

Tibet: Environmental and Development Issues

Inhabited by some of the most unique plant and animal species, including many of which are endangered, the Tibetan Plateauⁱ is being seriously affected by global warming. The fact that Tibet is home to 40 known species of endangered plants and 141 known species of endangered animalsⁱⁱ makes this sufficient cause for alarm. A recent study conducted by U.S. and Chinese scientists reported that global warming could cause a dramatic decline in plant species diversity on the rangelands of the Tibetan Plateau, in particular.ⁱⁱⁱ Furthermore, climate change and large-scale developments are continuously leading to desertification,^{iv} glacial melt,^v and flood.^{vi}

The Tibetan Plateau is also the source of many of Asia's major rivers.^{vii} Currently 90% of the runoff of these rivers flows downstream to eleven countries,^{viii} providing water resources for 47% of the world's total population.^{ix} China, however, has plans to divert many of these rivers to meet the increasing water demands of its farming and tourism industries, despite the fact that several are already drying up due to climate change.^x

Since 1985, the Yellow (Tib: Machu) River, on which some 300 million Chinese people depend, has run dry for progressively longer periods each year.^{xi} Likewise, in 2006, the Yangtze (Tib: Driчу) River, which serves approximately 500 million people along its course, had the lowest water level in its upper reaches since 1920.^{xii} Nonetheless, many of China's new development projects, either in the process of construction or scheduled to begin in the future, by their very nature, will magnify the damage already done to the natural ecosystems along these rivers. Chinese plans for a new nationwide power grid, involving the construction of 14 new hydro-dams on the Mekong and the Yangtze rivers, and adding to the 22,000 large dams already existing,^{xiii} seem to exemplify Chinese unwillingness to halt 'progress' in consideration of the environment.

In addition, many of China's new developmental projects also have political overtones. New dams planned for the Brahmaputra will prevent the river's natural flow into India and enable the Chinese government to divert water to drought-stricken areas of northern China.^{xiv} In preparation for bringing water resources northward, plans to divert water from the Yangtze River to western parts of China via the Yellow River are already scheduled to begin as soon as 2010.^{xv} The political tensions likely to result from China's increased control of water resources for nearby countries, and its influence therefore, can only mount, as China's projects cause severe droughts and flooding in the downstream nations. The water resources of millions of people within and outside of China, will lay in the Chinese government's control, and if prior actions are any indicator of future ones, such a situation is likely to lead to the irrevocable depletion of those resources.

According to People's Daily, "Water shortage has become a [complex] problem[,] restricting the development of China's western region. It is estimated that areas in the upper and middle reaches of [the] Yellow River will face a water shortage of four billion cubic meters by the year 2010. And the figure will skyrocket to 11 billion cubic meters in 2030."^{xvi} The Chinese government's efforts to rectify this problem by diverting rivers

from their natural courses and the areas naturally sustained by them, demonstrates a callous disregard for not only the wildlife along the rivers, but also the people.

World Wild Fund For Nature, based in China, has exclusively stated, “Development is the major factor influencing the quality of Tibet's ecosystem.”^{xxvii} According to Dawa Tsering, Head of WWF China’s Program Office in Lhasa, “ [Once Tibet’s ecosystem is damaged, [the effects will be] extremely difficult to reverse,” therefore, “integrating the needs of local development with conserving Tibet's biodiversity is in need of urgent attention.”^{xxviii}

In recent years, the Chinese government has made significant efforts to protect the plateau’s fragile environment by implementing wildlife conservation policies, but a troubling gap between official policies and their actual implementation remains. In early 2007, several skinned chiru carcasses, whose shahtoosh wool^{xix} is a precious commodity on the black market, were found, after poachers had been spotted along the Khunu Mountain range.^{xx} Additionally, Chinese authorities are enticing Tibetans to wear traditional clothes, trimmed with animal skins, at public gatherings and official functions. After His Holiness advised Tibetans against the use of animal hides, many Tibetans had stopped wearing them, but Chinese officials have encouraged them to buy such products by loaning them the money to do so.^{xxi} Such double-dealing in deeply important issues undermines faith in all Chinese governmental policies.

Since the early 1960s, China’s misguided approach to agriculture and economic development has accelerated the deterioration of the Tibetan rangeland. Policies supporting infrastructure development, the reclamation of communal land for commercial development, fencing, widespread harvesting of wild medicinal herbs, uncontrolled gold mining, and the permanent settlement of nomads have all contributed to grassland degradation,^{xxii} even though each of these policies conflict with China’s stated interest in protecting Tibet’s natural environment.

Similarly, lack of proper waste disposal in Tibet’s mountains has caused further damage to the environment of the plateau. In 2007, some 40,000 mountaineers climbing Mount Everest from Tibet disposed of 120 tons of rubbish on the mountain, an average of 3 kgs of garbage per person.^{xxiii} Failures to adequately regulate such detriments to the Tibetan environment only hint at the underlying difficulties that the Chinese have with accepting environmental conservation as an issue of primary importance.

On a scale impossible to ignore, and with a cost to match, the People’s Republic of China spent approximately U.S. \$4.2 billion^{xxiv} to complete its new railroad connecting Tibet’s capital, Lhasa, to Beijing in 2006. Under China’s ‘Western Development Strategy,’ construction on the new 1,142 km Gormo-Lhasa (Ch: Golmud-Lhasa) railway commenced in 2001, literally beginning where the Siling-Gormo (Ch: Xining-Golmud) railway left off in 1984.^{xxv} To date, this Gormo-Lhasa railway, which actually extends the earlier Siling-Gormo segment to Lhasa, has, perhaps, embodied the most pervasive Chinese effort to connect the hitherto sheltered Tibetan capital of Lhasa to the center of Chinese power.

Built on 550 kms of continuous permafrost,^{xxvi} the Chinese have spent hundred of millions of dollars to provide environmental safeguards along the railway. Research conducted by several environmentalists and international bodies, including the U.S. Embassy in China, have reported that the engineers and planners of the new railway have been extremely careful with the surrounding environment. In fact, according to the U.S. Embassy's research, the constant maintenance work on the highway parallel to the railroad has had a much more devastating effect on the plateau's environment than the railway.^{xxvii}

In any case, the railway passes along the eastern border of the Hoh Xil National Nature Reserve,^{xxviii} and incorporates 33 underpasses, which serve as special migratory routes for wild animals; it makes use of liquid coolants, to keep underlying permafrost frozen; and enforces protocols to strictly regulate the disposal of trash, mitigating the railroad's effects on Tibet's sensitive environment. Still, whether or not the current environmental safeguards—which will prove increasingly costly and inconvenient, but necessary, in the future—will be implemented with the same diligent fervor as they are now is not yet known.

The concerns occasioning this new railway are not, however, restricted to environmental issues. The motivations behind the construction of the railway, which will prove instrumental to Chinese exploitation of Tibetan culture and holy sites, as well as to the mining of Tibet's vast mineral wealth, also involves a troubling human element. Although many aspects of Tibetan marginalization are genuinely complex, those complexities are often overstated. Unlike other issues, though, it is impossible to misconstrue the foreseeable exclusion of Tibetans from the wealth that will be reaped along with Tibet's minerals. Although Tibetans are entitled to this wealth, the Chinese still control it, and joint foreign and Chinese mining ventures are set to profit from it. The Gormo-Lhasa railway will, undoubtedly, be integral to the success of these ventures.

In 2006, following large-scale government initiatives to exploit Tibet's natural resources, a total of 194 mining permits and 249 prospecting permits were granted to foreign investor-involved projects.^{xxix} The British company, Central China Goldfield,^{xxx} and Canada's, Continental Minerals Corporation,^{xxxi} among others, have received such permits and are currently conducting mining operations in Tibet.

In February 2007, the official Chinese press released a brief summary of a report prepared by a team of geologists, conducting a major geological survey of the Tibetan Plateau (involving 1,000 staff, over a seven-year period). In the brief, the press announced that there are reserves of several billion tons of iron ore, 30-40 million tons of copper, 40 million tons of lead and zinc, and 600 new potential sites for mines on the Tibetan Plateau. The brief also concluded that there were possibly more resources on the plateau, especially in areas where they were not able to excavate because of the harsh climate.^{xxxii}

Although Tibet's mineral wealth is not, perhaps, surprising, the fact that this study was conducted indicates Chinese interest in exploiting Tibet's mineral resources. Furthermore, the publication of actual data revealing the potential profits of mining these resources, demonstrates a Chinese effort to provide the concrete terms through which both foreign and Chinese companies can assess the viability of such ventures for themselves. Efforts like these—and the railway, which makes them fundamentally possible—bring such projects closer to realization for companies with the capacity to handle them.

In addition to the obvious detriments that these mining operations will cause to Tibet's fragile environment, Chinese government's infrastructure development programs, because they do not employ Tibetan or compensate them for their displacement, will largely disadvantage Tibetans. Improved infrastructure will bring more Chinese to Tibet and displace ethnic Tibetan populations to extract the mineral resources beneath them. Herders are already being forcibly evicted to make room for new dam and roads.^{xxxiii} Many are relocated to small concrete "blocks," away from their native homes and forced to slaughter their livestock. In January 2008, there were plans to move more than 52,000 Tibetan herders and farmers to such blocks.^{xxxiv} In most cases, their lack of marketable skills prevents them from finding alternate means of making a living.

Of course, many of the migrant Chinese in Tibet are also businessmen, students, tourists and those looking for work in Tibet's booming economy, which is overwhelmingly Chinese.^{xxxv} The new railway greatly facilitates their migration, but their presence in Tibet fuels Tibetan-Chinese tensions.

In 2006 alone, there was a 36 percent increase in the number of tourists in Tibet. Of these, 93 percent were from China.^{xxxvi} In the first ten months of 2007, Tibet received 3.72 million tourists, a 64 percent increase from the previous year.^{xxxvii} Of these, only 350,000 were overseas visitors.^{xxxviii} Chinese tourism bureaus have attributed this trend of systemic growth in tourism to the construction of the Gormo-Lhasa railroad. An article in Xinhua, stated that "On July 1, [2006, after] the 1,956-km Qinghai-Tibet [Tib: Siling-Lhasa, comprising the Siling-Gormo and Gormo-Lhasa segments] was put into operation, [travelers were provided with] cheaper and safer access to the region."^{xxxix}

Although we lack official data recording the number of Chinese people who arrive in Tibet by rail for purposes other than tourism, it is safe to assume that the Gormo-Lhasa railroad will have impacts similar to those of other railroads connecting China to Inner Mongolia and Xinjiang, where the original inhabitants are now small minorities compared to resident Han Chinese. In Inner Mongolia, experts estimate that the population in the region increased some five times from 1912-1949. By 1949, the Han Chinese outnumbered the Mongolians by 11 to 1. Such migration has not only marginalized the native Mongolian population, diluting its political significance and overshadowing its particular concerns with those of the Han Chinese, but it has also forced Mongolians to abandon their "age-old nomadic traditions," and led to grassland degradation. Similarly, in Xinjiang, according to a 2001 estimate, the completion of a railroad to Kashgar, near

the Kazakhstan border, led to a 30 percent increase in the Chinese population in the region, compared to a 2.5 percent increase the year before.^{xi}

Based on a survey of 270,000 passengers over a period of approximately 75 days, or about 3,600 passengers per day, the Director of the TAR Development and Reform Committee, Jin Shixun, asserted that 60% of those using the Qinghai-Tibet railway were businesspersons, students, transient workers, traders, and individuals visiting relatives, and only 40 % were tourists. ICT estimates that if a similar proportion prevailed throughout the remainder of the first year of operation, then approximately 900,000 passengers of the 1.5 million who took the train that year could have been non-Tibetan businesspersons, workers, and traders, who intended to remain in the TAR for a period.^{xii}

This kind of migration brought in by infrastructural developments, like the railway, seriously threatens Tibetan culture and interests, as more non-Tibetans enter the region and take the jobs provided by upcoming businesses, further denying the native population the opportunities and political representation to which their nationality entitles them. Unfortunately, non-Tibetans, and particularly the Chinese, have better access to wider social networks, capital and information about where and how to seek employment.

According to Ben Hillman, an Australian professor and Chair of the Eastern Tibet Training Institute:

“Although there is no systematic discrimination of Tibetans by employers, the high rate of illiteracy among Tibetans makes them incompetent for the service-oriented jobs prevalent in Lhasa and other cities of ‘TAR,’ as well as in other Tibetan prefectures. Ethnic Tibetans remain among the most illiterate in China. Only a small minority has secondary education, and more than 40% of Tibetans have no formal schooling at all, compared to China’s national average of 8%.”^{xliii}

Mr. Hillman also noted that lack of vocational training—“the kind of training that will allow Tibetans to compete with migrants from the east in construction, tailoring, food preparation and a host of other jobs in the dynamic service sector”—make the Tibetan natives unable to compete in Tibet’s burgeoning job markets.

Thus, the economic benefits—increased revenues from the tourist industry, new businesses, hotels, and jobs for the Tibetan Autonomous Region and the ethnic Tibetans—brought to Tibet as a result of the railroad have largely been to the advantage of migrant Chinese, who are better educated and better trained. Of course, blame for the absence of institutes offering vocational training to Tibetans goes to China, whose efforts to include Tibetans in its development schemes have been minimal. Also, with more economic opportunities in urban areas, the railroad will certainly exacerbate mean income disparities between urban and rural populations (currently mean urban incomes are already five times higher than average rural incomes).

As Mr. Hillman has stated, “China’s policy makers have failed to appreciate the importance of investing in people as part of the Western Development Strategy. Their

approach has been to expand markets and to encourage more ‘advanced’ migrants to lead the way. The policy assumption is that once Chinese migrants from central and eastern provinces will move into new markets, open small businesses, work on building sites, drive taxis (most taxi-drivers in Lhasa are non-Tibetan), Tibetans will watch and eventually copy them. That approach is not working.”^{xliii}

Tibetan Government-In-Exile makes the following recommendations to the Chinese government:

- Reinvest revenues generated by the Qinghai-Tibet railway to empower local Tibetans by improving already existing schools, providing new vocational training institutions and establishing healthcare institutions in rural areas.
- Include local Tibetans as active stakeholders in all of its strategic development programs.
- Allow nomads to manage livestock without imposing restrictions on their mobility, and enforce an immediate moratorium on nomad resettlement.
- Strictly enforce existing regulations and implement further environmental protection policies, specifically with regard to Tibet’s endangered species.
- Cease mining activities in ecologically fragile Tibetan areas, including the Yarlung Tsangpo and other areas in the proximity of nature reserves.
- Abandon all development projects potentially damaging to vitally important Tibetan river systems.
- Exert further conservation efforts in existing nature reserves, to rectify their widespread lack of sufficient funds, professionally-trained staff and resources to train current employees.
- Assist nature reserves to raise funds for obtaining the necessary equipment, so that they may conduct the research vital to conservation of little-known Tibetan species.
- Construct new parks and protected areas to preserve threatened and endangered species.

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- ⁱ Among those on the plateau, Tibetan antelopes, Bengal Tigers, Red Pandas, Giant pandas, Tahr, Asiatic Black Bears, black-necked cranes, snow leopards, blue sheep, wild yaks, brown bears and Tibetan gazelles are the most notable.
- ⁱⁱ World Wild Fund for Nature (WWF China). *Tibet-Overview*.
<http://www.wwfchina.org/english/loca.php?loca=79>, accessed July 21, 2008.
- ⁱⁱⁱ People's Daily Online. *Warming may cause rapid plant species loss on Qinghai-Tibet Plateau*. 07/06/2008.
<http://english.peopledaily.com.cn/90001/90781/90878/6442939.html>
accessed July 15, 2008.
- A summary of the study was published in 'People's Daily Online' on July 06, 2008. The study reported that there had already been losses in some of the plant species abundant in the Plateau. Medicinal plants had an average annual loss of 4.9 species from 1999 to 2001, while palatable plants had an annual average decline of 5.4 species. 21 percent of medicinal plants and 25 percent of pasture plants have already been lost due to global warming, according to the report. Julia Klien, a U.S. Colorado State University assistant professor and other Chinese scientists conducted the study.
- ^{iv} Tibet's grasslands are turning into desert at the rate of 2,330 square kilometers each year. In 2006, there were about 13 sandstorms in China, including one that deposited 336,000 tons of dust in Beijing. These storms were attributed to the desertification in Tibet.
- ^v Rongbuk glaciers in southern Tibet have already retreated by some 490 ft in the past decade. The Zepu glacier in southeast Tibet also retreated by more than 100 yards in the last three decades.

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- ^{vi} On June 10, 2000, Yidwong Tsangpo (Ch: Yigongzangbo), a tributary of Yarlung Tsangpo, experienced flash flood, resulting in the deaths of 30 people and the disappearance of more than 100 others. In July 2005, the dam on Chu Ngon (Ch: Qingshui River) broke and the ensuing glacial-lake outburst flood dramatically affected the land and the people living downstream.
- ^{vii} Some of the major rivers that have sources in Tibet are the Yellow River, the Yangtze, the Mekong, the Salween, the Indus, and the Yarlung Tsangpo, which downstream becomes the Brahmaputra.
- ^{viii} Some of the downstream countries are China, India, Bangladesh, Nepal, Bhutan, Pakistan, Thailand, Myanmar, Laos, Cambodia and Vietnam
- ^{ix} Oxley, Jeremy. *Tibet: An Environment in Crisis*. Greenleft Online. 09/25/1996.
<http://www.greenleft.org.au/1996/248/13421>
accessed May 15, 2008.
- ^x Biron, Carey L. and Dodin, Thierry. *Siphons to the North*. Himal Southasian.
http://www.himalmag.com/2007/september/tibet_dam_mao_zedong.htm,
accessed May 20, 2008.
- ^{xi} Brown, Lester R. and Halweil, Brian. *China's Water Shortage Could Shake World Food Security: An abrupt decline in the supply of irrigation water to China's farmers has aroused growing concern in the world's capitals*. World Watch: Working for a Sustainable Future. July/August 1998. p. 11.
- ^{xii} Khoday, Kishan. *Climate Change and the Right to Development: Himalayan Glacial Melting and the Future of Development on the Tibetan Plateau*. United Nations Development Project: Human Development Report 2007/2008. p. 19.

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- ^{xiii} Book Review - *The Mekong: Environment and Development*. Hori, Hiroshima, Science Direct. Journal of Government Information. Volume 29, Issue 6, November- December 2002.
- ^{xiv} Zhu, Li Ling. *Xizang zhi shui jiu zhongguo: da Xi xian "zai zao Zhongguo" zhan lue nei mu xiang lu (Save China through Water from Tibet)*. 2005.
- ^{xv} People's Daily. *China: Yangtze River to Go West, North*. 07/05/2000.
http://english.peopledaily.com.cn/english/200007/05/eng20000705_44758.html, accessed June 15, 2008.
- ^{xvi} Ibid.
- ^{xvii} World Wild Fund for Nature (WWF China). *Tibet-Overview*.
<http://www.wwfchina.org/english/loca.php?loca=79>, accessed July 21, 2008.
- ^{xviii} China CSR. *Environmental Groups Call for Qinghai-Lhasa railway conservation*. 7/03/2006. <http://www.chinacsr.com/2006/07/03/578-environmental-groups-call-for-qinghai-lhasa-railway-conservation/>, accessed July 15, 2008.
- ^{xix} Shahtoosh is the name given to wool derived from Tibetan Antelope after killing them. Shahtoosh are said to be so fine that an average size shawl can be passed through a wedding ring.
- ^{xx} Khunu mountain range borders Gertse district in Ngari, Western Tibet. The report was submitted by a group of Western adventurers trekking along the mountain range.
- ^{xxi} Haq, Zia. *Tibetans say China forcing them to flout wildlife laws*. 01/31/2008. Hindustan Times, New Delhi.

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- <http://www.hindustantimes.com/storypage/asp?id=177d028f-a39e-4796-83f2-1056268f27e6>, accessed March 31, 2008.
- ^{xxii} Shapiro, Judith. *Mao's War Against Nature: Politics and the Environment in Revolutionary China*. Cambridge: Cambridge University Press, 2001.
- ^{xxiii} Thaindian News. *Mount Everest Today has an estimated 600 tonnes of frozen junk*. 06/24/2008. http://www.thaindian.com/newportal/health/mount-everest-today-has-an-estimated-600-tonnes-of-frozen-junk_10063733.html, accessed July 01, 2008.
- ^{xxiv} The estimate for the total cost in U.S. dollars varies between \$4.1 and \$4.2 billion.
- ^{xxv} International Campaign for Tibet. *Crossing the Line: China's New Railway to Lhasa, Tibet*. www.savetibet.org. Washington DC: USA, p. 5-6.
- ^{xxvi} Chinaview.cn. *Qinghai-Tibet Railway preparing for first winter*. 10/01/2006. http://news.xinhuanet.com/english/2006-10/01/content_5161256.htm, accessed July 08, 2006.
- ^{xxvii} Xia, Lin, et. al. *The effect of the Qinghai-Tibet railway on the migration of Tibetan antelope *Pantholops hodgsonii* in Hoh-xil National Nature Reserve, China*. Institute of Zoology, Chinese Academy of Sciences, Beijing, China, *Oryx* (2007), 41, 352-357 Cambridge University Press, Doi:101017/S0030605307000116. Published online by Cambridge University Press 17, Oct 2007.
- ^{xxviii} International Campaign for Tibet. *Tracking the Steel Dragon: How China's economic policies and the railway are transforming Tibet*. Washington DC, USA, p. 214.

^{xxix} China Mining. *China Discovers 213 Mineral Deposits Last Year*. 07/09/2007.
<http://www.chinamining.org/News/2007-07-09/1183962297d6030.html>, accessed
May 31, 2008.

For the past year, CCG has been exploring for copper in Nyemo (Ch: Nimu), near
Tibetan capital, Lhasa. CCG has a joint venture with the Sichuan Bureau of
Metallurgy and Geological Exploration.

^{xxx} Telegraph.co.uk. *China and Britain ready to exploit Tibet's natural resources*.
07/31/2008.
<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2008/07/27/cctibet127.xml>,
accessed 08/01/2008.

Central China Goldfield is the only British Miner operating in Tibet according to
Telegraph, a British News Agency.

^{xxxii} Continental Minerals Corporation has projects located about 240 km SW of Lhasa in
TAR. It started exploration in April 2005 and in 2007, determined in a feasibility
study that the mine would have a 14 year life, with an annual average production
of 160 million pounds of copper, 190,000 ounces of gold and 1.73 million ounces
of silver. They are currently entered into a framework agreement with Jinchuan
Group Ltd.

^{xxxiii} International Campaign for Tibet. *Tracking the Steel Dragon: How China's economic
policies and the railway are transforming Tibet*. Washington DC, USA, p. 15.

^{xxxiv} ABC News. *China steps up resettlement of Tibetan herders*. 01/17/2008.
<http://www.abc.net.au/news/stories/2008/01/17/21/411/01.htm>, accessed April,
01, 2008.

^{xxxv} Ibid.

^{xxxv} International Campaign for Tibet. *Tracking the Steel Dragon: How China's economic policies and the railway are transforming Tibet*. Washington DC, USA, p. 57. see footnote 4 for the specific data provided.

^{xxxvi} People's Daily Online. *Tibet Records Rapid Tourism Growth*. 12/28/2006.
http://english.people.com.cn/200612/28/eng/200612/28_336590.html, accessed July 05, 2008.

^{xxxvii} Tibet.cn. *Tibet sees sharp increase in tourists in first 10 months*. 12/02/2007.
http://info.tibet.cn/news/index/ywxw/200801/t20080116_352356.htm, accessed July 05, 2008.

^{xxxviii} Ibid.

^{xxxix} People's Daily Online. *Tibet Records Rapid Tourism Growth*. 12/28/2006.
http://english.people.com.cn/200612/28/eng/200612/28_336590.html, accessed July 05, 2008.

^{xl} The numbers and comparisons provided in the passage have been taken from an earlier report by the International Campaign for Tibet based in Washington D.C.
International Campaign for Tibet. *Crossing the Line: China's New Railway to Lhasa, Tibet*. www.savetibet.org. Washington DC: USA, p. 17-20.

^{xli} See footnote four for chapter "The Second Invasion:" Chinese migration to Tibet and the Railroad. International Campaign for Tibet. *Tracking the Steel Dragon: How China's economic policies and the railway are transforming Tibet*. Washington DC, USA, p. 57.

^{xlii} Hillman, Ben. *Rethinking China's Tibet Policy*. Japan Focus, an Asian Pacific e-journal. <http://www.japanfocus.org/products/details/2773>, accessed July 15, 2008.

xliii **Ibid.**