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Dexin Tian
Savannah College of Art and Design

Chin-Chung Chao
University of Nebraska at Omaha, chinchuchao@unomaha.edu

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The Communication Model and the Nature of Change in Terms of Deforestation in China Since 1949

Dexin Tian

Department of Liberal Arts, SCAD-Hong Kong, Sham Sui Po, Hong Kong

Chin-Chung Chao

Department of Communication Studies, University of
Nebraska at Omaha, Omaha, Nebraska, USA

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Address correspondence to **Dexin Tian**, Department of Liberal Arts, SCAD-Hong Kong, 292 Tai Po
Road, Sham Sui Po, Hong Kong. E-mail:dxtian@yahoo.com

Abstract: This article explores the communication model and nature of change in terms of deforestation in China since 1949. Through Lasswell's communication model and the theory of change and via historical analysis and extended literature review, we have discovered: First, Mao's government adopted an effective one-way top-down communication model with Chinese characteristics during 1949 and 1978, which facilitated deforestation in China leading to massive economic dislocation and immense waste of resources. Second, the Chinese government's change to practical ideology brought about new administrative practices of enacting forest protection laws and reorientating the relevant workforces to use available technologies for the production of exported furniture with imported timber. Finally, the paradigmatic shift in the Chinese forest management has partially relocated deforestation from China to other countries, which calls for urgent international attention.

Since 1949, China was developing at the sacrifices of human abuse and environmental degradation with Mao's central government-controlled planned economy. Today, China has universally been hailed for its economic growth at an average rate of 9% during the past three decades. Similarly, China has made its economic achievements at a high cost of severe environmental deterioration. In fact, China has already replaced the United States as the world's largest emitter of carbon dioxide (Chang & Hao, 2007, p. 1).

China's environmental plight and subsequent social and natural catastrophes have attracted extensive and growing academic concern. Some scholars (Cui, 2007; Fang, Chen, Peng, Zhao, & Ci, 2001; Lang, 2002; Wang, 2004) discussed the environmental consequences as a result of the one-sided emphasis on economic development and population growth in China. Other scholars (Economy, 1998; Harris, 2006; Li, 1998; Smil, 1996; Zhang et al., 1999) explored the internal underlying forces of environmentally related behaviors and the overwhelming forces of anti-environmental values as a result of the globalization of capitalism and consumerism. Finally, there are also scholars (Lang & Chan, 2006; Liu & Diamond, 2005; Shapiro, 2001) who studied the impact of China's environmental issues upon the neighboring countries in the globalized world.

From the above, we can see that few scholars have touched on China's environmental issues, especially the organizational change in the Chinese governemnt regarding deforestation from the communication perspective. This study aims to explicate the communicaton model the Chinese government has been adopting and the nature of change in its forestry management from 1949 to 1978 and from 1979 to the present. Meanwhile, the implications for academics and practitioners in the fields of environmental education and communication will also be discussed.

Theoretical Frameworks and Research Methods

Communication in this study refers to the social interactions between the ordinary Chinese people and the Central Government together with its affiliated agencies at different levels, which is more organizational rather than interpersonal. Organizational communication refers to "communication within and among large, extended environments" (West & Turner 2007, p. 37). Thus, Lasswell's (1948) communication model of "who says what in which channel to whom with what effect" can serve as the theoretical framework as it clarifies the communication act "as a whole in relation to the entire social process" (p.

216). This model predominantly reveals a one-way communication but sometimes a two-way interaction as well. When the dominant party is afraid of the internal and external environment, the "communication process reveals special characteristics" (p. 228). For the purposes of the present study, we will focus on seeking answers to "who says what," "in which channel," and "with what effect" in the model during the two periods in China.

As for the theory of change, Timmerman (2003) stated, "planned organizational change is characterized as a set of activities and processes designed to change individuals, groups, and organizational structure and/or organizational processes" (p. 304). There are four major types of administrative, technological, product, and human resource change. The implementation of such change is usually the conversion of a technology, product, or idea from conceptual knowledge to certain types of organizational practice (pp. 303–304). In this study, we intend to interpret the "conversion of a technology, product, or idea from conceptual knowledge to certain types of organizational practice" by the Chinese government and the impact on the change in its administration, technology, product, and human resources.

To this end, we will adopt the research methods of historical analysis and extended literature review. As Zhao (2005) pointed out, historical analysis will illuminate on how our present has come about by providing us with a sense of the past while scholarly research findings may help uncovering those significant aspects hidden from view. Specifically, we will critically analyze the primary data such as the government's relevant policies, campaigns, and statistics from sources like *China Forest Resources Inventories*.

Deforestation and Communication in China from 1949 to 1978

lthough ancient China had approximately half of its land covered with forests, China has experienced a cycle of deforestation, mild recovery, and more severe deforestation (Liao, 1987). By 1949, the estimated forest coverage in China remained "13–15% using today's definition" (Zhang et al., 1999, p. 372). Since then, the remaining forests in China have been facing further challenges due to population expansion, construction needs, and misguided administrative policies. For instance, facing both external isolation and internal population growth from 541.7 million in 1949 to 975.2 million in 1978 (State Statistics Bureau, 1949– 1978), the Chinese government propagated that "China would pick itself up after its long history of humiliation by imperialist powers, become self-reliant in the face of international isolation, and regain strength in the world" (Shapiro, 2001, p. 6). To feed its increasing population, the Chinese government mobilized the farmers, about 85% of the Chinese population then, to clear and burn forest tracts in order to enlarge the cultivated land area. Furthermore, to realize his romantic ideal of vaulting China into the forefront of the world economy and clear away any ideological obstacles in his political control, Mao launched the "Great Leap Forward" from 1958 to 1961 and the "Cultural Revolution" from 1966 to 1976. During both nationwide campaigns, devastating deforestation took place. Just as Li (1990) remarked, "a vicious cycle appears to characterize the relationship between population growth and deforestation in China" (p. 255). The question here is what type of a communication model was prevalent then for Mao to turn his fancy ideas into national policies and make almost the whole nation follow him blindly?

The Top-Down Communication Model with Chinese Characteristics

For leapfrogs of development in the 1950s and 1960s, Mao's government was practicing a topdown communication model. This model was composed of the Chinese Central Government led by the Chinese Communist Party (CCP) at the top sending its commanding policies via a network of sound broadcasting, loudspeaker system, newspapers, bulletin boards, and folk media to all the Chinese people. Due to the low cost and easy control, the CCP laid great emphasis on the implementation of a nationwide web of sound broadcasting and loudspeaker systems, which became "fully fledged in 1976" (Zhao, 2005, p. 13). While the sound broadcasting system entered each household to ensure voluntary listening from household to household, the system of loudspeakers on the top of tall trees in the countryside and high buildings in cities was operated by full-time personnel to guarantee regular reception of the CCP policies by the general public.

According to research statistics, broadcasting units increased from 835 in 1955 to 11,124 in 1959, and loud speakers increased from 90,500 in 1955 to 106 million in 1976 (Bishop, 1989; Chang, 1989). Besides, *People's Daily*, which was fully sponsored by the CCP and set the tone for all other media in China, has been the most important newspaper, with a circulation of three million. Until 2003, subscriptions to this newspaper were mandatory for all state-owned enterpirses and government agences (Yin, 2006). Bulletin boards were blackboards cemented in walls standing in conspicous locations in villages and hard boards in obvious positions in urban areas, which carried new announcements or official instructions from Mao and a few other top CCP leaders almost on a daily basis. Finally, the CCP also transformed the traditional modes of Chinese mass media like theater, story-telling, ballad singing, and poetry-reciting as effective channels of oral communication to bypass the widespead illiteracy (Liu, 1964).

Thus, a top-down communication model with special Chinese characteriestics was established. To guarantee efficiency, Mao claimed four tasks for the Chinese media: to propagate the policies of the Communist Party, to educate the masses, to organize the masses, and to mobilize the masses (Bishop, 1989). The media technologies adopted at the time are not necessarily new or advanced, but what "was set in motion" is obviously "a one-way flow of influence-oriented messages from the change agencies at the top to the rural peasantry at the bottom" (Melkote & Steeves, 2001, p. 56). The ordinary Chinese people could just hear one type of voice from one information-disseminating agent, Mao's government, which formulated environmental policies without public consultation. For efficiency, the messages from the government were simplified as short slogans such as:

> Man must conquer heaven.
> Grain is the backbone for the nation.
> Create farmland by encircling the lake.
> Cultivate on the top of mountains, and plant rice at the center of lakes.
> How much courage you have, and how much yield the field will produce. (Bao, 2006, p. 37)

When the Chinese people, especially those in the rural areas, received such messages in the form of offical policies or the "highest instructions" from their sanctified CCP, they treated the messages as commands and immediately plunged into waves of mass campaigns launched by the local governments to seek grain from the lakes, grasslands, and mountain tops and development of the country through "large-scale deforestation, even on sloping, low-yielding land" (D´emurger, Hou, & Yang, 2007, p. 3). However,

their idealist behaviors violated the principles of nature and resulted in massive economic dislocation and immense waste of resources.

Deforestation and Its Impact

Deforestation refers to the conversion of forest to another land use or long-term reduction of the tree canopy cover below a 10% threshold, which is the loss or continual degradation of forest habitat due to either natural or human related causes (The Regents of the University of Michigan, 2006). According to *China's National Forest Resources Inventories*, the statistics of China's forest resources are shown in Table 1.

As the table indicates, up to 1981, forest area in China had been declining from 121.9 million hectare to 115.3 million hectare. Based on the statistics in Table 1 and the analysis of Zhang (2000), it is reasonable to believe that China's forest coverage dropped from about 15% in 1949 to 12% toward the end of the 1970s. Mao's campaigns of the "Great Leap Forward" (1958–1961) and the "Cultural Revolution" (1966–1976) took place during these time periods, both of which destroyed China's forests with fatal consequences.

According to scholars (Joseph, 1986; Shapiro, 2001; Zhang et al., 1999), the Great Leap Forward demonstrated Mao's urgency to achieve a type of utopian socialism, which led to widespread deforestation. To fuel backyard blast furnaces for the increase of iron and steel output, roughly 10% of China's forest cover was felled. In addition, more trees were cleared from hills and mountains so as to convert the forested land into grain fields. The Cultural Revolution wrought even greater devastation. For a whole decade, most Chinese in the nation were mobilized into a frenzy campaign to remold the earth for grain production without taking regional variations and local practices into consideration. Consequently, the forest coverage shrunk from 12.7% to 12% as shown in Table 1. Just as Shapiro (2001) remarked, "the relationship between humans and nature under Mao is so transparent and extreme that it clearly indicates a link between abuse of people and abuse of the natural environment" (p. xii).

The impact of deforestation brought about a chain reaction of soil erosion and flooding in China. Zhang et al. (2000) noted, the size of eroded lands kept increasing so rapidly in China that 38% of China's total land area is considered badly eroded by 1999. Chokkalingam, Zhou, Wang, and Toma (2006) also confirmed that severe soil erosion from the topless slopes of hills and mountains led to catastrophic floods in 1959 and 1960 followed by a three-year famine from 1961 to1963. China's agriculture suffered a 30% loss in production, and over 20 million people died of starvation during the famine. Upon reflection, Mao's intention to vault China into the forefront of the world's economy made China fall farther behind other countries.

Deforestation and Change in China from 1979 to the Present

According to the State Environmental Protection Administration of China (2007), China is one of the world's most forest-deficient countries. As of 2006, China's forest coverage is 18.2%, with only 0.1 hectare of forest per person as compared with the world average of 0.6 hectare. China's growing population and economic growth continue degrading the limited forests since 1979. It was after the 1998 Yangtze River flood that the government has fully recognized the tight link between deforestation and

environmental degradation. Since then, the world has been witnessing a paradigmatic shift in China's forest policies and the immediate and far-reaching impact of such change on the global environment.

Growth of Media and Continued Deforestation

Since its economic reform in 1979, the new and pragmatic Chinese leadership renounced mass political movements and emphasized economic development. To modernize the country, the government first made a successful experiment with the household contract and responsibility system in the rural area in 1982. In 1992, China began adopting a socialist market economy by expanding such incentives as encouraging experiments in enterprise autonomy and reducing central planning.

To attune themselves to the demands of the market, media in China began receiving "multi-channel financing" from not only the government but also advertising and paid news since the 1980s. Major media such as radio, newspaper, and television as well as the Internet went full fledge into their development. For example, the number of radio stations and newspapers increased from 99 and 69 in 1979 to 278 and 791 in 1987, respectively (Chen, 1991). Updated satellite broadcasing network had covered 90% of the country with TV by the end of 2000. The number of registered Internet users grew from 8.9 million in 1999 to 79.5 million in 2003 (Lu & Wong, 2003).

It is true that the development of telecommunications has revolutionized the channel of communication in China. However, tight control of the CCP over the functions of media in China still remains. The CCP still "organizes, coordinates and supervises all forms of communication, be it traditional or modern" (Zhao, 2005, p. 27). On the one hand, access to various communication channels makes it possible for "a juxtaposition of top-down flow of information at the national level, an upward flow of information from the grassroots and a horizontal flow of information among the local units" (Zhao, 2005, p. 27). On the other hand, the Chinese government makes sure that mass media can only play a participant and collaborating instead of an adversary role in China so as to safeguard the Party's ideology and national interests.

As the goals of the Chinese government were primarily focused on production and economic output, government officials at various levels during the 1980s and 1990s prioritized the common saying of "First Development, Then Environment" (Siciliano, 2006, p. 2). China's economy has been developing dramatically, but the problem of deforestation still remained. Even though China has strengthened its afforestation campaigns since the 1980s, efforts in the campaigns turned out to be "massive planting failures" due to "poor site selection, poor species/site adaptation, poor techniques, and inadequate supervision" (Zhu, James & Hanover, 1987, p. 41). Thus, China's total forest coverage has increased from approximately 13% in 1950 to over 18% in 2003, but the volume and area of natural forests dropped dramatically, and the quality of forests in general decreased (Zhao & Shao, 2002).

Deforestation Consequences and the Paradigmatic Shift

Due to continuous deforestation of the natural forests and the decrease of the forest quality in general, China has been challenged with a long list of environmental problems and bombarded with alternating natural disasters of droughts and floods. Droughts damage about 160,000 km2 of cropland and destroy large quantities of vulnerable vegetation each year. The number of dust storms in China has increased from once every 31 years before 1949 to several times almost every year since 1990. The 1998 floods

along the Yangtze River, Songhua River, and Nenjiang River devastated large areas, killed 3,600 people, and left 14 million people homeless with an estimated loss of US $24 billion. Just as scholars (Harris, 2006; Liu & Diamond, 2005; Ma, 2008) described, China has been plagued with pervasive and widespread environmental problems of choking air pollution, water pollution and water shortages throughout much of the country, near-total deforestation, and depletion of agricultural land. Worst of all, China's environmental problems have been affecting other parts of the world as well. Weather satellites have detected that dust and aerial pollutants from China have crossed the Pacific Ocean and reached neighboring countries including even the west coast of the United States.

All this has awakened the Chinese government to take substantial measures. According to scholars (Yamane, 2001; Yamane & Lu, 2002; Zhang et al., 2000), the Chinese government has been making a paradigmatic shift in its forest management by: first, launching the Natural Forest Conservation Program (NFCP) through a set of polices to increase the efficiency of domestic timber production under sustainable forestry management; and second, implementing free trade in forest products as a state policy. Designed to run from 1998 to 2010, the NFCP aims at planting trees for soil and water protection and protecting existing natural forests from excessive logging throughout the country. With an investment of 17 billion RMB for NFCP, the Chinese government expects a gradual decrease in its annual logging quota, and a determined restructuring of the logging industry. In terms of timber trade, the value of China's forest product imports rose from $6.4 billion to $16.4 billion between 1997 and 2005. By now, China has become the leading importer of industrial round-wood and the world's largest wood workshop. The main suppliers of China's imports as of 2005 are Russia, accounting for 48.8%, Malaysia, 8.3%, Indonesia, 5.7%, Thailand, 4.6%, and Papua New Guinea, 4.2% (White et al., 2006, pp. 4–12).

The Nature of Change

In terms of deforestation in China since 1979, there has been profound change in institutional conception and organizational practice. On the one hand, there has been a paradigmatic shift in the conception of the Chinese government regarding natural forestry from the neglect in Mao's era to awakened attention among top national leaders since Deng's economic reform in 1979, thus bringing about planned change in forest management. The administrative change could be demonstrated by the enactment of the Forest Law of PRC in 1984, the implementation of the ban on logging, and reinforcement of the NFCP in 1998. As for the change in managing human and natural resoureces, 45,000 workers have been shifted from logging to tree planting in Sichuan Province alone since the program started (Zhang, 2000).

On the other hand, the Chinese government is maintaining its economic growth by instituting the planned change in its organizational practice by making full use of all available technology to produce whatever products needed in the world market. To meet the increasing demand for resources, China has been expanding its timber imports and wood product exports annually, thus relocating deforestation from China to other countries. Just as Sun, Katsigris, and White (2004) noted, the Chinese efforts in forest conservation have increased its forest coverage from 12% in 1981 to 18.2% in 2003, but deforestation has partially moved to the other parts of the world, like Russia, Malaysia, and Thailand.

Conclusion

The purposes of this study were to explore the communicaton model between the Chinese government and the Chinese people and the nature of change in the Chinese government's policies and practices regarding deforestation from 1949 to 1978 and from 1979 to the present. By adopting the research methods of historical analysis and extended literature review through the theoretical lenses of Lasswell's communication model and the theory of change, we have discovered the following research findings.

First, in the relatively isolated China from 1949 to 1978, the CCP-led autocratic government was issuing unrealistic policies such as reclaiming forests for arable land and using logs to fuel backyard furnaces for the increase of iron and steel output. Via an effective network of sound broadcasting, loudspeaker system, newspapers, bulletin boards, and folk media, Mao's government extensively mobilized the whole nation to plunge into campaigns like the three-year "Great Leap Forward" and the 10-year "Cultural Revolution." As a result, China almost collapsed economically and suffered from natural disasters of flooding and famines partially due to the massive deforestation during the campaigns.

Second, since its economic reform in 1979, China has experienced a gradual paradigmatic shift in the conception of the government regarding forest management. A planned change has been witnessed with the enactment of the Forest Law of PRC in 1984, the implementation of the ban on logging, and reinforcement of the NFCP in 1998. Although the development of telecommunications makes it possible for some sort of horizontal and even upward flow of information, the Chinese government still tightly controls the mainstream media, which effectively assists the government with its reorientation of the workforce from loggers to tree growers and furniture-makers using timber from foreign lands.

Finally, despite the aforementioned change in the Chinese government, one thing that remains unchanged is that China has been developing at the great costs of degrading the environment, especially in terms of deforestation within China yesterday and outside China today and tomorrow. Due to China's sharp annual increase of timber imports and wood product exports, deforestation has been relocated from China to other countries. This has actually overshadowed China's achievements in expanding the forest coverage and already drawn international attention to the potential impact on global environmental protection. When we think of the connectivity and the potential chain reactions in the process of globalization, it is not just the academics but all practitioners in the field of environmental education and communication that should communicate the urgent message to all the people of the world including the Chinese to seek sustainable development globally instead of in one area or just one country.

References

Bao, M. H. (2006). The evolution of environmental policy and its impact in the People's Republic of China. *Conservation and Society, 4*(1), 36–54.

Bishop, R. L. (1989). *Qi lai! Mobilizing one billion Chinese: The Chinese communication system.* Ames: Iowa State University Press.

Chang, W. H. (1989). *Mass media in China: The history and the future.* Ames: Iowa State University Press.

Chang, L., & Hao, Y. (2007, June 21). China will responsibly participate in jointly formulating the international community's proposal to counteract climate change. Xinhua News Agency.

Chen, L. (1991). Culture, politics, communication and development: A tentative study on the case of China. *Gazette, 48*(3), 1–16.

Chokkalingam, U., Zhou, Z. C., Wang, C. F., & Toma, T. (2006). *Learning lessons from China's forest rehabilitation efforts: National level review and special focus on Guangdong Province.* Jakarta, Indonesia: Center for International Forestry Research.

Cui, X. (2007). Hydrological impacts of deforestation on the southeast Tibetan plateau. *Earth Interactions, 11*(15), 1–18.

D´emurger, S., Hou, Y. Z., & Yang, W. Y. (2007). *Forest management policies and resource balance in China: An assessment of the current situation.* Unpublished paper. Retrieved October 2, 2009, from ftp://ftp.gate.cnrs.fr/RePEc/2007/0712.pdf

Economy, E. E. (1998). China's environmental diplomacy. In S. S. Kim (Ed.), *China and the world: Chinese foreign policy faced the new millennium.* Boulder, CO: Westview Press.

Fang, J., Chen, A., Peng, C., Zhao, S., & Ci, L. (2001). Changes in forest biomass carbon storage in China between 1949 and 1998. *Science Magazine, 292,* 2320–2322.

Harris, P. G. (2006). Environmental perspectives and behavior in China: Synopsis and bibliography. *Environment and Behavior, 38*(5), 5–21.

Joseph, W. A. (1986). A tragedy of good intentions: Post- Mao views of the Great Leap Forward. *Modern China, 12*(4), 419–457.

Lang, G. (2002). Forests, floods, and the environmental state in China. *Organization and Environment, 15*(2), 109–130.

Lang, G., & Chan, C. H. W. (2006). China's impact on forests in Southeast Asia. *Journal of Contemporary Asia, 36*(2), 167–194.

Lasswell, H. (1948). The structure and function of communication in society. In L. Bryson (Ed.), *The communication of ideas* (pp. 215–228). New York: Harper & Brothers.

Li, H. (1998). Some thoughts on Confucianism and ecofeminism. In M. E. Tucker & J. Berthrong (Eds.), *Confucianism and ecology: The interrelation of heaven, earth, and humans* (pp. 293–312). Cambridge, MA: Harvard University Press.

Li, J. N. (1990). Population effects on deforestation and soil erosion in China. *Population and Development Review, 16*, 254–258.

Liao, S. (1987). *Introduction to forestry economics.* Beijing: China Forestry Publishing House.

Liu, A. P. L. (1964). *Radio broadcasing in Communist China.* Cambridge: Massachusetts Institute of Technology Press.

Liu, J., & Diamond, J. (2005). China's environment in a globalizing world. *Nature, 435*, 1179–1186.

Lu, D., & Wong, C. K. (2003). *China's telecommunicas market: Entering a new competitive age.* Northampton, MA: Edward Elgar Publishing.

Ma, T. J. (2008). Interconnected forests: Global and domestic impacts of China's forestry conservation. Unpublished paper. Retrieved November 16, 2008, from http://www.wilsoncenter.org/topics/docs/forestry aug08.pdf

Melkote, S. R., & Steeves, H. L. (2001). *Communication for development in the Third World: Theory and practice for empowerment* (2nd ed.). Thousand Oaks, CA: Sage.

Ministry of Forestry. Various years. *China's National Forest Resources Statistics (1973–1976, 1977–1981, 1984–1988, 1989–1993, 1994–1998, 1999–2003).* Beijing: China's Forestry Publishing House.

Shapiro, J. (2001). *Mao's war against nature: Politics and the environment in revolutionary China.* Cambridge, MA: Cambridge University Press.

Siciliano, M. (2006). Policy and management: Development first, then environment. *The Heinz School Review*, Spring, 1–14.

Smil, V. (1996). Barriers to a sustainable China. In D. C. Pirages (Ed.), *Building sustainable societies: A blueprint for a post-industrial world* (pp. 175–187). Armonk, NY: M. E. Sharpe.

State Environmental Protection Administration of China. (2007). China's biodiversity: A country study. *Chinagate*. Retrieved October 19, 2008, from http://us.tom.com/english/2036.html

State Statistical Bureau. Various years. *Statistical yearbook of China*. Beijing: China Statistical Publishing House.

Sun, X., Katsigris, E., & White, A. (2004). Meeting China's demand for forest products: An overview of important trends, ports of entry, and supplying countries with emphasis on the Asia-Pacific region. *International Forestry Review, 6*(3–4), 227–236.

The Regents of the University of Michigan. (2006). Global deforestation. Retrieved July 11, 2006, from http://www.globalchange.edu/globalchange2/current/lectures/deforest.html

Timmerman, C. E. (2003). Media selection during the implementation of planned organizational change: A predictive framework based on implementation approach and phase. *Management Communication Quarterly, 16*(3), 301–340.

Wang, Y. (2004). Environmental degradation and environmental threats in China. *Environmental Monitoring and Assessment, 90*, 161–169.

West, R., & Turner, L. H. (2007). *Introducing communication theory: Analysis and application*. New York: McGraw-Hill.

White, A., Sun, X. F., Canby, K., Xu, J. T., Barr, C., Katsigris, E. et al. (2006). China and the global market for forest products: Transforming trade to benefit forests and livelihoods. *Forest Trends*, 1–31.

Yamane, M. (2001). China's recent forest-related policies: Overview and background—From the perspective of economic growth and forest conservation. *Policy Trend Report,* 1–12.

Yamane, M., & Lu, W. (2002). Trends in China's forest-related policies—From the perspective of the growing timber trade. *Policy Trend Report*, 1–11.

Yin, J. (2006). China's second long march: A review of Chinese media discourse on globalization. *The Review of Communication, 6*(1–2), 32–51.

Zhang, P. C., Shao, G. F., Zhao, G., Master, D. C., Parker, G. R., Dunning, J. B. et al. (2000, June 23). China's forest policy for the 21st century. *Science, 288*, 2135– 2136.

Zhang, Y. Q. (2000). Deforestation and forest transition: Theory and evidence in China. In M. Palo & H. Vanhanen (Eds.), *World forests from deforestation to transition?* (pp. 41–65). Dordrecht: Kluwer Academic Publishers.

Zhang, Y., Dai, G., Huang, H., Kong, F., Tian, Z., Wang, X. et al. (1999). The forest sector in China: Towards a market economy. *World Forestry, Society and Environment, Special Theme*, 371–393.

Zhao, J. Q. (2005). Communication and rural development in China: A historical review. Unpublished paper, 1–33. Retrieved October 12, 2009, from http://web.ebscohost.com/ehost/detail?vid=6&hid=6&sid=a5d0bebf-9a03-466e-ade8-23d7

Zhao, G., & Shao, G. F. (2002). Logging restrictions in China: A turning point for forest sustainability. *Journal of Forest, 6*, 34–37.

Zhu, X. T., James, L. M., & Hanover, J. W. (1987). Land-cover change analysis of China using global-scale pathfinder. *Journal of Forestry, 1*, 41–43.

Table 1
China's forest resources, 1973–2003

| Yeas of inventory | Forestry land | | Forest | | % Forest cover |
	Area mill. ha	Stock bill. M^3	Area mill. ha	Stock bill. M^3	
1973–1976	257.6	10.3	121.9	9.4	12.7
1977–1981	267.1	10.3	115.3	9.0	12.0
1984–1988	267.4	10.6	124.7	9.1	12.3
1989–1993	262.9	11.8	133.7	10.1	13.9
1994–1998	263.3	12.5	153.6	11.3	16.6
1999–2003	282.8	13.6	174.9	12.5	18.2

Sources: Ministry of Forestry. *China's National Forest Resources Inventories* (1973–2003).