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Study and Practice of Forest-bathing Field in Japan

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Abstract Japan has made remarkable achievements in the study and development of forest tourism for health care reason. Through the comprehensive investigation into the development of forest-bathing field in Japan, this paper studied the forest tourism for health care factor in Japan and concluded the evaluation standard and construction of forest-bathing field, as well as personnel training. In the end, some suggestions were proposed for the study and development of forest tourism for health care factor in Asia.

Key words Forest tourism for health care reason, Forest-bathing field, Forest therapist

Along with the deteriorating environment and the growing awareness of ecology, forest tourism for health care factor is catching more and more attention. As an essential form of forest tourism for health care factor, forest-bathing has become one of the optimal ways to release stress, refresh both body and mind, and stay healthy in terms of its natural soothing environment and special health care effects. In 2007, International Union of Forest Research Organizations started a five-year plan called Task on Forests and Human Health to strengthen cooperation among countries in studying the relation between forest and human health^[1]. Later on, developed countries have started studying and practicing forest and human health. In 2004, for research in health care effect of forest on people, Japan founded the "forest therapy seminar" and became a model in the aspect of forest tourism for health care factor in other countries. Asian countries have abundant forest resources of enormous health care value, which suggests promising future in promoting forest tourism for health care factor. However, the study on forest tourism for health care reason in other Asian countries except from Japan still is in the initial stage, and the development plans are too general. Therefore, this paper introduced and summarized the development of forest tourism for health care reason in Japan, which served as a reference for other Asian countries.

1 Research progress in forest tourism for health care reason in Japan

1.1 The origin and development of forest bath The primary form of forest tourism for health care reason originates from the forest bathing in Western Europe. German is the forefather of forest bath and 40% Germans went to the forest once in a month. Besides, "the anion bath method" in France, "the pythonceidere method" in Russia and "the relaxation method"^[2] in Korea promote the popularity of forest bathing to a certain degree.

Forest bath, a derivative word from sun bath and beach bath, is one kind of air bath from three kinds of health care bath (sunlight bath, water bath and air bath). Forest bath is to use the limited forest climate, anion and phytoncider to make people feel refreshed and to build a healthy body. So far, most scholars categorize forest bath as ecological health care activity, believing that forest bath is a way to improve the body through inhaling flora's spirit from plants and the dense anion in the atmosphere^[3], or is a kind of tourism to use the special ecological environment and certain facility within the forest to achieve health care purpose^[4]. Based on the original connotation of forest bath in Japan, the idea of forest therapy came into being. Japanese forest committee explained that the forest therapy has ensured the medical effect of forest bath as to utilize forest environment to build mental and physical health. In other words, forest therapy is to walk, to do sports, or even to have a rest in the forest for health care reason. Forest therapy is the derivative of forest bathing and both forms only differ in level. So far, each forest bath field and scholars in Japan universally acknowledged that forest therapy is to use the five senses to feel the nature, or to use the forest climate and territory to maintain and build mental and physical health of people. Therefore, forest bathing and therapy have become the main form of forest tourism for health care reason in Japan.

Japanese scholars believe that the forest bathing include three important factors: firstly, refined forest environment, namely dense anion, fresh air and pleasant climate, *etc*; secondly, health care activity, such as walk, sports, and touching plants, *etc*; thirdly, health care effect, which means improvement of immunity, clear-mind and vitality as well as spirit to people^[5]. Based on these, it is concluded that forest bath means that people use the quiet, clean and refined forest environment to achieve physical health and release of stress through walk, yoga and breathing in the forest.

1.2 Study on forest tourism for health care reason in Japan

Study on forest tourism for health care reason in Japan originates from the practice of forest bathing when Japanese forest and field bureau proposed forest bath for the first time in 1982, which by

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then meant to bring in German forest therapy and the Soviet Union pythonceidre science and to carry out abundant theoretical studies and empirical analyses. So far, studies on the forest tourism for health care reason focused on forest medical science. *The Forest Medical Science and the Forest Medical Science II* expounded the function and mechanism of forest in improving health from the aspects of psychology, physiology, immunology and forest science, demonstrated the latest achievements in forest bath being able to enhance anti-cancer capacity within people and to improve immunity, and formulated physical evaluation system and designs of forest therapy^[6], which not only demonstrated the good result of forest bath but also provided concrete reference for the development and promotion of forest bath. What's more, some scholars studied forest therapy from administrative, environmental and engineering aspects. To be specific, the significance of forest bath to the society and construction of forest health care field were discussed from the administrative angle^[7]; the popularity of forest bath catering to the modern health care sports and the medical fee and financial expenditure loss from strengthening human health through forest bathing were revealed from the engineering angle^[8]. The influence of forest therapist was studied^[9]. According to the published papers, researches on the forest tourism for health care reason emphasize on forest bathing and have preliminarily proved that forest bath can improve people's immune system and anti-cancer capacity, which laid basis for the further operation of forest tourism for health care reason in the future.

2 Practice of health care tourism in the forest in Japan

2.1 Background of the booming health care tourism in the forest in Japan

2.1.1 Abundant refined forest resources. The most fundamental condition of forest tourism for health care reason is forest, which happens to be the absolute advantage to Japan. According to statistics from Japanese Forestry Department, there are 25.12 million hm^2 forestry lands in Japan while the entire country simply has 37.79 hm^2 , which suggests that forestry lands cover 66.5% of Japan's overall land. In addition, another important reason for carrying out forest tourism for health care reason is the pythonceidre from the tree, a substance that can ease the mind and relieve stress. Study indicates that conifer has lots of pythonceidre. According to the statistics, coniferous trees accounts for 53% of the total amount of trees, and 98% of artificial trees are coniferous trees. Therefore, Japan is suitable for the development of forest tourism for health care reason.

2.1.2 The pressing need of public health care. First of all, the leading aim of forest tourism is to relax both the body and the mind and to stay healthy. Statistics showed that two thirds Japanese die from diabetes, obesity, high blood pressure and hyperlipidemia, *etc.* In order to cure and prevent these kinds of diseases. Japan initiated the "21st century fitness campaign" in 2000. The favorable effect of forest bath, a feasible form of healthy activity, caters to

the original intention of improving citizen's health level and can allay the financial burden for the government. Additionally, people would have a sense of happiness when they go in to the forest and embrace the nature. After all, people have lived in the forest for five million years. The beautiful memories of smelling the fresh air still hover in people's subconscious even though the urbanization and industrialization isolated people from the nature^[10]. Furthermore, Japan made the policy of "developing tourism to thrive the economy" in 2006 and determined to improve the total domestic travelling consumption to 30 thousand zillion yen till 2010, which means that forest health care tourism can develop under this background. In addition, the active promotion of forest tourism for health care reason can reduce medical fee and social insurance to a certain degree.

2.1.3 Predominant economic condition. In terms of necessity, when the income per capita in a country reaches 1 000 dollars, sightseeing tourism is in the thriving stage. When the income per capita is up to 2 000 dollars, vacation tourism begins to develop. When the income per capita is up to 3 000 dollars, vacation tourism becomes the main form of travelling to an ordinary family. According to the statistics of the World Bank in 2008, the GNI per capita was 34 023 dollars, which meant that supreme economic condition made each Japanese a potential traveler. A survey on the consumption motivation of Japanese citizens suggested that the leisure activity accounted for 34.4% of overall consumptions. An investigation of forest bath in 2003 showed that 67% participants hoped to relieve the stress, 70% participants hoped to soothe the mind and 69% participants hoped to keep healthy. Thus, forest tourism for health care purpose has a promising future.

2.2 Measures to development forest tourism in Japan

2.2.1 Formulating censor standards and promoting unified appraisal. In order to develop forest tourism for health care reason, the government and relevant organizations start to draw up standards for forest bath and promote unanimous field selection. In 2004, Japan established "Forest therapy seminar" to work on the forest tourism for health care purpose. Later on, concrete forest bath evaluation standards were formulated, which included eight factors in two aspects, natural social condition and management service. All together, there are 28 evaluation standards (Table 1). In the meantime, special censor committee is established to appraise forest bath field selection to ensure the advance of forest bath field construction.

2.2.2 Promotion of forest bath field construction. In 2004, four programs: identification of forest therapy field and trail, popularity of forest therapy, discussion of forest bath and personnel training policy, were drawn up as soon as the forest therapy method in Japan was carried out. Until April in 2010, there were 42 forest bath fields and trails, and two more fields were declaring the authority. Those fields cover most places in Japan (Table 2).

2.2.3 Focus on personnel training. In the development of forest tourism, Japan emphasized on the personnel training. Since 2009, more than thousands of people passed the specific exam to become

a professional forest therapist, who together with associate guide provides professional guidance to tourists so as to improve forest bathing effect.

The development of forest bath in Japan has drawn attention from both the government and ordinary citizens. Many administra-

tive departments support this project. Additionally, many academic organizations such as forest comprehensive study bureau, Japanese health committee and forest medical science committee, and social corporate bodies like forest society carried out various seminars to draw up various policies.

Table 1 Censor standard of forest bath field in Japan

Level	Evaluation factors	Evaluation
1 Natural and social environment	1.1 Refined natural environment	Good sensual feelings Various natural resources Without harmful substances System to safeguard the environment
	1.2 Service facilities	Design and management of trail in the forest Forest resources around the equipment Consideration for the inabilities Safety mechanism and medical departments
	1.3 Accessibility	Appropriate customer circle Public transportation Accessibility of private cars Parking lot
2 Management and service	2.1 Management	Establishment of a bureau Promotion of civil organization Management and operation of forest equipments Mechanism to coordinate local citizens
	2.2 Menu of forest bath	Ways to provide relevant menu Formulation of exact menu Provision of facilities Provision of health care facilities
	2.3 Local citizens' approval	Provision of free service One-stop window Guides for forest tourism
	2.4 Plans, sustainability and development	Short-term plan and long-term plan Sustainability Advertisement Personnel management
	2.5 Advantages	Proposal to develop regional characteristics

Table 2 Forest bath fields(trails) distribution in Japan

Places	Field numbers	Trail numbers
Hokkaido and northeast places	5	1
Kanto region	15	3
East sea	4	1
Shikoku	5	0
Kyushu and Okinawa	10	0

3 Experience in developing forest tourism in Japan

The development of forest bath field and trail in Japan provides a favorable reference to other Asian countries in developing forest tourism for health care reason. Experience of promoting forest tourism in Japan is analyzed from the following three aspects.

3.1 Government guidance and academic support In the operation of a forest bath field, government is the main responsible party. The government's guidance and support play significant roles. In actual development, it is the government who comes up with perfect scientific development and operation system, which are the indispensable insurance of forest health care development. In academic aspect, many scholars take the leading roles in establishing forest bath, personnel training and formulation of forest bath, etc.

3.2 Strengthening public acknowledgement Though each country is carrying out forest tourism, so far people know little about forest bath, which is the reason for wider popularization and publication. Japan has introduced each forest bath field and many special websites keep updating information about forest tourism. Besides, the official website in each place and specific website in some fields have introduced forest bath. Furthermore, countless television programs have reported news about forest bath. Other countries have hardly reported anything about forest bath or forest tourism for health care purpose. As a result, people are strange to such new product. So in order to promote forest tourism, it is necessary to use the network, television and other measures to promote tourism and enhancing acknowledgement of forest tourism is the only way out.

3.3 Taking action Only within several years, Japan not only has started the forest therapy seminar, but also has proved the systematic effect of forest bathing. In recent years, many countries eager to build forest bathing place, but the concrete program and route are not clear. Therefore, we have to learn from Japan in the aspects of forest bathing place construction and management, forest bathing menu and trail designs, as well as personnel training.

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4 Conclusions

The study shows that the soil erosion has significant negative effects on agricultural production. The greater the share of soil erosion and the deeper the extent of soil erosion, the greater the negative impact on the agricultural GDP. Due to poverty and low level of productivity, the economic growth is mainly dependent on land, labor, capital and other inputs, forming extensive mode of economic growth. Extensive economic growth has the characteristics of high input, low output, causing the following damage to the ecological environment: (1) It wastes valuable resources, and accelerates the process of resource depletion; (2) It discharges excessive pollutants to the environment. (3) The environmental damage can deteriorate health and cause diseases, resulting in poverty.

In the area of soil erosion, the land productivity is not high; the structure of agricultural production is single; the agricultural capital accumulation is insufficient; poor farmers can not afford to expand reproduction. So they have no choice but to take the road of expanding land for reproduction, and irrespective of the agricultural suitability, turn woodland, grassland, and steep land into farmland. However, the ensuing problems are soil erosion, long-term overloaded operation of land, and degradation of land resource, gradually losing ability to support. With the degradation of land quality and vicious population expansion, it causes the predatory exploitation of the land, triggering a new round of land reclamation. Especially in the food production process, poor backward mountainous areas mostly follow the predatory extensive operation without the ecological awareness, to increase the yield by continuous deforestation, thus resulting in a vicious circle of "population growth, farmland expansion, forest degradation", making it more difficult to solve the problem of food and clothing. Finally, the soil erosion areas are consigned to the long-term poverty trap.

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4 Conclusions

Through overall investigation of the core product of forest tourism in Japan, this paper studied the forest tourism for health care reason in Japan, and concluded the experience in forest bathing field evaluation standard, field construction and personnel training, which provided reference for the development of forest tourism in other Asian countries. Yet, the study and development of forest tourism need cooperation among various subjects and departments so as to realize sustainable development and promote low-carbon traveling.

References

- [1] HANNU RAITIO. Forests and human health-global issues in research and Practice[J]. Japanese Journal of Hygiene, 2008, 63(2): 213.
- [2] PIAO FZ, LI JY. Forest medicine II forest treatment in Korea[M]. Asaku-

References

- [1] Rural Social and Economy Investigation Division, National Bureau of Statistics. China rural poverty monitoring report[M]. Beijing: China Statistics Press, 2006. (in Chinese).
- [2] Rural Social and Economy Investigation Division, National Bureau of Statistics. China rural household investigation yearbook[M]. Beijing: China Statistics Press, 2006. (in Chinese).
- [3] WANG LF. Rural poverty population quantity reducing 0.228 billion[EB/OL]. (2007-0526) http://news.xinhuanet.com/fortune/2007-05/26/content_6156519.htm. (in Chinese).
- [4] ALHASSAN RM, DIAO XS. Regional disparities in Ghana: policy options and public investment implications, discussion paper[M]. Washington, DC: International Food Policy Research Institute(IFPRI), 2007. (in Chinese).
- [5] FAN S, LUO XP, ZHANG XB. Village inequality in Western China[M]. Washington DC: International Food Policy Research Institute (IFPRI), 2006. (in Chinese).
- [6] LI Z, SUN RH. Ecological sensitive area and impoverished area correlation research[J]. Rural Economy and Society, 1994(5): 49-56. (in Chinese).
- [7] YANG HK. Karst desertification is a kind of geological and ecological disaster[J]. Marine Geology & Quaternary Geology, 1995(3): 137-147. (in Chinese).
- [8] QU FT. Sustainable development theory and policy selection[M]. Beijing: China Economic Press, 2000. (in Chinese).
- [9] TUERXUNAYI AIBIBULLA, NUERBAYI ABUDOUSHALIKE, ADILIJIANG KUERBAN. Evaluation of animal and plant resources status quo after the reservoir construction in Turks River and protection measures[J]. Meteorological and Environmental Research, 2011, 2(6): 96-98. (in Chinese).
- [10] World Bank. China: Overcoming rural poverty[M]. Washington DC: World Bank.
- [11] FAN S, ZHANG L, ZHANG X. Growth, inequality, and poverty in rural China: the role of public investments(research report 125)[M]. Washington, DC: International Food Policy Research Institute(IFPRI), 2002.
- [12] WANG Y, SHI GQ, CHEN SJ. Soil erosion and poverty——experiences and inspirations drawn from WB loaned loess plateau watershed rehabilitation project[J]. Research of Soil and Water Conservation, 2006, (5): 36-38. (in Chinese).
- [1] ra Publishing Co Ltd, 2009: 59-66. (in Chinese).
- [3] XIAO GM, WU CC. Development and utilization of forest bath tourism in China[J]. Journal of Beijing Second Foreign Language Institute: Tourism Edition, 2008(3): 70-74. (in Chinese).
- [4] LI XM. Development of forest bath and bathing place[J]. Jiangxi Forestry Science and Technology, 2004(1): 24-26. (in Chinese).
- [5] LI Q. The function o forest bath[J]. Japan's Anti Aging Medical Journal, 2009, 5(3): 50-55. (in Chinese).
- [6] MIYAZAKI RAN. Physiological reaction on forest environment: Comfort evaluation of forest environment factors[J]. Wood Industry, 2007, 62(10): 442-447. (in Chinese).
- [7] HIRANO HIDEKI. Forest, environment policy and forest treatment[J]. Japanese Journal of Hygiene, 2007, 62(2): 269-272. (in Chinese).
- [8] KOBAYASHI AKIO. Cure space of forest[J]. Japanese Journal of Hygiene, 2007, 62(2): 275-276. (in Chinese).
- [9] KAGAWA TAKAHIDE, IGAWA HARAHIROHITO. Study on promenade in forest[Z]. LRJ70(5), 2007: 597-600. (in Chinese).
- [10] MIYAZAKI RAN. Naturality and comfort[J]. Japanese Journal of Hygiene, 2007, 62(2): 272-274. (in Chinese).