

INTRODUCTION TO ECOLOGICAL SAFETY

BY JIANG MINGJUN



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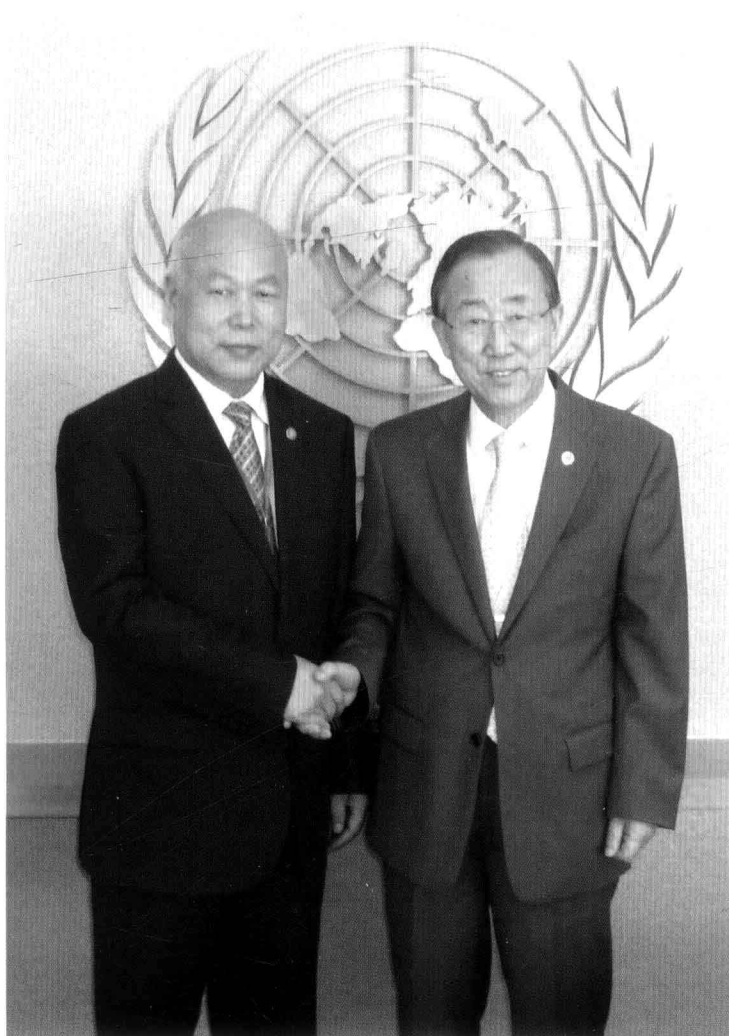
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United Nations Secretary-General Ban Ki-moon met Dr. Jiang Mingjun at the United Nations Headquarters in New York.



THE SECRETARY-GENERAL

30 June 2011

Dear Mr. Jiang,

I write to express my profound gratitude for your congratulatory letter following the renewal of my mandate as Secretary-General of the United Nations.

Upon taking office nearly five years ago, I pledged to carry out my responsibilities to the best of my abilities and to lead by example. I declared myself full of hope for the future – an optimist who, with your support, would seek to deliver more and better for the people throughout the world who turn to the United Nations for life-saving and life-enhancing help.

These beliefs and commitments have guided me ever since. I assure you they will continue to inspire and underpin my second term.

It has been an immense privilege to serve as Secretary-General of this great Organization, and to lead such a courageous and dedicated staff. We have worked closely together to achieve progress on critical global issues of peace and security, development and human rights. We have shown what can happen when we stand shoulder-to-shoulder, united in common cause for the global good. I am proud of all we have done together, even as I am aware of the formidable challenges ahead.

I am determined to build an even stronger and more effective instrument of service to humankind, all while upholding the principles enshrined in the Charter. As I said at the start of my term and believe all the more passionately today, the United Nations – our United Nations – is needed now more than ever before.

Yours sincerely,



BAN Ki-moon

Mr. Jiang Mingjun
Director-General
International Eco-Safety Cooperative Organization
Chairman
Climate Change Committee of CAPDI
Beijing

About the Author

Dr. Jiang Mingjun was born in Jiaozhou city, Shandong province, China in 1956. He graduated from Mudanjiang Normal School Heilongjiang Political and Legal Cadre Management College, and obtained a doctoral degree in ecological safety in International Academy of Ecology and Life Protection Sciences in Saint Petersburg, Russia. He is now an Academician of International Royal Heritage Academy, vice president and Academician of International Academy of Ecology and Life Protection Sciences and the Visiting Professor of Dalian University of Technology.

Main Resume:

1980–1994, Director of Supervisory Office of Discipline Inspection Committee of Dongning County, Heilongjiang Province; Deputy Director General and Director General successively for the Supervision Bureau of Dongning County, Heilongjiang Province; Inspector of Inspection Bureau of Mudanjiang City, Heilongjiang Province; Inspector for Supervision Department of Heilongjiang Province;

1995–1996, Inspector for General Office of Heilongjiang Provincial Government (responsible for external liaison), Secretary General of Xu Beihong (Heilongjiang) Foundation and Deputy Secretary General of Editorial Committee for Government Affaires Dictionary of PRC;

October 1996–July 2002, Secretary General of International Coordinating Committee for Asia-Pacific Region and Coordinator of Ecological Center of UNDP;

October 2002–February 2005, Deputy Director of Ecological Center of UNDP, Executive Officer of UN Global Compact Development Program,

2003–2005, Committee Member of World Political Forum;

March 2005–February 2006, Standing Committee Member of Steering

Committee of Urban Planning Management of UN-HABITAT, Vice Chairman of North/North Corporative Organization and CEO of Asia-Pacific Region, and Rotating Chairman of Global Urban Development Organization;

February 2006–Now, Vice President of UN/International Academy of Ecology and Life Protection Sciences, founding chairman and Director General of International Ecological Safety Collaborative Organization, Chief Expert of Russian Ecological Committee under UNEP;

June 2012–Now, Chairman of Ecological Safety and Climate Change Committee of ICAPP.

Main Publications:

Associate editor of *Government Affaires Dictionary of P.R.C (Volume I, II, III)*; editor-in-chief of *Ecological Safety: The Foundation of a Country's Survival and Development*; *Ecological Safety: The Special Mission in the Peacetime*; *Putin's Eight Years: Russia's Way of Revival (Political Volume, Economical Volume, Diplomatic Volume)*; *Introduction to Ecological Safety (Chinese & English version)*; *Ecological Safety and Food Safety*; *Ecological Safety: An Extremely Urgent Theme of the Time. Crisis, Reflection and Transformation*, *Ecological Safety: The Imminent Theme of Our Era*; *Anthology of Dr. Jiang Mingjun, (the first volume)*; series of books such as *Crisis, Reflection and Transformation*; *Ecological safety: Bridge Between Europe and Asia*; *Save the Planet: IESCO in Action, (Chinese & English versions)* of *International Ecological Safety Annual Report 2011*, etc. In recent years, he has published over 160 academic papers in publications both home and abroad.

Prizes:

1998, "Special Contribution to International Disaster Relief" by Russian Coastal Border Government.

2000, "Vernadsky Golden Medal" by United Association of International Academy.

2003, "Peter the Great Medal" by Russian Awards Committee.

2005, "1st Lomonosov Golden Award" by International Ecological Safety Academy of Sciences.

2008, "Pioneering Star" by China Pioneering Commendation Congress at New Age.

2009, “Special Contribution to Kansas City” by Kansas City Government.

2009, “Honorary Citizen of Atlanta City” by Atlanta City Government.

2010, “Service to Humanity Award” by ICAPP.

2011, “Honored Scientist” by United Association of International Academy.

2011, “The Most Excellent Medal of Golden Lotus” by Norodom Sihamoni, the King of Cambodia.

2012, “Humanitarian Spirit Medal” by International Academy of Ecology and Life Protection Sciences.

2012, “Academician Porodina Ecological Safety Contribution Award” by Russia Bio-engineering Fund.

Foreword

Along with the continuous development of world multi-polarity trend, further deepening of economic globalization, burgeoning of regional cooperation, ever closer and frequent inter-state exchange, constant upgrade of science, technology and productivity, peace, development and cooperation have become an irreversible world trend and the current of our times. Meanwhile, the hot spots in some areas flaring up unexpectedly, widening the gap between the South and North and overall economic imbalance have become the focus of world people's concern. In response to an international community full of opportunities and challenges, all the countries should strengthen their mutual trust, coordination, further exchanges and cooperation and work hard for the world peace and common prosperity.

I. Connotation of Ecological Safety

More and more facts have shown that ecological crises will greatly reduce chances of human survival and incur ecological refugees, national turbulence and social instability. Maintenance of ecological safety is the top priority for human survival and development. Global ecological problems related to human security, i.e. rapid deforestation, extreme climatic change, water resource pollution, food security and food crisis are recurrent warning signals. Looking back into the history of mankind, fertile soil cultivated early civilizations, but some ancient civilizations declined because of the loss of the bearing capacity for life. Today, there are about 20% of the world's lands which have degraded due to the impact of human activities. The dense forest has always given human civilization illumination, while the decline and depletion of forests also pushed human beings to the darkness. Engels in "Dialectics of Nature" made scientific comments and warnings. He said: "The people in Mesopotamia, Greece and Asia Minor, destroyed the forests to obtain

arable land, never imagined that with the removal of the forests, the collecting centres and reservoirs for water, it became barren land.” The historical facts warned: “Let us not, however, flatter ourselves too much on account of our human victories over nature. For each and every such victory, nature will take its revenge on us.”

Ancient Babylonian Civilization: Historically, famous Babylonian civilization emerged in the fertile Mesopotamian plain between the Tigris and Euphrates rivers. Due to massive deforestation, overgrazing of grassland and the deterioration of ecological environment, large areas of the original forest and grassland gradually turned into desert. Until the end of fourth century BC, the ancient Babylonian civilization declined.

Ancient Egyptian Civilization: The forest and the humid climate of the Nile valley gave birth to the ancient Egyptian civilization, but the disappearance of forests had taken away the ancient Egyptian civilization. In modern Egypt, more than 96% of its territory is covered by desert, and it is one of the countries with the least forest resources in the world. In response, some historians have sighed and said: “As the forests disappear, the cost of the Egyptian 600-year civilization is poverty and desolation of nearly 30,000 years.”

Ancient Indian Civilization: India, as one of the four oldest civilizations in the world, became prosperous around 3,000 BC. However, deforestation, grassland destruction and population growth finally resulted in Tal Desert and in a vicious circle between human and environment.

Ancient Civilization of the Yellow River: The basin of the Yellow River is the cradle of Chinese civilization. It has always been the political, economic and cultural center of China during the 3,000-year history, from the Shang dynasty to the Northern Song dynasty. Due to deforestation by wars and land reclamation, Xi'an, after Tang dynasty, was no longer the capital of China, and the Yellow River civilization lost its original splendor. Fortunately, compared with other ancient civilizations, the Yellow River civilization has not been disrupted but benefited from its tradition of tolerance for all and mutual assimilation to continue its existence and development to the present day and formed a multi-ethnic, multi-cultural pattern.

Angkor Civilization: The historical site in Angkor of Cambodia, the Great Wall of China, the pyramids of Egypt and Borobudur of Indonesia are called the

“Four Great Oriental Wonders”. However, the Angkor civilization was not found until 1861 by a French naturalist after it had been silenced in the thick jungles for 400 years since the 15th century. Cambodia, with the longest history in Southeast Asia, was founded in the first century A.D. In the year 802 A.D., Cambodia entered into Angkor dynasty, which is the most powerful and the most prosperous period in the Cambodian history. And it's just from then on that Angkor began to go in for large-scale construction, which cost more than half of the national strength, so that later Angkor could not withstand the invasion of Siam and the natural disasters and pestilences. Angkor dynasty was forced to move east to Phnom Penh. Angkor civilization was destroyed afterwards. The roots of quickly growing tropical giant trees here gradually hogged up and turned over the stones, which made the buildings collapsed, and then Angkor was buried in a tropical rainforest for 400 years.

Therefore, attention should be given to ecological safety from the perspective of national strategy in the sustainable development of society, economy and environment because ecological safety is the basis of human survival and development.

II. Characteristics of Ecological Safety

Ecological safety is a kind of state of human environment or Natural ecological conditions. In the process of the relationship between human beings and the environment, ecosystem is essential to satisfy human existence and development.

(1) Relativity of Ecological Safety

The standards may differ in countries and regions or different times (development phases). There is no absolute safety but only relative security. The effect on human existence and development by ecological safety, consisting of many factors, is respectively at varying degrees; therefore, the conditions for ecological safety differ accordingly. If the degree of ecological safety is measured by ecological safety coefficients, the guarantee of ecological safety differs. As a result, a set of evaluation indicators for the quality of ecological factors and their comprehensive system can be established to assess a region's or country's ecological safety situation. Ecological safety is not static but change with the environment, that is, the change of ecological factors will influence human life, survival and development, and result in changes of the level of Ecological safety or from safety to unsafety.

(II) Locality of Ecological Safety

It is unusual that ecological disasters occur regionally or in the whole globe, so the threats on ecological safety are often regional or local. If some region is not safe, it does not mean that the whole globe is also in danger. First of all, the concept of ecological safety focuses on macro ecological problems (national, regional and even global ones). Guided by the theory of macro-ecology, it relates problems in specific spots or relatively small areas to form comprehensive and integrated points of view. Research on ecological safety can be set up by different standards, i.e. from individual species to the ecosystem of natural ecology, from individuals, communities to nations of national ecological safety. At present, many most worrying ecological safety issues, such as floods, debris flow and storms, belong to regional ecological safety disasters which can be studied according to their regions (drainage areas) or administrative areas.

(III) Adjustability of Ecological Safety

Ecological safety is people-oriented and measured by the quality of ecological factors which are required by people. Although ecological safety consists of many factors, it is unsafe when one or more factors fail to meet human needs of existence and development. Measures should be taken to treat the unsafe circumstances and regions, and to turn unsafe factors into safe ones. Threats always come from human activities, which cause ecological damage and turn the ecosystem into a threat in their life. Human beings have to pay the price, if they want the threats removed, i.e. the cost of maintenance and investment in ecological safety.

III. Basic Definition of Ecological Safety

Ecological safety, assurance of survival in fact, means a dynamic process in which the living environment (including atmosphere, soil, ocean, forestry, wetland, water etc.) that Earth life-supporting system depends on is not destructed and threatened.

(I) Three Categories of Ecological Safety

Ecological safety can be divided into three categories: the first is natural ecological safety. Natural ecological safety issues usually caused by astronomical and geological factors, including plate drift, volcano eruption, hurricanes, tsunami, earthquake meteorolite attacks, etc. The second is ecological system safety. For

instances, forest system safety, wetland system safety and marine system safety constitute the three Important Ecological system safety. The third is human ecological safety (also called national ecological safety). National ecological safety usually caused by social and economic activities of human beings, i.e., nonconventional safety, environmental safety, species safety, natural heritage safety, nuclear safety and radiation, life safety, urban safety, resource safety and sustainable development, etc.. The formal ones are beyond human control and man has to live with them, while the latter ones can be controlled so long as our social mechanism, values and attitudes keep in line with nature, and we choose a nature-friendly road of ecological safety. Natural ecological safety, ecological system safety and human ecological safety are closely connected with each other. For instance, the over-exploitation of groundwater and underground mineral, unscientific hydraulic engineering, the over-development of forest resource, wetland resource and marine resource or underground nuclear test can change the geological construction and cause earthquake, tsunami, calamity and conflicts.

(II) Basic Characteristics of Ecological Safety

1. Ecological crises can weaken a country's sustaining capacity

For example, the winter storms hitting Southern China on January 10–28, 2008 was actually an unexpected ecological disaster, which affected 14 provinces with a stricken population of 77.862 million and caused a direct economic loss of USD 40 billion. During the first half of 2010, five provinces in China's southwest such as Guangxi and Yunnan have suffered serious drought, which caused the reservoir dried up, crops failure and residents' lack of water. The loss only caused by the drought in Yunnan was far beyond the loss caused by the heavy snow in southern China in 2008. Since late July this year, due to the continuous rain, the grave debris flow disaster in China's Gansu and Sichuan province have caused more than 1,300 people dead, nearly 500 people missing.

2. Ecological crisis could trigger mass exodus of ecological refugees, regional unrest and social instability

During the summer in 2010, Russia suffered from hot weather attack, which have taken away at least 5,000 people's lives and caused more than 550 forest fire, which covering 190,000 Hectare. The smothery forest fire and smog enveloping

Moscow had caused more than 100,000 people homeless and brought panic among people there.

3. Ecological crises can have a negative impact on a country, its neighboring countries and even the whole world, thus frequently causing diplomatic disputes or even a regional war

Sudan's Darfur regional crisis started over the scrambling for water resources. A regional war usually starts with a long process of diplomatic negotiations in advance while the outbreak of unexpected eco-disasters often comes all of a sudden, and always causes graver damage to economy, people and their property than a regional war. Therefore, we shall orientate ecological safety at the strategic altitude of the country, as ecological safety is not only environment protection but a direct factor effecting human survival and national development.

(III) Components of Ecological Safety

1. Natural Ecological Safety

It includes earthquake, tsunami, hurricanes, volcano eruption, plate drift, meteorolite attacks, and etc.

2. Ecological System Safety

It includes forest system ecological safety, wetland system ecological safety, marine system ecological safety, and etc.

3. Human Ecological Safety (also called National Ecological Safety)

The first is non-conventional safety, mainly including natural catastrophes, grain and food safety, geological disasters, water resource safety, labor safety, accident caused by negligence and terrorist threat, and etc. The second is environmental safety, mainly including extreme climate change, emission of carbon dioxide, pollution of water resources, desertification, air pollution, ocean pollution, toxic and harmful pollutants, sea level rise, sea water intrusion, red tide and depletion of ozone layer, etc. The third is species safety, mainly including species (including animals, vegetations, and micro-organisms), invasion of alien species, etc. The fourth is life safety, mainly including population safety, poverty, endemic diseases, epidemics, HIV diseases, drug addictions, etc. The fifth is natural heritage safety: the national forest park protection and nature reserve safety, etc. The sixth is nuclear safety and radiation. Nuclear safety mainly includes the two parts of military

nuclear safety and civil nuclear safety, civil nuclear safety includes nuclear leak and pollution. Radiation includes chemical radiation, light radiation, electronic radiation and electromagnetic radiation, etc. The seventh is city safety, mainly including sudden emergency in city, public safety, transportation safety, etc. The eighth is resource safety and sustainable development, mainly including eco-civilization, sustainability of economy, society, ecology, city and resources.

(IV) Strategic Positioning of Ecological Safety

1. Ecological Safety Is an Important Part of National Security

Each country and its government bear the basic responsibility of maintaining ecological safety to ensure a sound national economic and social life. With the increasingly serious global ecological crisis such as the ecological problems caused by extreme climate change, ozone depletion, acid deposition, water resource pollution, desertification, deforestation, bio-diversity extinction, hazardous pollution and trans-boundary movement, people have realized that once ecological safety is damaged, both economic development and human existence will be affected. Therefore, ecological safety is as important as politics, military service and economy. It can be said that ecological safety is an essential part of national security. Political, military and economic safety is an important guarantee of ecological safety which, in turn, serves as a vital basis for it.

2. Ecological Safety Concerns Human Survival and Development

Society develops in a process in which the eco-environment also undergoes constant changes, and people and environment have an evolutionary interlocked relationship. Historically, the great civilizations of ancient Egypt, Babylon, and ancient Greece were destroyed due to wars, incompetence of leaders, and more importantly, the loss of land's sustaining capacity. Thousands of years of Chinese civilization shows that human and nature have never contradicted each other as markedly as now. The shortage of resources and serious restriction of environmental capacity stand in the way of social and economic sustainability of China. Conservation and improvement of eco-environment will contribute to productivity. There is no room for further development for the future generations if the ecological environment is not capable of renewal and economic reproduction cannot be maintained any more. China's population accounts for 19% of the whole world with

scarcity of resources and rather weak eco-environment. Thus, should the ecological environment be damaged, the whole country would lose its most basic conditions for existence, which would really be an unimaginable scenario.

3. Ecological Safety Bears on the Immediately Concerned Interests of the Public

Ecological safety contributes to public health, quality of life, a sound living and working environment and it is also beneficial for increasing the average life span. At present, the damages to the ecological environment are a global concern. This is reflected in seriously polluted water, air and soil, persistent ecological deterioration, and shortage of clean water and fresh air in some places, especially in northern area. This brings about enormous damage to social development and public life. Consequently, maintaining ecological safety is requisite to guarantee the immediate interests of the public.

IV. Grave Situation Confronting Present Ecological Safety

Recently, UN Secretary-General Ban Ki-moon pointed out in one of his articles published in Washington Post that China is exerting itself in addressing the environmental issues, and that in the past century we have witnessed three economic transformations which were actually the industrial revolution, technological revolution and the current globalization. In spite of its positive progress made in ecological safety and environmental protection, world still faces unprecedented ecological challenges: environmental pollution doing harm to public health, ecological crisis gravely weakening economic increase, destruction of species resources restricting social development, and recurrent natural disasters giving rise to enormous loss of life and property. Ecological deterioration and failing systematic functions aggravate natural disasters.

V. Striving for Harmonious Development between Ecology and Economy

Ecological crisis results from both natural disasters and human behaviors, mainly including the long-standing extensive economic growth mode, improper utilization of resources and, at the same time, incompetent supervision and management as well as less emphasis on protection and management than that on development and construction. Population increase and expanded utilization of resources, spurred by urbanization and industrialization, exert increasingly huge pressure upon the eco-environment, which thus faces more severe challenges. Accordingly, effective

measures must be taken to address the ecological issues for harmony between ecology, economy and society. Practices show that, eco-construction and economic development do not contradict each other and can be coordinated and complemented. We will pay a great deal of efforts if we take action after pollution is already done, but will get twice the result if we did otherwise. Thus, China should learn from other countries for sustainable economic and ecological development.

VI. Properly Handling Four Relationships and Five Elements of Ecological Construction

For ecological construction, one has to properly handle four relationships: The first is the relation between ecological civilization and ecological safety. Ecological civilization is a guideline in ideology field, and ecological safety is the concrete measure and basic protection for the realization of ecological civilization and Scientific Development Outlook. The two are perfectly combined. The second is the relation between ecological safety and environmental protection. In the past, people always believed that ecological safety was an important part of environmental protection. However, the practices have proved that environmental protection is an important part of ecological safety, since ecological safety is actually a grand concept more than environmental protection and people should get to know ecological safety from the strategic perspective of human survival and national development. Therefore, ecological safety is the basis of human survival and national development and also an important part of national safety. The third is the relation between environmental protection and economic development. People used to believe that economic development would inevitably damage the ecological environment and that environmental protection would affect economic development. As far as I am concerned, the two are not contradictory, and what we need to do is to coordinate them to realize balanced development, performing economic development and ecological environment protection simultaneously, and besides, national integrated quality of its people shall be raised to truly realize the sustainable development of economy, ecology and society. The fourth is the relation between humans and nature. Eco-construction should be performed in the light of local conditions and should put people at the first place to realize the harmony between human and nature.

Five elements of ecological construction: The first is location. Many factors,