



Urban Security in China - A Case Study of Dalian

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Urban Security in China - A Case Study of Dalian

By Wen Bo

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Nautilus invites your contributions to this forum, including any responses to this report.

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I. Introduction

Wen Bo, Senior Fellow at the Pacific Environment China Program, examines urban security issues in China and their connection to environmental sustainability. He writes, "By encouraging civil society and promoting cooperation and exchanges with other countries Dalian can address the environmental and urban security challenge that it faces and promote peace and stability in North-East Asia."

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II. Article by Wen Bo

-“Urban Security in China - A Case Study of Dalian”

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Rapid urbanization, resource depletion, misguided urban planning, and a troubled view of economic development have created new security challenges for cities in China. Overall, the public sense of security has been reduced in the country. In the context of globalization, urban and human security are increasingly shaped by international and ecological factors. A regional, collaborative response is needed to address these security challenges. For the realization of national and regional security goals in Chinese cities, civil society is indispensable as civil society organizations actively promote public participation, international exchanges, and community solidarity. This paper will use the city of Dalian as a case study to explore the interaction between environmental and urban security issues and to discuss the potential of civil society and regional cooperation to address these security threats.

Nuclear Security & Safety

Nuclear security has both traditional and non-traditional security implications for China, as nuclear weapons pose both a security and environmental threat. In East Asia, the North Korean nuclear crisis is the main nuclear proliferation issue. North Korea's nuclear program raises concerns that there is not an enforceable mechanism that can stop a state from developing nuclear weapons. North Korea's nuclear weapons also provide a convenient excuse for U.S. and Russian military deployments in the Far East. Environmentally, North Korea's nuclear tests are an immediate environmental threat to its closest neighbors, China and South Korea. The possibility of contamination from nuclear radiation should not be underestimated.

The security and environmental threats posed by the North Korean nuclear program mean that Chinese cities located adjacent to North Korea, such as Dalian, have an urgent need to support the denuclearization of the Korean Peninsula. International constraints have proven to be ineffective against North Korea and nuclear proliferation risks remain, including a high risk of nuclear technology and/or fissile material falling into the hands of extreme militants. Since Dalian also shares a maritime boundary with North Korea, the region's maritime police and navy should investigate and deter the trafficking of nuclear materials. Environmentally, further North Korean nuclear tests could cause pollution and radiation that would negatively affect cities in Northeast China.

China and neighboring countries also use nuclear technology to meet energy demands. Both South Korea and Japan have had safety incidents at their nuclear power plants, most notably the recent nuclear meltdown at Fukushima in Japan. The first nuclear power project to be completed in northeast China, the Hongyanhe Nuclear Power Plant, is located in Dalian's Wafangdian area. While nuclear technology has become relatively more mature since Chernobyl and safety management has

greatly improved, the Fukushima nuclear accident demonstrates that nuclear security is a very real threat in the region. Radioactive waste, on-site storage, and transport to remote storage sites in Northwest China pose great dangers for present and future generations. Dalian, located on the Liaodong Peninsula, has geographical limitations that would make it very difficult for any large-scale evacuation in the event of a serious nuclear accident.

In addition to the nuclear security issues related to a meltdown at a nuclear power plant, nuclear facilities have other environmental consequences. There are concerns that the Hongyanhe Nuclear Power Plant, once operational, would increase the water temperature in the surrounding sea water. The change of water temperature could have negative impacts on local marine life. For example, China's spotted seal only breeds in Liaodong Bay, near the under-construction nuclear power plant. An increase in temperature could lead to loss of ice shelf, which is important to seals and cubs that use floating ice as a "boat" during migration. Spotted seals in the Bohai Sea and the Yellow Seas are keystone species in the food chain and are an indicator of the overall health of the marine ecosystem. Threats to the seals reveal the impact the nuclear power station would have on the marine environment, and will determine if human activity in the region has exceeded the carrying capacity of the marine ecosystem.

Urban Resources & Energy Security

The future of resource dependent cities is closely tied to their supply of natural resources. In the past, over exploitation of fossil fuels has not only wasted huge quantities of valuable, non-renewable resources, but has also created serious pollution problems.

Dalian's own natural advantage is its busy seaport. For over a century, Dalian prospered on its trade, maritime transportation, shipbuilding, and other industries. However, that changed in 2005, when Dalian positioned itself as the new world-class center for the petrochemical industry, turning Dalian into an environmental time-bomb. In July 2010, Dalian Port experienced one of the most severe marine oil spills in Chinese history, a serious wake-up call for the city. This forced the city's government to reexamine its policy of having the petrochemical industry as a strategic pillar of industry in Dalian. Furthermore, the ecological loss caused by petrochemical pollution is hard to reverse. Dalian, a honeymoon and holiday destination for Chinese tourists, will pay a high price in economic and social consequences for this pollution. The gain from developing the petrochemical industry sector was not worth the costs.

Surrounded by the sea on three sides, Dalian's fisheries should be another important natural resource. Once very rich, the Bohai and Yellow Seas are now facing the collapse of their fisheries. Red tide and land-based pollution have compounded the ocean crisis. Aquatic pollution has also demonstrated the inadequacy of food safety and the impact of pollution on human health. At the same time, over-fishing, aquaculture, and excessive coastal development have made the ecosystem unable and unfit to sustain the survival of Dalian.

The environmental security threats have moved in-land from the port and now threaten rural areas near Dalian. The Dalian sea cucumber industry which developed in recent years has also brought on a number of environmental security concerns. Some coastal areas that are for the development of sea cucumber farming have raised coastal dams and pumped sea water inland along the coasts. These practices have caused salt water to intrude into local ground water. This has led to the

contamination of well water used for drinking in many rural villages in the region. In addition, most of sea cucumber aquaculture owners do not have the capacity for sewage treatment, further polluting coastal waters.

In addition to environmental security risks, pollution and over-fishing have led to conflict with China's neighbors and risk to those who work in the fishing industry. Due to the collapse of fishery stocks in the Yellow Sea, fishermen sometimes cross the boundaries of neighboring country's exclusive economic zones to poach illegally, leading to confrontations with foreign maritime police and international disputes. Meanwhile, the lack of fishery resources has pushed Dalian's offshore fishing fleets into dangerous high seas, leading to additional hardship.

In February 2011, the media reported that some Dalian sea cucumber aquaculture enterprises had reached an agreement with Russia to develop the Kuril Islands, which are under Russian control but have been claimed as Japanese territory. The deal created an uproar in the Japanese government and led to public discontent in Japan. These incidents demonstrate that the Dalian government needs to more carefully navigate regional disputes and avoid becoming entangled in, or otherwise to contribute to, regional conflicts or political issues between states.

Environmental Security

Dalian is pushing the limits of its ecological carrying capacity. Water is Dalian's number one security concern. Dalian's drinking water mainly comes from the Biliu and Yingna Rivers. In recent years, due to climate change and frequent droughts, rainfall has decreased. The total amount of freshwater resources in Dalian is 3.786 billion cubic meters per year. The maximum population this amount of water can support, urban and rural, is ten million people, a number that Dalian will soon pass. In the case of Dalian's city proper, water resources have already reached the level of scarcity experienced during the severe droughts of the early 1990s. With the current urban expansion combined with the inflow of population from outside Dalian, this area will soon reach its population limits and inevitably force some people to live without basic natural resources such as water, a situation often referred to as ecological poverty. Lack of water has become one of the most serious bottlenecks for the survival and development of Dalian.

Water Pollution

Water pollution is also a major health threat to local residents. The majority of the freshwater bodies near Dalian suffer from the stress of pollution. As a source of drinking water, the Biliu River has not been well protected. Scores of gold mines are located along the river. These mines use highly toxic cyanide in their operations and the random tailing piles of waste from the mines often run directly into the Biliu River. Not only have the fish disappeared, the water quality has deteriorated and frequent cases of cancer and other diseases have been found in local villages. The Anshan Xiuyan Tire Factory operates upstream of Dalian on the Yingna River. Industrial and household wastes are being dumped directly into the river, but the upstream regions of both the Biliu and the Yingna rivers are outside the administrative jurisdiction of Dalian, so it is beyond the reach of the city government to legislate. Environmental remediation is in need of public support and strong intervention from the provincial and central governments.

Air Pollution

Air Pollution is becoming the new killer in the city of Dalian. *Time magazine* once wrote an article

describing the air of Dalian as "so clean that you cannot see it", but, with a growing number of family cars the air quality in Dalian has dropped. According to Dalian Environmental Protection Agency, during the first half of 2011, respirable particles in the air increased significantly, with an average 40% higher than last year. As of early 2011, Dalian has 0.9 million vehicles, of which 60 percent are private cars, with the annual growth rate of car ownership as high as 15%.

Climate Change

Dalian's major vulnerability to the impacts of climate change will be agricultural output. Climate change will lead to uneven distribution of rainfall, reduction of forest coverage, and deterioration of the wetland ecosystem. This will result in drought conditions in a growing area of farmland, which will affect food security in Dalian. In addition, increased pests, agricultural diseases caused by climate change, and a reduction of natural predators to control pests will force farmers to use pesticides more regularly and widely. Hence, food safety cannot be guaranteed.

Biodiversity

Species extinction is another challenge Dalian has to face. Dalian is located in the Siberia - Australia flyway, a migration route which serves as an important stopover for millions of birds. The city itself is known for hosting the most bird species in China. However, with the Dalian government now embracing a strategy of urbanizing entire territories and expanding new industrial zones, large numbers of mountainous areas, natural forests, wetlands, and coastal areas will be destroyed, threatening birds and wildlife habitats. "Today birds, tomorrow men" is a bird conservation motto based on sound scientific evidence. Birds are irreplaceable creatures for maintaining the balance of nature and helping with ecological restoration such as seeding plants and trees as well as controlling pests. The loss of habitat for migratory birds will inevitably lead to a sharp decline in bird population and could even drive them to extinction.

As noted earlier in this article, Dalian is home to the spotted seal. However, the spotted seal sanctuaries are now being destroyed by industrial and petrochemical development on Changxing Island. Other threats to seal habitats include the aforementioned Hongheyan Nuclear Power Plant, oil pollution and over-fishing. Species extinction has consequences not only for the ecological balance, but also for the health of the planet and human survival.

Urban Development Security

China's urban population is rapidly growing. This process is the largest urbanization movement in human history. However, urban problems are becoming more and more pronounced as a part of this process. Epidemic diseases, waste disposal, traffic congestion, and lack of available housing add to the stress of rapid urbanization. The development of a city is not without limits. Cities are subject to the availability of resources such as water, land and food as well as economic realities, environmental carrying capacity, and many other factors. Dalian's economic policies are now being influenced by private interest groups such as real estate developers. The investment and construction of new industrial parks will lead to unpredictable environmental damage that will result in economic losses in the future. First of all, the increased urban population is concentrated in Dalian city proper. Little effort has been made to spread out the concentrated population. New residential buildings in Dalian city are mostly high-rises, which increase the city's population density. Urban expansion from Dalian to Lushun, a scenic port district, has severely damaged the beautiful surrounding mountains and forests.

In addition to the damage to the natural beauty of Dalian, this development has also negatively impacted some of the historic areas of the city. Little attention has been given to preservation of significant or notable buildings and districts. Many places of historical interest, such as the century-old Fengming Street, have been torn down, diminishing not only historical relics, but also the value of the city. Dalian is a popular tourist destination and was named as the most livable Chinese city, but as it has had its cultural and natural heritage destroyed, it is losing a resource that supports the city's economic security and ability to seek international investment.

Exploring Possible Responses to Urban Security

To respond to urban security problems, it is essential to establish the rule of law and promote adequate law enforcement. At the same time, according to China's own conditions and cultural traditions, efforts must also focus on improving community education. General educational improvements will expand the capacity of social services and could also reduce unemployment, promote workers' skills, and thereby increase employment and social harmony and reduce social instability.

Public participation and civil society groups are also crucial in the promotion of urban security. Urban security issues face all citizens regardless of their origins. It has deeper and broader implications. Protecting the environment, preventing epidemic diseases, and supporting disaster relief need contributions and participation from the general public. The value of civil society in these activities is undeniable. Public institutions and NGOs have assisted governments and the international community in numerous ways to address security threats. Their contributions are positive and profound. The governments of Chinese cities and agencies at all levels should be more tolerant to the existence of civil society organizations and accept the goodwill of international NGOs.

Regional and international cooperation at the local level is critical in coping with urban security issues. Many of the threats one city faces are the same threats confronting other urban areas, both in developed and developing countries. As China Foreign Affairs University scholar Wang Fan pointed out, "non-traditional security is transnational. Its universality determines that not a single country can solve it, nor can one's security can be achieved at the expense of other country's security."

If we take the city of Dalian as an example of the ways a city is impacted by and can help address urban security issues, we can see that the city could benefit from strengthened cooperation with cities in Japan and South Korea, and learn from the experiences in urban management and development in these and other developed countries. By encouraging civil society and promoting cooperation and exchanges with other countries Dalian can address the environmental and urban security challenge that it faces and promote peace and stability in North-East Asia.

III. Nautilus invites your responses

The Northeast Asia Peace and Security Network invites your responses to this essay. Please send responses to: bscott@nautilus.org. Responses will be considered for redistribution to the network only if they include the author's name, affiliation, and explicit consent.

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