

Article ID: 1001-0742(2001)04-0514-06

CLC number: X2

Document code: A

The eco-origins, actions and demonstration roles of Beijing Green Olympic Game

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Abstract: The 29th Olympic Game will be held in Beijing in 2008. It will be a green game to promote sustainable development of men, cities and regions through ecological development advocating "man and nature be in one". "Eco" here means a process, a driving force, an action, a culture and a kind of vitality leading to sustainable development. It is a mechanism embodying the Olympic spirit of competition, cooperation and self-reliance. The paper explained the ecological significance, connotation and objectives of Beijing Green Olympic Game. Ten major ecological heritages of Beijing have been investigated including ecologically sound landscape, culture, transportation, physical exercise, health care, sanitation, food, family relationship, agriculture, and human ecological totality. To preserve or restore the above mentioned old tradition, a green Olympic action plan has been made out in Beijing initiated by NGOs, supported by entrepreneurs and coordinated by government agencies. Four kinds of eco-engineering have been planned for blue sky, clean water, green land and eco-city development. The demonstration role of Beijing Green Olympic Game to developing regions and countries is also discussed.

Keywords: eco-origins; actions; demonstration; Beijing; green; Olympic Game

Introduction

The 29th International Olympic Game will be held in Beijing in 2008. The Olympic Games have not been held in developing countries since the Mexico Olympic Games in 1968. It is exceptionally significant to hold the great game in Beijing, a densely populated and fast growing megalopolis with rapid economic and environmental changes.

Beijing boasts of a history of more than 3000 years. There more than 30 millions citizens who are living in Beijing-Tianjin-Tanggu Region, where the Olympic Games are to be held. Moreover, with a rapid development of traffic network in China, more than 800 million people will be able to get to Beijing within 24 hours by highway and railroads.

China, a country with a long history of civilization, has a population of 1.3 billion composed of 56 ethnic groups and 80 % of its territories are still underdeveloped. It would be exceptionally important for protection of human rights, elimination of prejudice and dissemination of the Olympic spirit, if hold the Olympic games in such a big country and let as many as possible people to participate in and experience the magnificent sport occasions.

China is famous with its long history of mass sports in health enhancement, which leads the world in both scale and effects. Every morning crowds of people could be seen in parks of all cities across the country practicing various bodybuilding sports or martial arts. This results in a significant enhancement in people's health. Taking an example, the average life span of the residents in Shanghai has reached 80 years.

Olympic Games place high value in participation, development, and protection of human dignity and environment. In recent years, Beijing has achieved world-renowned rapid in economic development and urban construction. However, it also leaves some environmental problems to the city and the environment in some aspects needs urgent improvement. Nevertheless, just as Baron Pierre de Coubertin put it, what counts is not victory, but making efforts, not conquest, but striving (Wu, 1989). The enthusiasm of Chinese in sports, peace, nature and culture is no less than that of Western people. But the most important concern about developing countries' environment is not being but becoming. A detailed action plan of Eco-Beijing Development has been made out from both ways of bottom-up and top-down for significantly improving the environment. The plan has shown that the government agencies, the enterprises, the publics and NGOs are determined to cooperatively make great efforts in Eco-Beijing Development, which includes the development of eco-industry, eco-landscape and eco-culture. The scale, strength, speed and self-consciousness of real actions in improving the environment of this plan will surprise the world. We are confident with our ability to create a new Green Olympic Games model through a great leap of environmental improvement and capacity building. The model will be an example for 80 % of the world population in spreading the Olympic spirit to ecological development and turning disadvantages of environmental pollution into advantages of overtaking and surpassing those ahead.

China is a developing country with a large population, rapid development, a backward starting point, and also one with a long history and diversified oriental culture. A Green Olympic Game held in Beijing will show the world a human ecological image characterized by the following four qualities:

Multitude: The whole nation will participate in, support and benefit from the games by offering ideas and dedicating

efforts. The number of people directly or indirectly involved, enjoyed by means of TV or Internet, and experienced and inspired from the Games will certainly create a new record in the history of Olympic Games.

Tradition: China's ancient ecological culture of "man and nature be in one" integrated from Confucianism, Taoism and Buddhism, especially its long human ecological tradition in mass healthcare sports, healthy Chinese food, Yin-Yang and Five-Elements philosophy, Chinese medicine, Feng-Shui (landscape) and gardening etc., will certainly exert a special influence on future Olympic games.

Speediness: Beijing Olympic Games will be marked by its fast progress in economy, science and technology, environmental improvement, ecological development, and social participation and consciousness.

Frugality: Inspired by Chinese' merit of frugality, a reform of the Olympic Games will be promoted to turn the commercialized tendency of huge investment, huge advertisement, high environmental impacts and high profits orientation into a sustainable model of high efficiency and low consumption, high equity and wide participation, integration of west and east advantages, and culture and ethics orientation.

1 The ecological concept of the Green Olympic Game

Different from the Olympic Games held at Sydney, Beijing Green Olympics will be an ecological event characterized by the time of globalization and information. It needs the supports of harmonious ecological service, environmentally sound high-tech and the long cultural tradition of "man and nature be in one". To combine the old tradition and the new transition to realize "New Beijing, Great Olympics", a new integrative concept of eco-Olympics has been developed which consists of green Olympics, scientific-technological Olympics and cultural Olympics, based on the principles of physical, economic and cultural ecology respectively (Fig.1).

"ECO" here means a driving force, an action, a culture, a kind of vitality and an adaptive process leading to sustainable development. It is a kind of social behavior, which push forward development while conserving the environment and it is also a mechanism embodying the Olympic spirit of competition, symbiosis and self-reliance. It means internal harmony between structure and function, systematic health in dynamics and cybernetics (Wang, 1999). The Olympic spirit enriched with ecological ingredients will be as vital and sustainable as natural life.

The Green Olympic spirit needs not only morphological green (blue sky, green land and clean water), but also functional green (eco-services, eco-institution and eco-consciousness). Furthermore, it seeks a dynamic green that brings man's potential to its full play according to ecological principles. To achieve this, it is necessary to green not only the landscape, but also the process of production and consumption as well as people's minds and behavior, which means a further sublimation of the Olympic spirit.

The overall objective of Beijing Green Olympic Game is to implement the Olympic Agenda of 21st Century formulated by the International Olympic Committee, to ensure the success of the game through ecological development, to promote sustainable development of men, cities and regions through Green Olympic Game. Its special international goals are:

To promote mutual understanding, friendship and unity among different peoples, to stimulate and disseminate the ecologically sound Olympic spirit of striving, competition and cooperation, to ensure better use of Olympic contest resources, to speed up the extension of the Olympic spirit and strengthen ecological development under the banner of Olympic Games.

To educate the youth all over the world and influence peoples of all countries by integrating the oriental ecological philosophy of "man and nature be in one" into the new Olympic spirit of the 21st century.

To enhance, with green Olympic games as the forerunner, international exchange of and cooperation in technology and culture, and to promote the transition from commercial society to ecological society.

Its domestic goals are: To promote value change, to enhance physical and psychological health of citizens and to speed up the ecological civilization; to enhance the improvement of urban environment and the accumulation of urban eco-assets, and to improve regional ecological services; to promote industrial transition, urban development and capacity building towards sustainable society.

2 Ten major ecological heritages of Beijing

China, one of the four origins of ancient civilization in the world, has a long tradition of human ecological philosophy, which maintains that one can examine changes in society by observing nature and manage the landscape by adjusting humanity. The ancient Chinese feudal society had maintained its over-stabilized structure for more than 3000 years and nurtured a special Chinese ecological civilization. The force behind this was the appropriate understanding of the relationship between climatic, geographical and human features and adhered to the ecological concept of totality, recycling, symbiosis and

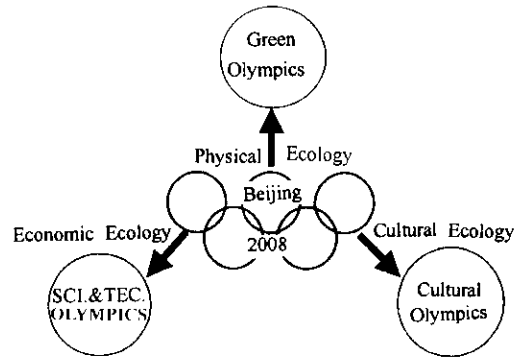


Fig.1 The connotation of Beijing Eco-Olympics

self-reliance (Wang, 1990). Beijing, the capital of a number of ancient dynasties, enjoys following ten major ecological heritages:

Ecological landscape: The Beijing region is backed by the Yanshan Mountain and extends east toward the Bohai Bay. It is crisscrossed by the Haihe River, which links the Grant Canal and the Great Wall at the foot of the mountain, unfolding China's human ecological picture of a history of 5000 years and a land coverage of millions of km². Wanshou (Longevity) Hill, Kunming Lake, together with the ancient city moat and Jingshan Hill, present a perfect combination. The harmony between imperial halls, altars, gates and bridges and the harmonious co-existence of imperial gardens, grand mansions and ordinary people's quadrangles present a vivid human ecological scenery depicted by the famous ancient Chinese painting "The River Scene on the Day of Pure Brightness". This embodies Chinese's superlative workmanship in integration of mountains and rivers, wind and water (Feng-Shui), man and nature, and form and essence, and provides an ideal natural and human ecological location for the 2008 Olympic Games (Wang, 1996a).

Ecological culture: Ancient Chinese culture absorbed and integrated theories and ideas from Confucianism, Buddhism, Taoism and various other schools of thoughts. Through thousands of years an ecological culture came into being in China, which combined natural laws, management principles, moral and ethic norms and spiritual values. Five ideals of man in nature, utility, morality believes and universe supplemented one another. Man and nature were actually one existence, Yin (negative force) and Yang (positive force) supplemented each other and formulated all ecological relationships. The five elements promoted and restrained with each other, including fire, water, soil, wood and metal, and Zhong Yong doctrine was advocating that things should not go to their extremes but keep to the mean and be frank and honest. All these and the idea of wholeness, coordination, recycling and self-reliance will greatly add to the ecological concept of the Cultural Olympics (Wang, 1996b).

Ecological transportation: The transportation in old Beijing mainly relied on rickshaws, animal-drawn carriages, boats and pedestrians, which have gradually been replaced by bicycles and public transportation systems since 1950s. There are currently more than 10 million bicycles in Beijing. This won Beijing a name of a city on two-wheels. To enjoy the bicycle travel in the huge city is an interesting spectacular during the Olympic Game. And how to keep this healthy transportation mode in the downtown in the new century is also a big task, which the Olympics Game can promote.

Ecological physical exercise: Mass bodybuilding activities, with the middle-aged and elderly as the main practitioners, are popular and going on vigorously all over China. Every morning crowds of sports enthusiasts could be seen in parks, schools' playgrounds and community sports grounds of all cities and towns across the country. Accompanied by some pleasant music, people are practicing various kinds of bodybuilding exercise, sports, dances or martial arts to keep their bodies and minds in good health or to learn some self-defense skills. The number of participants and the variety of activities they practice may really be rated as a wonder of the world. Self-defense in China relies on martial arts instead of weapons. This reflects the Olympic spirit as it is safe to society as a whole and has little negative impacts on the environment.

Ecological health care: Chinese people take disease prevention and active measures for their health care before it goes in disorder, paying more attention to the integrative function of the body with its environment. Traditional Chinese medicine looks upon the human body, physical and social surroundings as a whole functional system and lays great stress on systematic nursing. According to Chinese medicine, what is important in health care is to take active medical measures and practice disease-preserving exercise to keep physically and mentally fit and increase vital energy to protect the body from ecological deterioration. This is an ideal method of health care, which improves people's physique, stamina and willpower and reflects the real Olympic spirit.

Ecological sanitation: Various kinds of wastes recycling stations and a large contingent of waste recovery workers can be found in cities and towns all over China. Most of the household wastes is recycled and turned into useful materials. Residents in old times used to recycle human wastes through the old-style night-stool. Night soil is collected and, together with other organic wastes, delivered to the suburbs as manure for farmland. This is good for ecological balance of the soil, prevents the pollution of river systems and saves water. At present, various pilot eco-sanitation systems, including methane-generating, water-free or water-saving, and ecological lavatories, are being developed in Beijing. They are expected to make contributions to the ecological Olympics and to the ecological development in the fields of sanitation, beautification, provision of convenience, economical use of water and energy, and development of manure resources.

Ecological food: Food is the foremost necessity of people and the agricultural China has developed sophisticated Chinese diet culture. The eight major cuisine styles all pay great attention to the color, smell, taste, shape and sound effect of food. People enjoy the plant protein and vegetarian food dominated by bean curd and fresh vegetables. The free and fresh morning markets dominate super market all over China for its fresh and nutrient-rich family-produced local foods. And there are also various medical foods that help improve health by balancing the Ying and Yang relationships in human body. All these reflect the ecological culture of "man and nature be in one". Not only do good foods provide nutrients and sharpen appetites, but the preparation and processing processes are also a kind of interaction between man and nature as well as a high-level esthetic appreciation.

Ecological family: Chinese family places high values on unity. People have a strong sense of responsibility to provide for the old and bring up the young, pay great attention to children's intellectual and moral education, and imbue them with Chinese merits of diligence and thrift. Beijing's traditional quadrangles, hutong (lanes) and street parks are good for residents

to exchange ideas and for elderly people and children to enjoy communication with each other and nature. It will be also a great panorama of promoting mutual understanding and friendship during the days of the Olympic Games.

Ecological agriculture: China, a country with a farming history of over 5000 years, feeds over 21% of the world population with only 7% of the world land and water resources. China's agriculture will present another beautiful panorama of agro-forestry fields, tree-shaded roads, wide application of organic fertilizers, integrative pest management arts, inter-cropping and rotation farming, household gardening, returning plant straws to the land, town and village "Feng-Shui" sacred forests, organic and green foods, with each having its own unique features.

Eco-integrity: China's traditional human ecological culture and current institution have the advantage of social integrity and people are greatly concerned with their own working units, respect their superiors, abide by the law and government decrees, have a strong team-adherence and can be easily motivated and take swift actions for a common goal. This shows a strong feasibility of organizing various social resources for the execution of the Green Olympic Action Plan and the substantial improvement of Beijing's environment in short term (Wang, 1996c).

3 Human ecological actions for improvement of the ecoscape of Beijing

To preserve or restore the above mentioned good tradition, a green Olympic action plan has been made out in Beijing initiated by NGOs, supported by entrepreneurs and coordinated by government agencies. Four kinds of eco-engineering for blue sky, clean water, green land and eco-city development have been planned:

3.1 Blue sky engineering

This action includes the implementation of the clean energy project, the natural gas pipeline project, the eco-vehicle project, the eco-boiler-and-chimney project, the dust control project and the renewable energy project. The air above the city proper will reach the national standards for urban air quality by the year of 2008. The exhaustion levels of SO₂ and NO_x will come up to the advanced world standards for large cities. The natural gas pipeline network will be expanded and a second main pipeline transporting natural gas from Shanxi Province to Beijing will be completed in 2007, and the consumption of natural gas will be increased to 4-5 billion cubic meters. Great efforts will be made to popularize the use of solar and geothermal energy and eliminate the use of small and medium-sized coal consuming boilers in the urban areas, thus attaining the goal of using clean energy resources in the whole city. Central heating services will serve over 50% of the built-up area. The priority system for bicycles and public transportation services such as high-speed light railways will be much improved. In 2007, 90% of public transportation vehicles and 70% of taxis will use clean fuels. In 2004, a new tail air exhaustion standard for light motor vehicles, equivalent to Europe's second grade standard, will come into effect. Efforts will be redoubled to control dust generation on construction sites and roads, to prohibit dumping and burning waste in the open.

3.2 Clean water engineering

Ecological engineering for household sewage treatment and recycling will be initiated with a method of combining central treatment systems with decentralized treating techniques, large scale treating facilities with small equipment, and disposal with recycling of waste water. The watershed level planning and management will be encouraged to systematically use, save and recycle various water resources from rain water, surface and ground water to waste water. In 2007, the city's wastewater treatment capacity will reach 2800000 tons per day, and ecological engineering for sewage treatment and recycling will be constructed in main towns and villages. Efforts will be continued to improve the urban river and lake system and to perfect the sewage pipeline and treatment system. The rivers and lakes in the city area, based on their functions, will reach the national quality standards for surface water. The renovation project of the Beijing-Miyun Diversion Canal will be completed, which will help the eco-system restoration and rain water collection, improve the canal's landscape, its aquatic environment and eco-service function. Comprehensive measures will be taken to raise the ground water level, protect the ground water resources and keep them clean and uncontaminated. Industry will be restructured to encourage those water-saving, water-recycling and water-free industries' development.

3.3 Green land engineering

Vigorous action will be taken to motivate people in forestation of desert land, mining areas' restoration, and water and soil conservation. The protection of natural forests will be strengthened, the area of reforestation will be increased in wind-and-sand-scoured areas, and cultivated land in mountains will be returned to forests, resulting in 130000 hectares of new forests. The "Five Rivers and Ten Roads" wind-belt forestation project will be completed, bare sandy soil will cover by vegetation, and soil erosion will be controlled in a comprehensive way. Three ecological green protective belts will be built in the area of mountains, plain and downtown respectively so as to remarkably improve the regional environment. Through enhancement of bio-diversity conservation and eco-management of natural reserves, forests, marshland and bird habitats, the coverage of natural reserves will exceed 8% of the city's total area and the region's green coverage will exceed 50%.

3.4 Eco-city engineering

Efforts will be made to green, clean and beautify the land used by industries and other public purposes, to recycle industrial and household wastes, and to speed up some pilot studies in eco-building and eco-community development. Further work will be done to execute three-dimensional urban greening projects for improving the city's landscape of cement buildings, desert roofs and garbage site, and to increase the area of open space, wetlands and rain-penetration lands. Urban agriculture and forestry will be encouraged, and 100-meter-wide green belts will be built along both sides of the Fourth Ring Road, so that the green coverage of the urban area will exceed 40%. The city's greening engineering shall finally shift to ecological

engineering, with its focus shifting from physical beautification to ecological services. What is sought here is, on the basis of environmental improvement, to meet the residents' physiological and psychological demands and their social needs for communication, learning, recreation, aesthetic appreciation and health improvement (Wang, 1998).

Ecological development demands the involvement of the whole society and the close cooperation between the government, business circles and the public. It is vital to enhance the ecological consciousness of decision-makers, entrepreneurs and the public for stimulating the participation mechanisms. A Joint Committee for Green Olympic Action Plan has been initiated represented by public institutes, enterprises, non-government organizations and citizen representatives. Its mission is to guide, promote and inspect the execution of the Green Olympic Action Plan, defining responsibilities, setting objectives, making detailed executive programs and designing supervisory instruments so as to ensure the execution effects.

3.4.1 Government stewardship

The government will strengthen the implementation of the sustainable development strategy, and improve its scientific, democratic and systematic decision-making and administration. The Green Olympic Action Plan will be integrated with the city's Tenth Five-Year and 2010's social and economic development plan, and the master plan of urban construction, defining the tasks and setting quantitative targets for each government institutes. It shall also make and enforce eco-related laws, policies and standards perfect the regulation of feasibility study and ecological impact assessment for construction project. Various detailed programs and special action plans will be made out to ensure the fulfillment of the overall plan. The government is responsible for coordinating different government departments, businesses, institutions and non-government organizations, and supervises and gauges their annual achievement by the results of their execution of the action plan. Furthermore, the government will accept and subject to the supervision of the mediums and the public in its execution of the plan.

3.4.2 Enterprise involvement

Every enterprise will link the Green Olympic Action Plan with its industrial transition towards eco-production, taking the ISO14000 Environmental Management System as the key link, analyze the life circle of its products, incubate and design of new industrial park and eco-products. Enterprises will also improve their management, establish "green accounting systems", reduce the negative effects on the environment produced in production, processing, marketing, consumption and wastes disposal. In performing these, they will be able to meet the quotas and fulfill the tasks assigned by the municipal government concerning pollution control within the planned period, reduction of pollutants, shutting down and merging pollution generating enterprises, moving them to less sensitive areas or shifting them to green production. While sharpening the enterprises' competitive edge and improving their production, the negative effects of pollution will be turned to positive economic returns and make contributions to the Green Olympics. Various ecological engineering will be implemented related to organic materials recycling, decentralized treatment and recycling of waste water, use of renewable and clean energy resources, ecological sanitary demonstration lavatories, green foods and ecological products production, ecological transportation, ecological building, abandoned land restoration, preservation and sustainable use of eco-diversity, and eco-construction of the Olympic village, gymnasiums and stadiums. In 2007, 50% of the city's enterprises will obtain the certificate of ISO14000.

3.4.3 Citizens' participation

Beijing boasts of large numbers of non-government organizations and volunteer teams at the state, city, district and county levels. Their members come from all walks of life and are all enthusiastic in environmental protection and ecological development. Many of them are students, women, and religious people, minority ethnic group members and scientists and technicians, forming the main force of Green Olympic Action. They will combine the Green Olympic Action with ecological cultural development and take active part in the development of green demonstration, such as green schools, green hospitals, green enterprises, green institutions, green communities and green stores. Each unit should, in accordance with its own advantages, make its own plans for performing eco-related development activities. It is necessary to give full play to these organizations and participants, and encourage people to display their initiative, make active involvement and support their units and communities in fulfilling action plans. The role of mass media in education, publicity, motivation, dissemination and supervision in ecological development will be enhanced. The NGOs will support and supervise government agencies, enterprises, and institutions in fulfilling their ecological development tasks.

4 The demonstration roles of Beijing Green Olympic Game to developing regions and countries

By 2008, the influenced people of Beijing Olympic Games will be 30 million in Beijing-Tianjin region, 1.3 billion in China and 4 billion in Asia respectively.

The competition for hosting Olympic Games itself is a process in which the whole population can learn, understand, follow out and disseminate the Olympic spirit, the Olympic Charter and the Olympic Agenda for the 21st Century. In the same time, it is a process of learning from those countries that have hosted the game in the past.

The seven-year preparation for Beijing Olympic Games includes not only the construction of gymnasium, stadiums and living quarters, but also a systematic process of technological renovation, institutional reform and values change. It is a rethinking and restoration process of traditional industry, traditional culture and traditional landscape, and a comprehensive ecological engineering involving the whole nation.

Beijing Olympic Game's ecological, scientific and technological, and cultural pilot projects will play an important demonstration role to developing countries and regions in promoting their sustainable economic, social and cultural development.

Beijing Olympic Game's will also demonstrate how a fast growing city can learn and adopt developed countries' experience and lessons in urban development, integrate its ecological development with what is going on in other parts of the world, combine modern science and technology with its local natural and cultural ecological characteristics, merge western culture with eastern culture, and promote capacity building of local development.

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