: Causes and consequences of crowding and conflict amoung community residents. Journel of Leisure Recreation.4th quarter.12.

Masaki, S (2009). Hot Spring Resource & Utilization in Oita / Beppu. Presentation from

ENVOL Guest Lecture Series. Asia Pacific University.

Maslow, A. (1970). *Motivation and Personality* (2nd ed.). Harper & Row.

McArthur, S. (2000). Visitor management in action: an analysis of the development and implementation of visitor management models at Jenolan Caves and Kangaroo Island. University of Canberra. Information Management & Tourism. Retrieved from http://erl.canberra.edu.au./public/adt-AUC20060424.160716

McIntosh,R.W., Goeldner,C.R. & Ritchie,J.R.B.(1995).Tourism Principles, Practices, Philosophies, Wiley, Newyork.

Mercer, D. & Elery, H.S.eds. (1980). *Recreation Planning and Social Change in Urban Australia.* Sorrett Publishing. Ministry of Land, Infrastructure, Transport and Tourism / Govt. of Japan. Retrieved from http://www.mlit.go.jp/index_e.html

Mercer, D. (1973) The concept of recreational need. *Journal of Leisure Research*, 5(1), 37-50.

Mercer, D. (1975) The concept of recreational need. *Journal of Leisure Research*, 5(1), 37-50.

MIAC(2001) (http://www.stat.go.jp/english/data/shakai/2001/kodobua.htm).

Moscardo,G. & Ormsby, J.(2004) *A Social Indicators Monitoring System for Tourist and Recreational Use of the Great Barrier Reef* . Great Barrier Reef Marine Park Authority. Retrieved from http://www.gbrmpa.gov.au/__data/assets/pdf_file/0006/3030/rp80.pdf

Müller, F. (2005). Indicating Ecosystem and Landscape Organization. - Ecological Indicators. 5(4): 280-294.

Munehiko, A.(2005) *World Travel and Japanese Tourists*. Gakubunsha.9-38

Murty, H., Gupta, S., Dikshit, A., & Singh. (n.d.). An overview of sustainability assessment methodologies. *Ecological Indicators*, *9*(2), 189-212. doi:10.1016/j.ecolind.2008.05.011
National tourism policy review of Japan(2002). Directorate for science, technology and industry. Retrieved from http://www.oecd.org/dataoecd/43/48/33649824.pdf

Neulinger, J. (1980). *To Leisure: An Introduction*. Allyn & Bacon.

Niemeijer, D., & de Groot, R. S. (2008). A conceptual framework for selecting environmental indicator sets. *Ecological Indicators*, *8*(1), 14-25. Open Space, Sports and Outdoor Recreation Policy objectives. Department of Environment (DOE) Northern Ireland. Retrieved from http://www.planningni.gov.uk/index/policy/policy_publications/planning_statements/pps08/pps08_role_dev_plans.htm

Nishiyama,K.(1996) *Welcoming the Japanese visitors*. University of Hawaii Press. Honolulu.3-24

OECD, 2004. Clocking in and Clocking Out: Recent Trends in Working Hours. Observer, October, OECD.

Owen,P.L.(1984) Rural leisure and recreation research: a retrospective evaluation.*Progress in Human Geography*.8,2.157-187

Patmore, J. A. (1983). *Recreation and Resources: Leisure Patterns and Leisure Places*. Blackwell Pub.

Patmore, J. A. (1984a). *Recreation and Resources: Leisure Patterns and Leisure Places*. Blackwell Pub.

Penning -Rowsell,E.(1975) Constrains on the application of landscape evaluation. *Transactions*. Institute of British Geographers.66.49-55.

Pigram, J. J (1983), *Out Door Recreation and Resource Management*. London: Croom, Helm.

Pigram, J. J. & Jenkins, J.M. (2006). *Out door recreation management(2nd ed)***.** Routledge, UK.

Pincetl,S., Jennifer Wolch,J.,Wilson,J., & Longcore,T.(2003) Toward a sustainable Los Angeles: a "nature's services" approach. USC Center for Sustainable Cities.

PORS Consulting.(2009).City of Bartlesville: Parks and Recreation Development Plan.94.

Punch, D. K. F. (2005). *Introduction to Social Research: Quantitative and Qualitative Approaches* (Second Edition.). Sage Publications Ltd.

Ranger,(2005). The Branard lake recreation area management plan.1-49.

Ravenscroft, N.(1992).Recreation planning and development. Basingstoke.Macmillan.

Ravenscroft, N., & Curry, N. (2004). Constraints to participation in countryside recreation in England. CAB International, Retrieved May 29, 2011, from http://www.cabdirect.org/abstracts/20063223223.html

Ritchie, J. R. B. & Geoffrey, I.C.,(2005). *The competitive destination*. A sustainable tourism perspective, CABI Publishing

Shindo,N.(1999). *Kanko Gyosei to Seisaku*, Meigensha,Tokyo.45-49

Singh, R. K, Murty, H. R., Gupta, S.K., Dikshit ,A. K.,(2008) . An overview of sustainability assessment methodologies. Ecological indicators.189-221.

Smeets,E., & Weterings,R.,(1996).Environmental indicators: Typology and overview. Retrieved from http://www.brahmatwinn.uni-jena.de/fileadmin/Geoinformatik/projekte/brahmatwinn/Workshops/FEEM/Indicators/EEA_tech_rep_25_Env_Ind.pdf

Smith, S. L. J. (2010). *Practical Tourism Research* (First.). CABI.

Stankey, G.H., S.F. McCool, & Stokes, G.L.. (1984) Limits of acceptable change: New framework for managing the Bob Marshall Wilderness. Western Wildlands 10:33-37.

Stener, C. (2010). Climate friendly parks: Performing greenhouse gas inventories at US national parks and implications for public sector greenhouse gas protocols. *Applied Geography*, *30*(4), 475-482.

Strategic Plan, Queensland Outdoor recreation federation, 2010.38.

Summary for Beppu City(2010). Policy Making Division, Planning Department. Retrieved from http://www.city.beppu.oita,jp

Sustainable Community Indicators Trainer's Workshop(1988) Hart Environmental Data. Retrieved from http://www.sustainablemeasures.com/Training/pdf/HEDTrMan.pdf

Szeremeta, B., & Zannin, P. H. T. (2009). Analysis and evaluation of soundscapes in public parks through interviews and measurement of noise. *The Science of the Total Environment*, *407*(24), 6143-6149.
T
Taguchi,S., Itoi,R. & Yusa,Y.(1996) Beppu hot springs. Geo-heat center quarterly bulletin.17:2

The Future of Sustainability;Re-thinking Environment and Development in the Twenty-first Century(2006).Report of the IUCN Renowned Thinkers Meeting. Retrieved from http://cmsdata.iucn.org/downloads/iucn_future_of_sustanability.pdf

The outdoor recreation urban space and elevation the negative inputs of city climate change(Warsaw). *The Outdoor Recreation Urban Space***.** 5th urban research symposium, 2009,France. Retrieved from http://www.urs2009.net/docs/papers/Pawlikowska.pdf
Tokuhisa,T.(2002). *The Laws related to Tourism*.Gakubunsha, Tokyo.13-20

Tourism dynamic directory.FY(2009). Beppu City Office.

Veal, A. J. (2002). *Leisure and Tourism Policy and Planning* (Second.). CABI.

Veal,A.J.(1987). *Leisure and the future*. Allen and Unwin, London.

Wagner, S., Cohen, S., & Kaplan, B., eds.(1989) The nature of environmental experience.

Waley, P. (2005). Parks and landmarks: planning the Eastern Capital along western lines. *Journal of Historical Geography*, *31*(1). Retrieved from http://www.sciencedirect.com/science/article/B6WJN-4G7GFXF-5/2/621a4349378978e9a931e06ea650f5a3

Warzecha, C., Manning,R., Lime,D & Freimun,W.(2001) Diversity in outdoor recreation:Planning and managing a spectrum of visitor opportunities in and among parks. *Managing Recreational Use*, 18(3), 99-112.

Williams, D. R. & Roggenbuck, J. W.(1989). Measuring Place Attachment: Some Preliminary Results Paper Presented at the Session on Outdoor Planning and

Management NRPA Symposium on Leisure Research San Antonio, Texas. Retrieved from http://www.fs.fed.us/rm/value/docs/nrpa89.pdf

Williams, S. (1995). *Outdoor Recreation and the Urban Environment*. Intl Thomson Business Pr.
Williams, S.,(2003). *Tourism and recreation*. Prentice Hall,UK

World Tourism Organization(WTO). (2004).*Indicators of sustainable development for tourism destinations, A guide Book.*World Tourism Organization, Spain.

Yagasaki,N.,(2000) Japan;Geographical perspectives on an Island nation.Teikoku-shoin,Tokyo.

Yoshitake, S., Sasaki, A., Uchida, M., Funatsu, Y., & Nakatsubo, T. (2007). Carbon and nitrogen limitation to microbial respiration and biomass in an acidic solfatara field. *European Journal of Soil Biology*, *43*(1), 1-13.

Appendix 1

The major historic events related to Beppu tourism, leisure and outdoor recreation

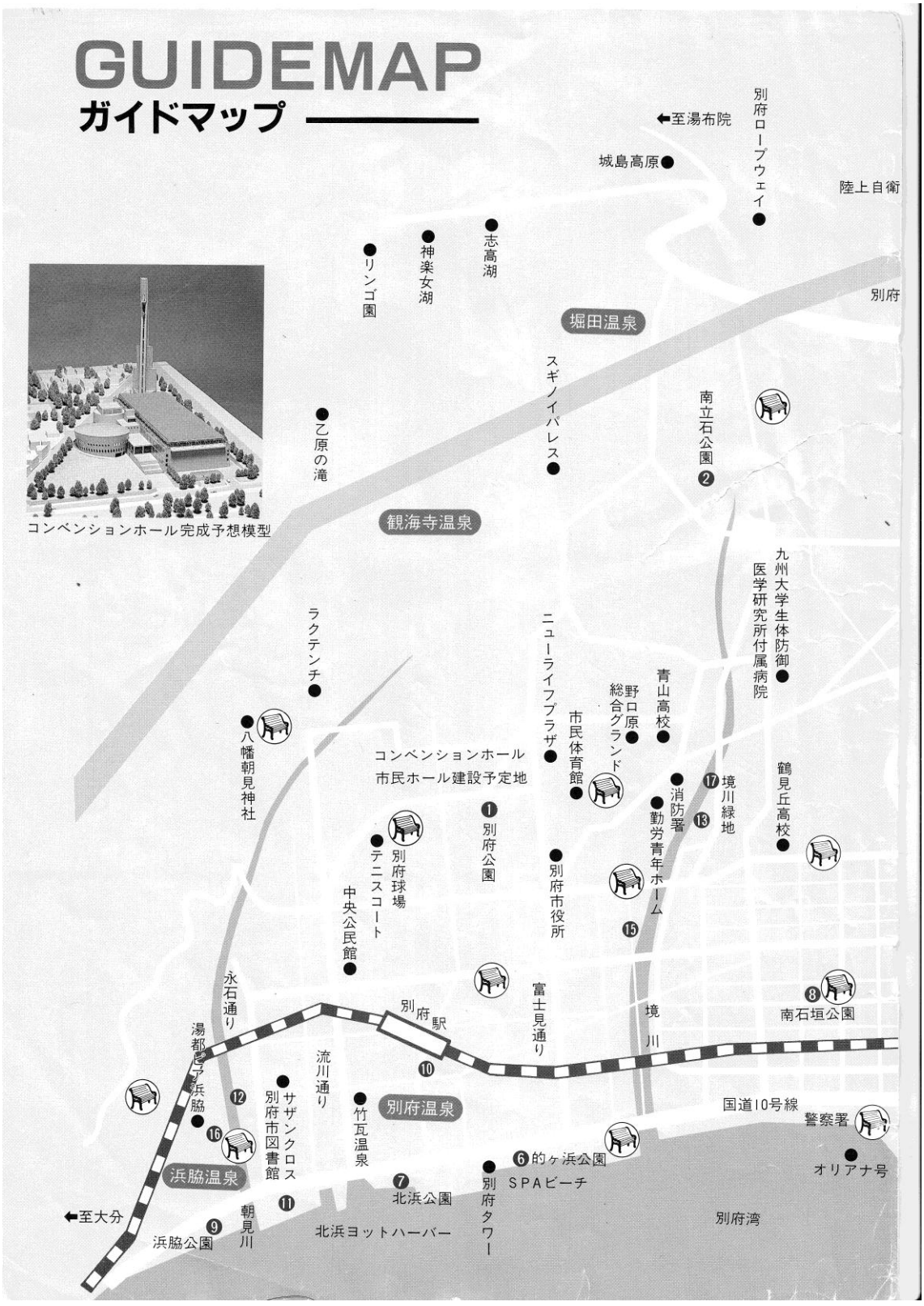
Date	Event
1978 June	Minamitateishi greening botanical garden councilor's office was established
July	Symbol for Beppu tourism was established
1980 May	Northern community centre was established
November	Citizens gymnasium was established
1981 October	3rd Hang gliding world championship was held
1983 October	2nd Asian Sailboat Championship was held
1984 May	Beppu Art Museum was moved
1984 October	sister city agreement with Mokpo/ Korea
1984 October	all Japan windsurfing championship
1985 May	Sister city agreement with Beaumount, USA
1985 July	Friendship City agreement with Yantai China
1985 October	Oita New Life Plaza was completed
1986 March	Beppu Yamanami Area was designated as the International Health Hot Spring Resorts
1987 July	Sister Sity Agreement with Rotura, New Zealand
1988 October	The shopping mall Cosmopia was opened
1989 July	Oita Expressway was opened from Beppu to Yufin
1989 November	2nd National Health & Welfare Meeting in Oita was held
1991 March	Hamawaki redevelopment project was started
1991 April	The Southern District Community Center was established
1991 May	Sahi Ohirayama District Community Center was established
1991 November	The 3rd Lifelong Study Festival was held
1992 March	The Central District Gym was completed
1992 August	Jissoji Kyudo & Archery Filed was established

1992 December	Oita Expressway was opened from Beppu to Oita
1994 June	Beppu Traditional Bamboo Crafts Center was opened
1994 August	Social welfare Hall was completed
1994 October	Sister cite agreement with Bath, UK
1994, December	Hot water swimming Pool was completed
1995 March	The Citizens' Hall B- Con Plaza was completed
1995 Apil	Community Center was completed
1996 March	Oita Expressway was opened from Oita to Nagasaki
1996 July	The Children's Hall was opened
1997 March	Asahi Ohirayama district gym was completed
1997 April	Fureai Yasuragi (Heartwarming) Sibaseki hot spring was completed
1997 Sep	1st DREAM Spring Home Beppu Dreamval "was held
1997 Nov	The site of Sumo Training Camp in Beppu was completed
1997 Nov	Seiko Epson Oita Soft Center was completed
1998 Oct	Citizens cultural Festival was held
1998 Oct	Kitahama hot spring "Termas" was opened
1999 March	Area Promotion Tickets was issued
1999 Oct	The Public Information Act was established. Citizens' Information Center was established
2001 February	50th Memorial Beppu Oita Marathon was held
2001 March	Scenery of Beppu's Hot spring steam won 2nd prize in Japanese sceneries to save for the 21st centaury of NHK
2002 March	New Hamada Hot spring was completed
2002 May	Beppu was introduced at the China International Football Expo
2002 May June	2002 FIFA World Cup Football was held
2002 October	Beppu Citizen Japan – China Friendship Wing was held
2003 Janu	International Exchange city agreement was established with Jeju, Korea

2003, April	Horita Hot spring was opened
2003 July	Beppu Arena was opened
2003 July	Citizen talking saloon was established
2003 July	Tourism Bureau was established
2003 October	Beppu Tourism Planning Conference was established
2004 April	Yukemuri (Hot Spring steam) observatory was opened
2004 June	Area Regenerating Plan / Designated as World Therapeutic city, Beautiful and Cheerful Beppu
2004 Sep	Declaration for Hot Spring city Beppu men and women joint commitment city
2004 October	The Northern community center Asunaro Kan was opened
2005 February	Onsen Tourism Bureau was established
2006 June	concluded an agreement to build " You me Town Beppu"
2006 August	Kannawa Mushiyu was renovated
2006 November	Beppu Kirin was renovated
2007 May	Kannawa Hot Spring District was awarded 2nd prize of the 2008 city development national meet.
2007 October	Beppu citizens' Base Ball Stadium was opened
2007 November	You me Town , Beppu was opened
2007 December	1st Asia Pacific Water Summit was held
2008 January	Resigned on the International Exchange City agreement with Jeju city
2008 March	Water Ecological City Announcement
2008 July	Basic Plan of Beppu Central district revitalization was authorized by the PM
2008 September	Challenge! The National Athletic Meet was held in Oita
2009 May	Renovated Kitahama Park

Source: Adapted from Summary Beppu 2010

Appendix 2


GUIDEMAP
ガイドマップ
コンベンションホール完成予想模型
←至湯布院
別府ロープウェイ
城島高原
陸上自衛
志高湖
神楽女湖
リンゴ園
別府
堀田温泉
スギノイパレス
南立石公園
乙原の滝
観海寺温泉
九州大学生体防御医学研究所付属病院
ラクテンチ
ニューライフプラザ
青山高校
野口原総合グランド
八幡朝見神社
コンベンションホール
市民ホール建設予定地
市民体育館
消防署
境川緑地
鶴見丘高校
別府公園
別府球場
テニスコート
勤労青年ホーム
別府市役所
中央公民館
永石通り
別府駅
富士見通り
境川
南石垣公園
湯都ピア浜脇
流川通り
サザンクロス
別府市図書館
竹瓦温泉
別府温泉
国道10号線
警察署
浜脇温泉
的ヶ浜公園
SPAビーチ
オリアナ号
北浜公園
別府タワー
朝見川
←至大分
浜脇公園
北浜ヨットハーバー
別府湾

ベンチ設置場所

アフリカン
サファリ

至湯布院

別府駐屯地

大分自動車道

明礬温泉

坊主地獄

海地獄

山地獄

かまど地獄

鬼山地獄

⑱鉄輪地獄
地帯公園

大分県温泉熱
花き研究指導センター

白池地獄

金龍地獄

柴石温泉

鉄輪温泉

やまなみハイウエイ

貴船城

竜巻地獄
血の池地獄

国立別府病院

サッカーグラウンド

実相寺中央公園 ❸

市営実相寺球場

仏舎利塔

別府女子短大

亀川温泉

別府大学

亀川駅

至小倉

北石垣公園 ❺

春木川

別府大学駅

花時計

別府海浜砂湯

別府市美術館

❹上人ヶ浜公園

別府国際観光港

Appendix 3

Information Requested

Tourism and Community Development Division

a. Any Inventory of leisure facilities in Beppu

b. Any existing management plans, proposals currently on the table for development of recreation/ leisure facilities in Beppu

c. Summary Report on Tourism Nation promotion Basic Law, Tourism Nation Promotion Basic Plan

d. Any reports on Institutions related to Recreation and tourism in Japan; National Recreation Association of Japan , Department of recreation studies, Nippon College of Physical Education, Japan Tourism Agency

Hot Springs Management Division

a. Any past studies, or researches carried out related to recreation /tourism , health effects in Myoban and other onsen facilities

b. Any monitoring records available for water , air quality in Myoban onsen and other onsen facilities

c. Staff employed, funding available, annual maintenance allocations in Public Onsen facilities

d. Any existing management plans, proposals currently on the table for improving Public Onsen facilities

e. Any management problems or environmental problems related to onsen facilities

f. Report on Hot Springs Law

g. The Beppu Hatto festival Information and any photoes

h. Jigoku information, jigoku management and any reports

Environment Division

a. Any plans for the future for improving recreation and leisure facilities in Beppu

b. Any special waste management programmes in operation for parks, onsen facilities, on special events

c. Any monitoring records available for water , air quality in parks, lake shidaka, beaches, onsen facilities

Urban Policy Division

a. Any Inventory of leisure facilities in Beppu

b. Summary of City parks law

c. Any existing management plans, proposals currently on the table for development of recreation/ leisure facilities in Beppu

d. Any plans for the future for improving recreation facilities in Beppu

Parks and Recreation Division

a. Any existing management plans, proposals currently on the table for Beppu Park

b. Management problems or Environmental problems of the public park net work and Beppu Park

c. Work force , staff, funding available, annual maintenance allocations for parks network

d. Any Conservation programmes in operation for Beppu Park , beach parks- Shonengahama, Spa Beach

e. Any past studies, or researches carried out related to recreation in Beppu Park

f. Any plans for the future for improving recreation facilities in Beppu

g. Any Income generation from the premises

h. Summary of City parks law, Natural Parks Law (Extract)

i. Any reports on festivals, and other special occasions organized in the park

Lake Shidaka Management Office

a. Any existing management plans, proposals currently on the table for Lake Shidaka
b. Management problems or Environmental problems related to the lake
c. Work force , staff, funding available, annual maintenance allocations for lake Shidaka
d. Any Conservation programmes in operation in Shidaka Lake
e. Any past studies, or researches carried out in Lake Shidaka
f. Any Income generation from the premises

g. Any regulations concerning the Conservation of Lake, Water Quality or buffer zone forest area Any reports on Visitor day, Fishing , Summer festival, at the lake

General Information Needed

1. Any reports on Present Status of outdoor recreation and leisure patterns in Japan

2. Any Inventory of leisure facilities in Beppu

3. Regulations, policies related to outdoor recreation, leisure

4. Any plans for the future for improving outdoor recreation facilities in Beppu

5. Other sectoral plans affecting recreation of which may affect the future of the leisure facility development in Beppu

6. Any past studies, or researches carried out on recreation in other recreational facilities other than the visitor records in Beppu

Appendix 4

以下の情報を求めています

Tourism and Community Development Division (観光、地域発達課)

(i) 別府市のレジャー施設の一覧

(ii) レクレーションや、レジャー施設の発展のための、現存の運営計画、現在の検討中の提案

(iii) 観光国家促進基本法、観光国家促進計画についての概要のレポート

(iv) 日本のレクレーションや観光と関連のある機関-例えば、国家レクレーション連合、レクレーション科省、日本体育大学、日本観光庁についてのレポート

Hot Springs Management Division (温泉マネジメント課)

1. レクレーションや観光に関してなされた、明礬温泉や他の温泉施設の効能についての、以前の研究や調査

(ii) 明礬温泉や他の温泉施設の水質、蒸気の性質の調査

(iii) 公共の温泉施設での、従業員、資源、年間のメンテナンス額

(iv) 現存する運営計画、公共施設発展のための現在検討中の議案

(v) 温泉施設に関連する、運営における問題点または、環境面での問題点

(vi) 温泉法規についてのレポート

(vii) 別府八湯まつりの情報と写真

(viii) 地獄」の情報、「地獄」運営などのレポート

Environment Division (　環境課)

(i)　別府のレクレーションやレジャー施設発展に向けての将来の計画

(ii)　公園や、温泉施設事業の特別なイベントにおける、特に必要でない運営プログラム

(iii)　公園、しだか湖、ビーチ、温泉施設の利用水や空気の調査記録

Urban Policy Division (都市政策課)

i. 別府のレジャー施設の一覧

ii. 市の公園の法規の概要

iii. 別府のレクレーションやレジャー施設発展のための、現存の運営計画、現在の検討中の提案

iv. 別府のレクレーション施設改善に向けての将来の計画

Parks and Recreation Division (　公園レクレーション課)

i. 別府公園のための、現存の運営計画、現在の検討中の議案

ii. 公共の公園組織と別府公園の、運営における問題点または、環境面での問題点

iii. 公園組織の、雇用可能人数、スタッフ、資本、年間メンテナンス額

iv. 別府公園、しょうねんが浜公園、スパビーチの保護管理計画

v. レクレーションに関連してなされた、別府公園についての、以前の研究や調査

vi. 別府のレクレーション施設発展に向けての将来の計画

vii. 市の公園の法規、国家の公園の法規（引用）の概要

viii. 公園での祭りや、他の特別な出来事についてのレポート

Lake Shidaka Management Office (しだか瑚マネジメントオフィス)

i. しだか瑚のための、現存の運営計画、現在の検討中の議案

ii. しだか瑚の、運営における問題点または、環境面での問題点

iii. しだか瑚の、雇用可能人数、スタッフ、資本、年間メンテナンス額

iv. しだか瑚の保護管理計画

v. しだか瑚についての、以前の研究や調査

vi. 既述事項からの収得の発生 （?）

vii. 湖、水質、森林保護領域の保護管理に関する規定

viii. 湖での、過ごし方、釣り、夏休みについてのレポート

General Information Needed (加えて必要とする情報)

i. 屋外の娯楽、そのパターンの日本の現状についてのレポート

ii. 別府のレジャー施設の目録

iii. レクレーションに関する規定、政策

iv. 別府の屋外レクレーション施設発展に向けての将来の計画

v. 将来別府のレジャー施設発展に影響を与えうる、他の分野の計画

vi. 別府の旅行者の記録を除く、他の娯楽施設でのレクレーション関してなされた、以前の研究や調査

Appendix 5

The Questionnaire on Performance of Outdoor Recreation Facilities

Your leisure time may inevitably at some stage may include outdoor recreation. An understanding of outdoor leisure patterns and processes, people's motivations, choices, participation and recreational satisfaction are essential to increase the capacity of existing facilities, avoid mis allocation of resources, create new recreational opportunities, and ensure effective management and planning of outdoor recreational facilities. Hence your kind cooperation is seeking to understand the extent and nature of recreational participation and recreation demand of the community of Beppu by filling out this questionnaire. This would enable me to complete my study on the performance of outdoor recreational facilities in Beppu and making Beppu a pleasant and enjoyable city.

I would appreciate it if you could answer these questions.

Thank You for your kind assistance.

Wish you a Happy Stay !

K. K. A. Chamani Maduranthi

Graduate Student , Ritsumeikan Asia Pacific University, 874 8577, 1-1 Jumonjibaru , Beppu, Oita

Name of the Facility : …….

Date : …….

1. No of people in your group

   (i) Single (ii) two (ii) 3 to less 10 (iii) 10 to 20 individuals (iv) more than 20

2. Age categories of the group

		No of persons
(i)	Infants	
(ii)	School Age	
(ii)	Working Age	
(iii)	Over 55 years	

3. No of males in the group

4. No of females in the group

5. Purpose of visit
   (i) spent free time (ii) health benefits (iii) sight seeing (iv) other

6. The distance from individual's home to the facility
   (i) less than 250m (ii)250m less than 1km (iv) 1km to 2km (v) more than 2km

7. Most appreciated qualities of the facility(multiple answers accepted)

   (ii) natural environment (ii) easy access and convenience (iii) diversity of activities (iv) open space and quite (v) other

8. How many times you visited the facility?

   (i) once (ii) 2 to 3 times (iii) 4 to 5 times (iv) more than 5 times

9. How much time you spent in the facility?

   (i) less than 2 hours (ii) 2 to 5 hours (iii) more than 5 hours

10. Adequacy of basic infrastructure facilities (parking, refreshment facilities, rest rooms and toilets)
    (i) Minimum (iii) adequate (iv) maximum
    (iii) more than required

11. Adequacy of information boards and visuals, sign boards
    (i) Satisfied (ii) not satisfied (iii) no comments
12. Adequacy of staff assistance provided
    (i) Satisfied (ii) not satisfied (iii) no comments

13. Any difficulties encountered or inconveniences caused related to the facility
    (i) noise (ii) overcrowded (iii) safety (iv) poor maintenance

    (v) Others (please specify the pressures/ inconveniences caused)

    ……..

14. What do you expect more in the facility in future?

(i) Diversity of activities (ii) Awareness and education
(iii) participatory activities with visitors (iv) others

15. Overall level of your satisfaction on the recreational facility / recommendation to others
(i) Minimum (ii) average (iii) maximum

16. Common reason for you not to participate in the out door recreation activities

(i) Weather (ii) no enough free time (iii) no near by facilities (iv) lack of money

17. Any suggestions you think to improve this facility

……
……
……

18. Any other frequently visiting recreational facilities around Beppu (please indicate the name of the facility)

Public Parks ……
Amusement Parks ……
National Parks ……..
Onsen Facilities ……
Jigoku……
Safari Parks ……
Natural Lakes ……
Water Sports facilities ……
Sports Facilities ……
Rope way ……
Aquariums ……..
Museums ……..,
Art Galleries ……..

Thank You for your kind cooperation

Appendix 6

公共野外施設の持続可能性に関する調査

アンケート調査へのご協力お願い申し上げます。

私たちは様々な野外レジャーを楽しみます。別府にも数多くの野外施設が整っています。しかし、人々がレジャー施設を選ぶ時、どのような基準で、何を目的に、どのようなことに満足するのかを把握していなければ、有効に活用されることが困難になり、不必要にレジャー施設を建設し、自然を破壊したりすることになりかねかせん。

私の研究は野外レジャー施設の無駄をなくし、皆様のニーズに最大限お答えし、その上で自然環境を壊さず持続可能な施設になるにはどのようにすればよいかを検討していくものです。そこで皆様の率直なご意見をお聞きし、レジャーへの参加程度を把握することにより、既存設備をいかに有効活用していくかの検討材料とすることを目的にこのアンケートを実施することになりました。

このアンケートでご記入いただいた内容については、この調査の目的以外には使用いたしません。どうか皆様の率直なご意見を賜りますようお願い申し上げます。

立命館アジア太平洋大学　大学院生
K.K.A. Chamani Maduranthi
〒874-8577　別府市十文字原 1－1

ご訪問された施設名を教えてください ：　　.....

ご訪問された日付を教えてください　：　　.....

1. ご同伴者の人数についてお伺いします

(i)　一人　　(ii)　２人(ii)　　３人～９人　(iii)１０人～２０人　　(iv)２１人以上

2. それぞれの年齢ごとの人数をお答えください。

		人数
(i)	乳幼児	
(ii)	学生	
(iv)	社会人	
(v)	５６歳以上	

3. 男性の人数

4. 女性の人数

5. 施設の利用目的

(iv)　余暇を過ごすため (ii) 健康のため (iii) 観光　(iv)　その他

6. ご自宅からどれくらい離れていますか？

(i)　２５０m未満　(ii)　２５０m以上１ｋｍ未満　(iii)　１ｋｍから２ｋｍ　(iv) ２ｋｍより離れている（２ｋｍは含まない）

7. この施設において一番利用価値があると思われる点はどんなところですか

(i) 周りの自然　(ii) 交通の便がいい (iii) 様々なアクティビティーがあるところ (iv)　広々としていて開放的なところ　(v)　その他

8. いままでに何回この施設を利用しましたか

(i) １回　(ii)　２～３回　(iii)　４～５回　(iv)　６回以上

9. この施設にどのくらいいましたか

(i) ２時間未満　(ii) ２～５時間　(iii) 五時間より長く

10. この施設の設備（駐車場、トイレ、休憩室など）について

(i) 最低限　(ii) 普通　(iii) 適当(iv) 最高 (v)　必要以上によい

11. 案内板、地図について

(i) 満足　(ii)　満足できない　(iii) コメントなし

12. スタッフについて

(i)　満足　(ii)　満足できない　(iii) コメントなし

13. この施設でなにか不便なことや悪いところはありましたか

(i)　騒音　(ii) 人が多すぎた　(iii) 安全面に問題あり　(iv) 整備が行き届いていない

(v)　その他　お気づきの点がありましたら具体的に

……

14. この施設に今後望むことは何かありますか

(i) アクティビティーのさらなる充実　(ii) 気遣いや教育　(iii)　来場者参加型のアクティビティー　(iv)　その他

15. この施設の全体的な評価/　ご意見

(i) 最低限　(ii)　　平均以下　(iii) 平均 (iv) 最高

16. 野外のレクリエーションに参加しない主な理由はどのようなことですか？

(i)　天気　(ii)　　十分な時間がないから　(iii) 近くに施設がないから　(iv) お金がもったいない

17. この施設がよくなるためにどのようなことをすればいいと思われますか

……

18. 別府近辺でよく行かれる他の施設を教えてください。（具体的な名前をご記入ください）

公共の公園 ……
遊園地……
国立公園……
温泉……
地獄めぐり……
サファリパーク……
湖……
水上、水中スポーツ施設 ……
スポーツ施設……
ロープーウェイ ……
水族館……
博物館……
美術館……

アンケート調査は以上です。ご協力ありがとうございました。