

Characteristics of the Current Global Environmental Governance and China's Response^{*}

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Since the 2012 Rio UN Summit on Sustainable Development, global environmental governance has gained a new momentum. The 2014 UN Environment Assembly marked an important step forward in reforming global environmental governance. The Climate Summit to be held in Paris at the end of 2015 is very much anticipated that various multilateral and bilateral diplomatic activities have been undergoing intensively. All these facts suggest that the importance of global environmental governance has become increasingly prominent. It is therefore necessary to deepen the understanding of and research in global environmental governance. What are the main characteristics of the current global environmental governance? What are the opportunities and challenges for China's involvement in global environmental governance? So far, the domestic academic circles have not done much research in these questions. This paper aims to give a tentative answer to them.

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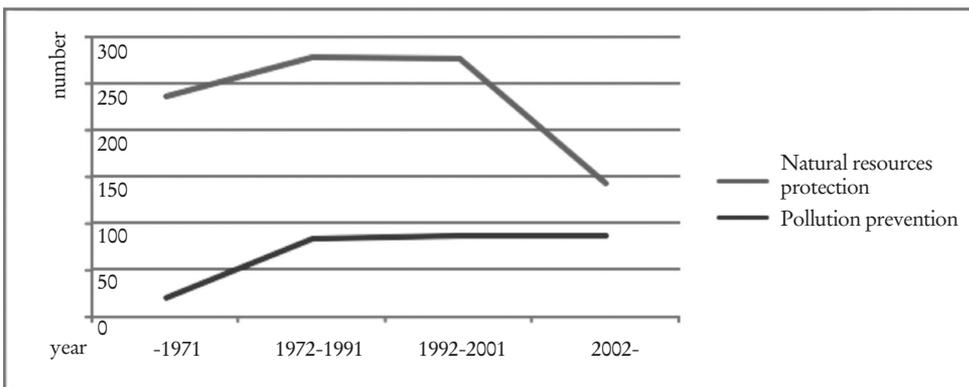
I. CHARACTERISTICS OF CURRENT GLOBAL ENVIRONMENTAL GOVERNANCE

In recent years, the following characteristics have been witnessed in global environmental governance.

1. Rising Concern over Industrial Pollution

So far, about 750 regional and global multilateral environmental agreements (MEAs) have been signed, covering such areas as protection of natural resources (energy, fresh water, species and habitat) and pollution prevention (water, atmosphere, ocean and wastes). Though agreements on pollution prevention account only for a quarter of the total, in recent years more attention has been paid to this area due to its serious impact on environment. Figure 1 demonstrates a rising trend of the number of MEAs on pollution prevention (including that of biochemical and nuclear weapons) relative to time, but a decreasing trend in terms of that on natural resources protection.

Figure 1 Change in numbers of MEAs on natural resources protection and pollution prevention



Source: International Environmental Agreement (IEA) Database Project, available at: http://iea.uoregon.edu/page.php?query=base_agreement_list&where=start&InclusionEQ=MEA&SubjectIN=Weapons/Environment/Nuclear, April 10, 2015.

Global environmental problems, such as global warming, ozone depletion, persistent organic pollutant (including Dioxin,

DDT and other chemicals) and heavy metal pollution such as mercury, mainly result from modern industrial development. Hence, Global Environmental Facility (GEF)¹ — world's largest environmental assistance fund — has kept increasing its assistance in the industrial field. For example, capital allocation to controlling persistent organic pollutants has increased from 2% to more than 10%.² In the past decade, developed countries no longer actively take responsibilities due to slowdown of global economy. Despite new environmental issues constantly emerge, it is very difficult for a global agreement on environmental protection of any given issue. Nevertheless, due to the huge negative impact of mercury on environment, the international community signed Minamata Convention on Mercury in 2013. This demonstrates global concern over industrial pollutants.

2. Governments' Long-time Leadership in Global Environmental Governance

Over the years, many people, who have been observing global environmental governance, emphasize the important impact of participants outside governments, yet both the development of international environmental law and practice of global environmental governance show that governments play a dominant role in global environmental governance, for mainly two reasons:

First, from the perspective of international environmental law, the legal subjects of international law that have both complete rights and obligations are governments. In legal documents established among states in this regard, such as environmental agreements, governments (including some international organizations), are signatories, while no any other civil organization and entity in the private sector can be parties in relevant negotiations and decision-making, though they can influence (mostly indirectly) the negotiations. This determines that only the governments can occupy the dominant position in policy making related to global environment governance.

Second, in the practice the governments are called for to take the initiative in guiding and digesting the external cost of global environmental governance before the establishment of a

complete global environmental governance system (featuring the effective participation of governments, civil organizations and the market). In the implementation of environmental treaties and agreements, for example, governments can offset external economic cost by adopting relevant policies or providing direct funds while encouraging more relevant parties to play a role in the endeavor. Moreover, when developing countries and developed ones are gaming over global environmental interests, the results can only be fair or just unless such gaming has taken place at official level. Therefore, both the reality and actual practice of international politics necessitate that governments must play the dominant role.

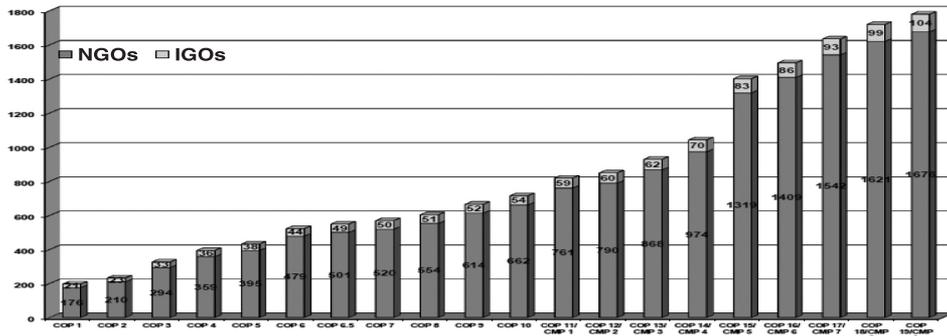
3. Increasing Influence of Non-governmental Organizations (NGO) on Decision Making in Relation to Global Environmental Governance

Non-governmental organizations (NGO) or civil organizations are not the legal subjects of international environmental law and they are not entitled to enjoy the rights provided by the international environmental law, nor do they have to undertake the relevant obligations. However, relying on their counsel positions in the Economic and Social Council of UN (ECOSOC) and other means such as providing evidence through in-field investigation, scientific information and policy proposals, they attend various global forums, negotiations and conferences, and by way of implementing social supervision, carry out third-party assessment and push forward the actual implementation of such governance, so as to indirectly or partially impact decision making in relation to global environmental governance.

Take the Stockholm Convention on Persistent Organic Pollutants for example. At annual conferences to assess new organic pollutants, the American Chemistry Council (ACC),³ Bromine Science and Environmental Forum (BSEF),⁴ the Nature Conservancy (TNC)⁵ and other NGOs provide research and evaluating messages, which are all important references for negotiations on various issues.⁶ Again take climate change negotiations for example. The number of NGOs participating in Conference of

the Parties (COP) increases significantly every year (see Figure 2).⁷

Figure 2 Change in numbers of NGOs and IGOs⁸ participating in COP



4. Active Exploration of Public-Private Partnership in Environmental Governance

The production and sales behavior of the private sector in the course of globalization result in greater negative impact on global environment; moreover, the lack of resources (fund, technology, and talents, etc.) on the part of the government for environmental governance makes it inevitable for the private sector to get involved. Besides, the private sector boasts environment-friendly technology, huge sums of social capital as well as innate sensitivity to the efficiency of the behavior, which might just offset the government's inefficiency if it can be involved in global environmental governance.

However, for the private sector, its profit-oriented tendency and the public welfare nature of environmental protection form a natural pair of contradictions, and makes the private sector less motivated to get consciously involved in global environmental governance. The public-private partnership (PPP) provides a logically reasonable approach for the government and private sector to obtain the aim of "each taking what it needs through win-win cooperation." So far, this model is still at the stage of being explored. The reason is that such a cooperative model, featuring government dominance, does not hold much appeal to the private sector because it does not take economic profit as the main factor, thus hindering its participation. For example, as early as in 2007, the

Global Environmental Facility started a PPP program and created a supportive fund worth US\$80 million. So far, however, except some conferences and small-scale capability-building projects, no further activities have been taken.⁹ With regard to reducing persistent organic pollutants, the PPP model is used to promote the R&D project on substitutes of DDT in fight of Malaria globally, but for the same reason, no substantial progress has been made.¹⁰

Having said that, the international community does not reduce its expectation and passion for the PPP model, and it has been striving to achieve a breakthrough in this regard. Since 2013, the Global Environmental Facility has considered PPP as the main means of financing and implementation of global environmental governance and gathered new resources to promote relevant work.¹¹ The 2014 APEC Financial Ministers' Meeting decided to make PPP the basic model of resource exploration and environmental protection, in addition to mentioning that commercial viability would be taken as an important factor.¹²

5. Important Role of Cities as Major Players in Environmental Governance at the Sub-national Level

The expansion of urbanization and environmental pollution thus resulted are becoming main issues in global environmental governance. According to a UN estimate, by 2030 about two-thirds of the world population will live in cities, and by 2050 the urban population will have reached 5 billion.¹³ With regard to urban environmental pollution, a report by the United Nations Environment Program (UNEP) shows that cities consume about two-thirds of global energy, and discharge more than three quarters of world's greenhouse gas due to energy consumption.¹⁴ Carbon emission from some metropolitan area can exceed that of a middle country.¹⁵

In fact, as early as in 1987, *Our Common Future* (Brundtland Report) paid attention to the issue of urban environment. It is said in the report that cities are places where human beings inhabit and they should be the center of seeking sustainable development.¹⁶ In Agenda 21 (1992), Chapter 28 mentioned "local authorities should adopt 'a local Agenda 21'," emphasizing the importance of

local authorities in environmental agenda initiative, technological innovation and implementation process.¹⁷ With the announcement of “a local Agenda 21,” urban environmental protection has become an important impetus of global environmental governance.

Taking climate change for example. This issue has been rising in importance in the domestic political agenda of various countries. Regional climate change initiatives promote activities to slow down climate change in cities. From 1992 to 2009, 274 cities of EU countries adopted strategies responding to climate change.¹⁸ According to the assessment of the fifth report by the Intergovernmental Panel on Climate Change (IPCC), of all the cities it had investigated, 48% of them responded that they were making plans and taking actions of mitigating climate change.¹⁹

What deserves to be mentioned is that the climate networks among cities throughout the world are playing an increasingly important role in facilitating exchanges of relevant information, knowledge and technology, and promoting the capability of mobilizing resources in climate politics and of boosting global impact.²⁰ At present, International Council for Local Environmental Initiatives (ICLEI)²¹ and C40 Cities Climate Leadership Group (C40)²² are two most representative urban networks. The exchange of best practices and related databases established by the latter make urban climate networks a platform of resource aggregation and the leader of technological innovation. Furthermore, with the development of transnational urban climate networks, more and more cities in developing countries began to join them. ICLEI, for example, actively assists its members to develop local greenhouse gas emission strategies. Since 2009, more than 1,000 cities in developed and developing countries have participated in the network. It can be anticipated that urban environmental governance actions will play an important role that cannot be ignored in the process of global environmental governance at sub-national level, and will become a beautiful landscape of global environmental governance.

Urban actions will play an important role in global environmental governance at sub-national level.

6. Competition for Resources Calls for Strengthening Collaboration among Different Environmental Mechanisms

Due to the large gap between the amount of funds available and actual demand, competition between different environmental mechanisms is becoming increasingly fiercer.²³ The pressure of competition is also from the fact that governance activities are called for in many environmental areas, yet most mechanisms in these areas operate in independence, which further exacerbates the shortage of resources.

The pressure from competition for resources urges the international community to continuously promote collaboration among various environmental conventions and agreements, as evidenced by the inclusion of relevant concepts in a number of important UN documents. For example, the final documents of the 2012 Conference on Sustainable Development clearly raised necessity of strengthening collaboration between environmental conventions and agreements.²⁴ Despite initial concerns on increasingly greater pressure arising from competition for resources (mainly financial), the idea of collaboration had been resisted all along. On the part of the UN, out of the urgent need to increase the efficiency of its own institutions, it has been making efforts to promote collaboration between environmental mechanisms in some areas.²⁵ For example, a number of collaborative mechanisms had been finally accepted after four to five years of discussions in 2013, and they were Stockholm Convention on Persistent Organic Pollutants, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, and Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.²⁶

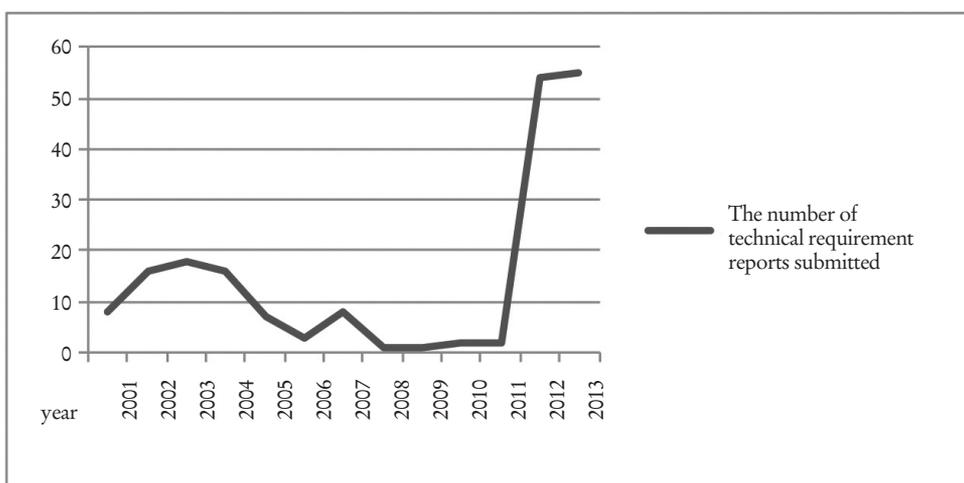
7. Developing Countries' Increasing Demand for Technological aid

In recent years, in the process of participating in international environmental cooperation, it has become increasingly difficult for developing countries to apply for financial aid. Developed countries, as major donors to aid funds for global environmental governance,

have greatly reduced their expenditure for the cause because of the financial crisis, the economic downturn and weaker willingness for cooperation. Despite the broader areas of environmental improvement,²⁷ the increase of the budget of the Global Environment Facility, the core agency of the current international environmental assistance to developing countries, is not obvious. In addition, effects of financial aid on improving developing countries' internal environment are not as good as expected. These countries are shifting their focus onto enhancing the ability of lasting environmental improvement. The environmental and economic benefits brought by environmental friendly technologies can merely meet the needs of developing countries.

In terms of climate change, for example, in recent years the developing countries' need of environmental friendly technology has demonstrated a growth spurt. The report for technological aid submitted by developing countries to the Secretariat of the Convention (Figure 3) shows: After relevant technical mechanisms were established at the UN Climate Conference in Durban in 2010, the number of technological aid requirement reports submitted by developing countries increased unprecedentedly.

Figure 3 Number of technological aid requirement reports submitted by developing countries to the Secretariat of the UN Framework Convention on Climate Change



8. Increasing Influence of Developing Countries on Global Environmental Governance

Compared with other types of multilateral mechanisms, the multilateral mechanisms of environmental governance are diplomatic platforms in which the developing countries can get fully involved when they are more experienced in diplomacy and the developmental goals are comparatively clear. Since the 1970s when global environmental governance was officially launched, multilateral environmental governance mechanisms have provided the developing countries with a relatively fair platform; hence, these countries can take an active part in and their interests can be expressed in both the legal documents they signed and the subsequent practices to enforce these documents. Generally speaking, however, the developed countries still hold a dominant position in the South-North environmental relations due to their advantages in capital, technology and intellectual property.

In recent years, with the rise of developing countries as a group and their growing international influence in environmental issues, their voice and influence on global environmental governance have been strengthened. The developed countries have to take a more serious attitude towards the views and appeals of the developing countries. At the 2009 Copenhagen Climate Change Conference, it is precisely because of the concerted efforts of the BASIC Group (Brazil, South Africa, India and China) that Copenhagen Accord was reached eventually though it is not a legal-binding one. Since then, by way of intentional coordination, the BASIC have held their positions and expressed a unanimous voice in climate negotiations, exerting a major impact on the negotiating process and becoming an important force for the developing countries to challenge the developed ones in climate negotiations.²⁸ It is also because of the positive efforts made by the developing countries that the “principle of common but differentiated responsibilities” was written in *The Future We Want*, the final document of Rio+20 Conference, despite that the feasibility of the principle has constantly been challenged by the developed countries.²⁹

9. Increasing Split among Developing Countries

Should it be true that the developing countries in environmental negotiations were united before the 1980s, after the end of the Cold War, due to the diversification of interests on the part of the developing countries and effort made by the developed countries to split them, division among the developing countries has kept growing more serious. For example, at the early stage the developing countries formed Group of 77 Plus China (77+1) to challenge the developed countries in climate change negotiations. Later, this camp has gradually turned weak, dividing into four groups: small island states, the least developed countries (LDC), African countries and Latin American countries. After the 2009 Copenhagen Conference, the Basic Four and a group of developing countries with a similar position have appeared. Now, the “77+1” bloc still exists in international climate negotiations, but more in the form than in the content. A similar situation has also been witnessed in negotiations on other environmental issues.³⁰

10. Elevated Position of Environmental Governance in Global Governance

Since the end of the Cold War, the importance of global environmental governance has grown increasingly prominent in global governance, a situation the more evident now. This is mainly shown in two aspects: first, the gravity and urgency of the global environmental problem have become ever the more outstanding. In Outlook on the Global Agenda 2015 released by the World Economic Forum, among the world's topmost concerns three are related to environment, which are environmental pollution in developing countries, frequent occurrence of extreme weather, and accelerated depletion of water resources.³¹ The report clearly states that environmental issues have become, unprecedentedly, important topics in global dialogues.³² Besides, compared with global governance in other areas, the international environmental negotiations have turned out extremely outstanding in terms of extensiveness and participation. According to UNEP's statistics, between 1971 and 2007 more and more countries approved the Basel Convention, UNFCCC and Convention on Biological

Diversity, and the number of signatory countries of such international environmental conventions and agreements far outmatch those signing any other type of international conventions and agreements. Of the 14 most important UN environmental conventions, such as the UN Convention on Climate Change, Kyoto Protocol on Climate Change and Basel Convention, 13 have more than 100 member states each, and five of them have more than 180 member states each.³³

Table 1 shows the statistical and comparative changes in the number of parties in several important multilateral environmental conventions and agreements, indicating an increase of the number of institutions joining environmental conventions and negotiations in broader areas.

Table 1 Changes in the number of parties in several important multilateral environmental conventions and agreements

Title of Environmental Agreement	Signatory Countries	Participants of Conference of the Parties (COP)
Convention on Biological Diversity ³⁴	150 (1992), 193 (2014)	1st COP: 95 parties, 7 UN organizations, 27 international organizations, and 120 NGOs; 11th COP: 169 parties, 16 UN organizations, 41 international organizations, secretariats of 8 relevant conventions, and 270 NGOs
Convention for the Protection of the Ozone Layer ³⁵	47 (1989), 197 (2014)	1st COP: 31 parties, 51 observer states, and 18 international organizations; 25th COP: 142 parties, 7 UN organizations, and 54 representatives of research institutions
Stockholm Convention on Persistent Organic Pollutants ³⁶	90 (2001), 176 (2014)	1st COP: 79 parties, 55 observer states, 9 UN organizations, 5 international organizations, and 63 NGOs; 6th COP: 153 parties, 14 observer states, 16 UN organizations, 3 international organizations, 16 secretariats of relevant conventions, and 74 NGOs

11. Urgency in Reforming Global Environmental Governance

It is indisputable that environmental governance systems are

fragmented, multi-centered and inefficient due to the scattered and overlapped global environmental governance mechanisms. According to a UNEP report, among the confirmed 320 targets of global environmental governance by 2012, half of them had seen no progress whatsoever, and the situation in some cases even has turned worse.³⁷ At the same time, an overall downturn has been observed in the global economy, and the contradiction between traditional mode of development and limited resources has become one of the biggest bottlenecks of global economic recovery. Thus, seeking a sustainable green development mode has turned out to be a concept of development accepted by countries the world over. The global environmental governance mechanism with the UN at the core, would take greater responsibility. Hence, reform of it is necessary.

Article 88 of *The Future We Want*, the final document of the 2012 UN Conference on Sustainable Development, states: “UNEP will play an important coordinating role in future global environmental governance,” and concrete suggestions of reforming the UNEP were proposed so that the institution can lead global environmental governance in legal status, capacity building and business definition. The 2013 UN General Assembly agreed to set up the UN Environment Assembly (UNEA). In 2014, UNEA held its first conference, initiating the reform of the UN global environmental governance. It can be anticipated that, under the pressure of global environmental degradation, the speed and intensity of reform will be increased.

II. OPPORTUNITIES AND CHALLENGES CHINA ENCOUNTERS IN PARTICIPATION IN GLOBAL ENVIRONMENTAL GOVERNANCE

Under the circumstance of increasing economic interdependence and environmental inter-influence between China and other countries of the world, as well as in the tendency of intensifying efforts in global environmental governance, China is sure to encounter great opportunities and challenges in its participation in global environmental governance.

1. Opportunities

First, the rapid advance of the reform of global environmental governance provides a good opportunity for China to enhance its voice and influence and to take part in the making of the relevant rules.

Major reform of the UN Program on Global Environmental Governance began at 2012 Rio 20+ Conference. Based on a comprehensive assessment of the environmental deterioration the world is facing, the meeting proposed to reform the United Nations Environment Program,³⁸ to construct the global environmental governance system under the leadership of the United Nations Environment Program. Then the 2013 UN General Assembly Resolution (A/RES/67/251) decided to rename the United Nations Environment Program Council to the United Nations Environment Assembly (UNEA) (still affiliated to United Nations Environment Program), and to enlarge the original membership of 58 countries to a universal membership which includes all UN member countries. In June 2014, The UN Environment Assembly held its first meeting. Its aim was to discuss and identify a set of goals and targets, and promote the realization of the UN Millennium Development Goals.³⁹ This series of major operations showed great determination of the UN in global environment governance reform.

In view that the global environmental degradation has affected other aspects of human development, the international community has paid unprecedented attention to environmental governance. The concept of “sustainable development” as well as specific initiatives to develop a green economy linking global environmental governance with economic and social development in that the global environmental governance will exert a direct impact on the future structure of global economy and politics. China’s active participation, especially in the establishment of environmental governance mechanism, is of vital significance for its role in the future world order and for seeking more equal rights and interests for the developing countries. Therefore, the reform of UN global environmental governance provides an excellent opportunity for China to participate in global environmental affairs and to enhance

her influence in global environmental governance.

Second, adjustment of China's domestic environmental strategy and policy provides great dynamics for its participation in global environmental governance.

In recent years, the Chinese government has made the environment an unprecedented priority of its work, as manifested in the strategic importance attached to environmental topics and the implementation of environment protection measures.

International cooperation in environmental protection has been elevated to the level of national strategy. In October 2007, the 17th National Congress of the Communist Party of China (CPC) made international cooperation in environmental protection an important part of the road of peaceful development of the country for the first time, placing it on a par with other major strategies, such as those in relation to politics, economy, diplomacy, culture and security, signaling that the international cooperation in relation to environment had become a core point of the national environmental protection strategy.⁴⁰ In November 2012, the 18th National Congress of the CPC decided to comprehensively promote the economic, political, cultural, social and ecological progress as a five-in-one overall layout, aiming at realizing the strategic goal of "building a beautiful China."⁴¹ It is this Congress that, for the first time, incorporated ecological progress into the overall cause of socialism with Chinese characteristics, thus further highlighting the position of ecological progress and providing a strategic orientation and impetus to China's participation in international environmental cooperation and global environmental governance.

From the perspective of national policy and planning, the 12th Five-Year Plan on environmental protection made the following deployment for international environmental cooperation: "To strengthen environmental cooperation with other countries and international organizations; to actively introduce foreign advanced environmental protection ideas, management, pollution control

UN reform provides an excellent opportunity for China to enhance its influence in global environmental governance.

technology and capital, to publicize China's environmental protection policy and its progress; to increase financial investment from the central government for compliance work and explore a funding mechanism for compliance that combines international resources and other financial resources; to take an active part in environment and trade negotiations, and the drafting of related rules, and strengthen the coordination between environment and trade and safeguard China's environmental interests."⁴² The plan put forward specific requirements for China's international cooperation in regard of content, financial assistance and technical support, and made explicit arrangement for the implementation of relevant work.

Third, China has got many benefits and accumulated much experience from her participation in international environmental cooperation, which helps boost its confidence in more involvement in global environmental governance in the future.

For many years, China has participated in international environmental cooperation by upholding the policy of "promoting domestic environment improvement with external resources,"⁴³ (meaning foreign financial, technical and managerial expertise, etc.) obtained by way of involvement in global environmental improvement. Due to its dependence on international resources, China boasts a higher degree of participation and made more effective efforts in areas of environmental governance, usually areas for which more aid funds can be obtained from the international community and that the developed countries prioritize, such as protection of the ozone layer, conservation of biodiversity, and control of persistent organic pollutants. China has achieved much in the implementation of multilateral environmental conventions and agreements in these fields, mainly in the aspects of funds, technology and capacity building.

Funds: Since 1991, China has received US\$1.021 billion of funds from the Global Environment Facility, accounting for around 8% of total GEF grant. Among 183 countries who had jointly applied for the Global Environment Facility, the amount of funds China has got is quite outstanding — China's capital import in the areas of biodiversity, climate change, international waters, and persistent

organic pollutants account for a considerable part, and in the area of biodiversity China even has got more than half of the total aid funds.⁴⁴

Technological upgrading: China has achieved much in technological upgrading by way of environmental technology transfer and related capacity-building activities, with support from multilateral environmental mechanisms. For example, during the implementation of the Montreal Protocol, the refrigerator manufacturers in China began to implement the Multilateral Fund projects since the early 1990s. Consequently, more than 13 industries have obtained alternative technology transfer and application aids, and 53 enterprises have received financial assistance for fluorine-free transformation technology. Through transformation, the technological level of these enterprises have significantly improved, and China's refrigerator exports have increased steadily. Some of the substitute exports with higher prices and advanced technology have exceeded the amounts for domestic use.⁴⁵

Capacity building: After the release of the 12th Five-Year Plan, China took international environmental cooperation as an important platform for rapidly improving its overall ability of domestic environmental protection,⁴⁶ reaping rapid progress in fulfilling multilateral environmental conventions and agreements in major areas. Take the implementation of the Stockholm Convention on Persistent Organic Pollutants for example. China, from the top down, learned international experience in building up its system of laws and regulations related to the control of persistent organic pollutants. Institutions specializing in negotiations and compliance of multilateral international conventions China has established over the years have accumulated much experience through participation in negotiations on relevant multilateral environmental conventions and agreements, thus becoming an important source for professionals needed in environmental diplomacy and environmental management. Through various activities, these domestic institutions have played an important role in spreading internationally advanced environmental concepts and experience, promoting the localization of international experience in

environmental protection and improving domestic public awareness regarding the environment.

In general, China and the international community have achieved positive interaction in cooperation in the area of environmental protection, boosting its confidence in its future participation in global environmental governance.

2. Challenges

First, shortage of funds for environmental protection is a long-term problem China has to face.

Investment in environmental protection is the important material guarantee for the solution of environmental problems. Since the launch of its reform and opening-up drive, China's economic growth has been rapid, making the country the world's second largest economy. China's financial capability has grown ever stronger, resulting in annual increases in its investment in environmental protection. Yet, China's status as the largest developing country has seen no fundamental change. In addition, it has been burdened by an extremely arduous task in environmental protection. Despite that the Chinese government has made great efforts to increase investment in environmental protection, the gap between needs and supply still remains huge in view of the arduous and complicated task of environmental improvement. Take China's implementation of Stockholm Convention on Persistent Organic Pollutants for example. According to assessment made of China's emission reduction responsibilities, US\$5 billion would be needed by 2015,⁴⁷ but the Global Environment Facility only earmarked US\$1 billion for China as funds for compliance of conventions and agreements signed in relation to environmental protection. In view of domestic investment for environmental protection, a research conducted by the Ministry of Environmental Protection showed that, the proportion of investment in environment protection would have, at least, 2% of the country's GDP if environmental work in the nation was to be advanced in step with its economic growth. Yet, in fact, it accounted for 1.6% at the highest throughout the 1990s.⁴⁸ Up to date, China's investment in environmental protection has remained below 2%. Wu Xiaoqing, then vice minister of

Environmental Protection, revealed in March 2014 that, in 2011 and 2012, China's total investment in environmental protection from all sources of the society was RMB602.6 billion and RMB825.3 billion, respectively, roughly accounting for 1.59% of GDP.⁴⁹ A study by the Chinese Academy of Sciences in 2013 showed that an important reason for undesirable control of environmental pollution in China was insufficient investment in environmental protection. Over the past 10 years, the country's total investment in environmental protection was roughly between RMB3,000 billion and RMB3,500 billion. In the ensuing decade, if it is desired to have environmental pollution brought under control and the environmental quality see improvement, the investment should be raised to 2-3% of the GDP, 3% at best, with the industrial pollution control investment accounting for 5-7% of the total industrial fixed asset investment. Accordingly, a total investment of roughly RMB10 trillion were needed for a period of 10 years. This calls to simultaneously increase government investment, corporate environmental investment and bank green credit for environmental protection. The task was onerous.⁵⁰ Both the global and domestic situation preordains the huge gap between the funding requirements and funds available for environmental protection. For a long period to come, China will pay close attention to its own needs for funds earmarked for environmental protection and the efficiency of use of these funds. It is surely a misjudgment that "China is not short of money for environmental protection."

Second, it has become increasingly difficult to obtain international environmental technological assistance.

The fundamental solution to the environmental problem lies in technological advancement. But, it is impossible to achieve technological advancement and breakthrough overnight. China is now vigorously encouraging scientific and technological innovation. But, there is still quite a wide margin between China and developed countries, and from its own actual needs. Take technology in relation to climate change for example. More than 60 percent of the core low-carbon technologies are in the hands of the developed countries. Besides, due to the rapid development of the Chinese economy, many developed countries have come to hold that China

has “graduated” from the developing countries, and their political will to provide technological assistance to China in this regard has been greatly dampened. China will continue to seek technological aid actively through the platform of global environmental governance, but the difficulty will increase. Environmental technological aid involves the protection of intellectual property and market interests, therefore needs to be addressed by new mechanisms for cooperation.

Third, it is urgently necessary to modernize China’s environmental governance system and capacity.

Fundamentally speaking, what a role can China play in global environmental governance depends on the quality of its own environment. The Third Plenary Session of the 18th CPC Central Committee mapped out the general goal of “improving the socialist system and promoting the modernization of the state governance system and capacity.” Against the background that the domestic economic development suffers great constraints from the resources and environment, the fundamental approach to tackling

The fundamental way to solve China’s environmental problems is to modernize its environmental governance and management capabilities.

China’s environmental problems lies undoubtedly in modernizing its state environmental governance system and capacity. This touches upon the core concepts of environmental governance, the relationship among various types of institutions, the approaches to governance and performance evaluation, to name but a few. At present, in environmental governance China has not yet got rid of the “responding” and “reacting” mode, which is devoid of preventive and systematic features. This proves to be a major constraint to China’s participation in global environmental

governance. Therefore, China’s future participation in the global environmental governance depends largely on progress it makes in the modernization of its own environmental governance system and capacity.

Fourth, China is subject to greater and greater pressure from the international community and its responsibilities as a major power.

As the impact of China's economy and environment has been obtaining an increasingly obvious regional and global attribute, the international community has placed higher and higher expectations and requirements on China in global environmental governance, which eventually turn into greater and greater pressure on China. Specifically speaking, such pressure mainly manifests itself in the following ways: (1) The room has turned greatly smaller for China to apply for external funding and even technological aid in relation to environment. In terms of the trend of the distribution of GEF (Global Environment Facility) funds, the amount geared to China has been significantly reduced. Due to the influence of the conclusion that "China has graduated from developing countries" advocated by the developed countries as well as the mentality against China's rise, it has made it increasingly difficult for China to apply for technological aid. (2) The international media has directed greater and greater attention to China's environmental problems and has made a louder and louder cry demanding China to take more effective steps to reduce emission, even coming up with so-called "Chinese environment threat theory." (3) In international environmental cooperation, some developed countries ask China to fund other developing countries as the developed countries do and to share similar international environmental responsibilities like them. This is so-called "Chinese environmental responsibility theory." (4) In the course when China forges ahead with the "One Belt, One Road" Initiative and the establishment of the Asian Infrastructure Investment Bank (AIIB), the environmental standards have caught great concern from the international community. This means that the room has been greatly reduced for China to transfer "pollution" in the course of exporting capital, production capacity and technology, while the developed countries have transferred huge amounts of "pollution" into China in the course of its own reform and opening up. If it has been made impossible for China to repeat the practice of the developed countries to export pollution by way of industrial relocation, it is

A balance between national development and more international responsibilities is the biggest challenge for China.

necessary for it to explore new models of international economic cooperation, and the challenges for doing this are bound to be unprecedentedly tremendous. In this context, it is the greatest challenge for China's participation in global environmental governance how to strike a reasonable balance between safeguarding its rights and interests of development and assuming more international responsibilities.

3. Countermeasures of China in Participating in Global Environmental Governance

How can China participate in global environmental governance more effectively in the future? The following are countermeasures the authors of this article offer from the two perspectives of global environmental negotiations and global environmental policies.

3.1 Global Environmental Negotiations

First, from passive response to active countermeasure

Due to the limitations in ideology, experience and professionals, in the past China tended to mainly make "passive responses" in global environmental negotiations: China was limited in the understanding and research of the topics, which made it difficult for it to make effective responses except for saying "yes" or "no," lacking usually appropriate argumentation and explanation. Work over the past two decades has brought to the fore a number of professionals with rich practical experience in the negotiations and practice of global environmental governance. Meanwhile, domestic academia in the country has kept strengthening research in relevant issues while extending support to and tracking the government negotiation process. Now, China has acquired certain ability to provide the negotiations with basic scientific support. Therefore, it is possible for China to design the mechanisms and implementation processes of environment-related international cooperation in its own interests and that of other developing countries, and take

the initiative in the process of the negotiations and even guide the direction of the negotiations.

Second, sticking to the principle of “common but differentiated responsibilities”

It is an opportunity for the developing countries to structure a fairer international order by establishing a cooperation mechanism on the basis of the multilateral environmental conventions and agreements. As the biggest developing country, China can use its growing influence in the international arena to promote the establishment and development of a fair mechanism. China's application at the earliest movement in advancing the principle of “common but differentiated responsibilities” and the successful embodiment of the principle in a number of multilateral environmental conventions and agreements are a tangible achievement in this regard. Now, the developed countries are attempting to make the developing countries assume the same environmental responsibilities as them under the pretext of their economic depression. This is very dangerous for the developing countries. Taking climate change for example. If the developing countries hastily commit to undertake the same environmental responsibilities with the developed countries before they are ready technologically and in terms of policy and mechanism, it would be tantamount to forfeiting their future clean energy market and losing their initiative to relevant resources. Adherence to the principle of “common but differentiated responsibilities” is the bottom line to maintain the fairness and justice of the international environment. Of course, sticking to the principle does not mean ossification and changelessness, but the necessity of making innovations in the mechanisms and operation. The “clean development mechanism” related to greenhouse gas emission is but a model of such innovations.

Third, responding to environmental issues in a comprehensive way and from a global perspective

Environmental problems always go along with international politics after they become transnational topics. Therefore, it is essential to take into consideration the political factors when taking part in global environmental protection actions. In global

environmental negotiations of recent years, in addition to the relations between the environment and development, discussions related to the relations between the environment and sovereignty, and the environment and security have become more and more important, indicating that international political competition in the field of environment is becoming increasingly fierce. It is necessary for China to strengthen studies on relevant issues, redefine its national interests within the global framework, and make comprehensive responses in global environmental governance from multiple perspectives, such as environment, economy, politics and national security, in order to gain initiative in global environmental negotiations and expand its influence.

Fourth, strengthening scientific and technological support to environmental negotiations

Due to the strong technicality of environmental issues, support by scientific data is crucial to the success of environmental negotiations. At present, China has made some progress in scientific follow-up studies related to global environmental negotiations, but the research work has not yet been well geared to the needs of negotiations, and its proactive and supporting role calls for further enhancement. Building up China's authority in environmental science can play a key intellectual supporting role for its participation in multilateral environmental negotiations.

Fifth, strengthening collaborative research in frontier science

In the course of development of global environmental governance, almost all the established environmental cooperation mechanisms were initiated by developed countries. Taking advantage of their high sensitivity to environmental issues and greater investment in research in frontier environmental issues, the developed countries have been able to cleverly package their own interests within the framework of global governance and make use of the United Nations and other international platforms to transform timely their ideas of governance into environmental laws and other institutionalized mechanisms, safeguarding and strengthening their own interests while holding the commanding height in morality and public opinion. Due to a lack of necessary research and preparation, the developing countries often have

to follow the pace of the developed countries in environmental governance passively. If the majority of the developing countries (including China) wish to turn from “followers” into “leaders” in global environmental governance, it is necessary for them to sharpen their sense to frontier environmental issues and enhance their research capability. The first step for China is to take advantage of the West's frontier research in environmental issues, strengthen relevant cooperation, and improve its own capacity in this regard as soon as possible.

Sixth, striving for a successful 2015 climate negotiation in Paris

2015 Paris Climate Change Conference is a major event of global environmental governance, and its result will affect future direction of global environmental governance process. As China plays an important role in the international climate negotiations, the success of the conference will be a landmark of China's recent years' active participation in global environmental governance. For sure, whether or not this objective can be achieved depends on the efforts and consensus to be made by all stakeholders.

3.2 Global Environmental Policies

First, improving effectiveness of imported ideas

Over the past dozen years and more, China, by way of participating in global environmental negotiations, has intensified efforts in importing overseas advanced experience in environmental protection and gained international assistance and support in improving laws, regulations and policies of environmental protection, promoting research and development of environmental technology and heightening the public's environmental awareness, contributing greatly to the improvement of the country's environmental governance, updating relevant technology concepts and the country's integration into the main stream of global environmental protection. But, judging by China's past practice in honoring international environmental conventions and agreements, it paid too much attention to foreign experience and too much emphasis on studying and imitating other countries at the cost of weakening its digestion and absorption of the experience, thus

making its compliance practice short of summing up of experience applicable to local practice and its compliance activity less successful in producing a demonstrative effect. Therefore, in China's future compliance practice of multilateral environmental conventions and agreements, priority should be given to the "localization of advanced experience," and greater efforts should be made to study the differences between the domestic and foreign situations and how to modify foreign experience to correctly guide domestic environmental practice.

Second, establishing China's role as a bridge in North-South environmental cooperation

Compared with other developing countries, China indeed has benefited much more from global environmental governance cooperation in terms of fund, technology and management expertise. The UN and other multilateral institutions have intentionally controlled the total amount of aid to China under the pretext of balancing the allocation of aid resources. However, China surely needs external resources to improve its environmental protection situation and capability. In the current changed international and domestic context, it is necessary for China to redefine its strategy of participation to ensure the possibility for it get the external resources.

China has gained quite rich experience in global environmental governance cooperation over the years and has acquired certain ability to help those more backward developing countries. China's experience gained from its participation in global environmental governance as a developing country is of typical exemplar significance to other developing countries. Providing assistance to other developing countries in a planned way is also in line with the UN "seed" principle of aid by multiplying the effects of preliminary practice. Hence, defining China's position as a bridge in North-South environmental cooperation complies to the reality China's environmental governance capacity is somewhat above that of most developing countries but generally lower than that of the developed countries, while ensuring the efficient use of international aid resources and the continuity of the effectiveness of such aid resources.

Third, making overall plans for use of international aid resources

At present, for developing countries participating in global environmental governance, the fund needed come mainly from international multilateral aid. Yet, compared with the mission of improving global environment, the amount of such multilateral aid fund is far from enough. While taking an active part in multilateral environmental cooperation, China is also very active in bilateral environmental cooperation, with many areas of bilateral environmental cooperation overlapping those of multilateral cooperation. To make full use of these valuable resources, it is necessary to make overall coordination for the use of funds got from different channels and undertake the same sort of projects/programs time and again. As such overall planning and coordination is bound to touch on different governmental departments in control over the funds, top-level designing is absolutely necessary for governments at the high level to coordinate the work of areas where the funds are to be invested, so as to improve the efficiency of the international aid resources.

Fourth, vigorously training professionals in global environmental governance

The training of professional workers is an old topic. Yet, it is a process of constantly adjusting and enhancing understanding in practice how to train professional workers. In the course of its participation in global environmental governance, China has gone from the initial stage of import and exploration to one of in-depth practice. Thus, in terms of the training of professionals it is necessary to combine the sense of internationalization with that of localization. In the compliance practice of multilateral environmental conventions and agreements, besides the usual emphasis given to the international sense on the part of the professionals to be trained (the sense of global citizenship, foreign language capability, negotiating ability in foreign languages, and accumulation of knowledge and experience in such as environmental technology), it is also necessary to, intentionally, enhance their sense of localization (Chinese culture and tradition, characteristics of China's modernization drive, practical experience

in domestic environment protection). Only those who has the sense of both internationality and localization can fulfill the obligation of expanding China's room in global environmental governance and give scope to China's influence concerning environmental issues as a responsible major power.

Finally, it must be stressed that "the anvil itself must be hard for the forging." It is the best way for China to participate in global environmental governance to solve its own environmental problems well and make great ecological progress.

1 Global Environmental Facility (GEF), established in October 1991, is an international cooperative institution comprising 183 countries and regions. Fund mainly comes from developed countries. Beneficiaries are mainly developing countries and countries in economic transition. Its purpose is to coordinate international organizations, social groups and private sectors to solve global environmental problems. Since 1991, GEF has granted US\$12.5 billion to 165 countries' 3,690 projects and helped raise US\$58 billion in co-financing. In the past two decades, these grants have supported various environment protection activities in such areas as biodiversity, climate change, international waters, land deterioration, chemicals and waste. The website is: www.thegef.org.

2 See Ops5 Fifth Overall Performance Study of the Geffirst Report: Cumulative Evidence on

the Challenging Pathways to Impact, available at: <http://www.thegef.org/gef/OPS5>, April 10, 2015.

3 American Chemistry Council (ACC) is a non-profit headquartered in Washington, D.C., the United States. It is mainly involved in chemistry industry. Every year, this organization spends tens of millions US dollars on safety study of chemicals. In addition, this organization also attends various conferences or activities, which have world influence, to advertise the concept of using chemicals safely. See: <https://www.americanchemistry.com/>.

4 Bromine Science and Environmental Forum (BSEF) was an international bromine industrial organization, established in the 1990s. It strives to provide scientific knowledge about bromine. This organization has been very influential in relevant areas through collecting professional knowledge and organizing scientific and policy exchange. See: <http://www.bsef.com/>.

5 The Nature Conservancy (TNC) is one of the world's largest non-profit environment protection organizations, established in 1951. It is committed to protecting land and waters with important ecological value. Its objectives are: to maintain the natural environment and to improve human welfare. See: <http://tnc.org.cn/>.

6 For records of conferences and reports, see the website of Stockholm Convention on Persistent Organic Pollutants, available at: <http://chm.pops.int/TheConvention/ConferenceoftheParties/Meetings/COP7/tabid/4251/mctl/ViewDetails/EventModID/870/EventID/543/xmid/13075/Default.aspx>, April 10, 2015.

7 See the website of United Nations Framework Convention on Climate Change, Cumulative admissions of observer organizations COP 1-20, November 17, 2014, available at: http://unfccc.int/parties_and_observers/ngo/items/3667.php#Statistics, April 10, 2015.

8 IGO stands for intergovernmental organizations. Its member states are all sovereign states. Representative IGOs include the United Nations, European Union and ASEAN.

9 See: <http://www.thegef.org/PPP>, April 10, 2015.

10 See: <http://chm.pops.int/Implementation/DDT/Meetings/2ndGlobalAllianceAssembly2013/tabid/3853/Default.aspx>, April 10, 2015.

11 Naoko Ishii, "Time for Transformational Change: The Role of the GEF," Washington: Global Environmental Facility, August 16, 2014, available at: <http://www.thegef.org/gef/pubs/time-transformational-change>, April 10, 2015.

12 Xiao Guangrui, "APE-Platform, PPP-Singer," *China Economic Weekly*, November 6, 2014.

13 United Nations Department of Economic and Social Affairs, *World Urbanization Prospects (The 2014 Revision): Percentage of Population at Mid-Year Residing in Urban Areas by Major Area, Region and Country, 1950-2050*, CD-ROM Edition, New York: United Nations, 2014.

14 UNEP, *Climate Finance for Cities and Buildings — A Handbook for Local Governments*, UNEP Division of Technology, Paris: Industry and Economics (DTIE), 2014, p. 4.

15 *Ibid.*, p. 59.

16 Michele M. Betsill and Harriet Bulkeley, "Cities and the Multilevel Governance of Global Climate Change," *Global Governance*, No. 2006 12, p. 142.

17 Li Xilei, "Crossing-border Urban Climate Networks in Global Climate Governance – C4," *Social Science*, Vol. 6, 2011, p. 40.

18 Hakelberg Lukas, "Governance by Diffusion: Transnational Municipal Networks and the Spread of Local Climate Strategies in Europe," *Global Environmental Politics*, No. 2, 2014, pp. 107-129.

19 Carmin, J., N. Nadkarni and C. Rhie, 2012: *Progress and Challenges in Urban Climate Adaptation Planning: Results of a Global Survey*, Cambridge: Massachusetts Institute of Technology, 2012, p. 30. Citing from IPCC Group II, *Climate Change 2014 Impacts, Adaptation, and Vulnerability*, Cambridge: Cambridge University Press, 2014, p. 734.

20 Marco Keiner and Arley Kim, "Transnational City Networks for Sustainability," *European Planning Studies*, Vol. 15, No. 10, 2007, pp. 1369-1395.

21 International Council for Local Environmental Initiatives (ICLEI) is a local intergovernmental organization, established in New York in 1990s. It was launched by 200 local governments and its objective is to promote sustainable development. At present, its members consist of 81 countries and more than 800 local governments. To support its members for implementing sustainable development, this organization provides consulting service and training. See: <https://iclei.org/>.

22 See: <http://c40.org/>, April 10, 2015.

23 GEF Independent Assessment Office, "Summary Report of GEF's Fifth Total Performance Research: The Key Decision to Improve GEF's Influence," Washington D.C., GEF Independent Assessment Office, 2014, p. 8.

24 United Nations, A/RES/66/288: The Future We Want, Geneva: United Nations, 2012, p. 18.

25 Review of the Synergies Arrangements Compilation of Responses Received from Parties to the Secretariat and to the UNEP and FAO Questionnaire, available at: <http://synergies.pops.int/Implementation/ReviewofArrangements/tabid/2620/language/en-US/Default.aspx>, April 10, 2015.

26 *Ibid.*

27 GEF Independent Assessment Office, "Summary Report of GEF's Fifth Total Performance Research: The Key Decision to Improve GEF's Influence," Washington D.C., GEF Independent Assessment Office, 2014, p. 8.

28 See "The Effect and Influence of the 'Basic Four' in Climate Change Negotiations," *People's Daily*, September 15, 2014, available at: <http://world.people.com.cn/n/2014/0915/c187656-25663802.html>, April 10, 2015.

29 United Nations, A/RES/66/288: The Future We Want, Geneva: United Nations, 2012, p. 3.

30 Zhang Haibin, "Knowledge from Paper Is Not Enough, Practice Is Essential: Thoughts after My Participating in UN First Environment Assembly with the Chinese Delegation," *International Politics Quarterly*, Issue 6, 2014.

31 World Economic Forum, *Outlook on the Global Agenda 2015*, Geneva: World Economic Forum, 2014, p. 4.

32 *Ibid.* p. 7.

33 UNEP Division of Environmental Law and Conventions, *Auditing the Implementation of Multilateral Environmental Agreements (MEAs): A Primer for Auditors*. Nairobi: UNON Publishing Services Section, 2014, pp. 25-34.

34 See: www.cbd.int/cop/, April 10, 2015.

35 See: http://ozone.unep.org/new_site/en/index.php, April 10, 2015.

36 See: <http://chm.pops.int/TheConvention/ConferenceoftheParties/OverviewandMandate/tabid/578/Default.aspx>, April 10, 2015.

37 UNEP, *Measuring Progress: Environmental Goals & Gaps*, Nairobi: UNEP, June 2012, p. 30.

38 See: <http://www.un.org/en/sustainablefuture/index.shtml>, April 10, 2015.

39 See: <http://www.un.org/en/sustainablefuture/index.shtml>, April 10, 2015.

40 Hu Jintao, "Hold High the Great Banner of Socialism with Chinese Characteristics and Win New Victories in Building a Moderately Prosperous Society in All Respects – Report at the Seventeenth National Congress of the Communist Party of China," *People's Daily*, October 25, 2007.

41 Hu Jintao, "Report at the 18th National Congress of the Communist Party of China," available at: <http://cpc.people.com.cn/n/2012/1118/c64094-19612151.html>, April 10, 2015.

42 "National Twelfth Five-Year Plan of Environmental Protection," the Ministry of Environmental Protection, available at: http://www.mep.gov.cn/gkml/hbb/bgth/201212/t20121205_243258.htm, April 10, 2015.

43 See: <http://www.mep.gov.cn/zwgk/hjgh/>, April 10, 2015.

44 According to the GEF website statistics, available at: http://www.thegef.org/gef/country_profile/CN?countryCode=CN&op=Browse&form_build_id=form-d2153d07e92837fa7450a5882ec8013a&form_id=selectcountry_form#, April 10, 2015.

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45 Refer to the official website of Chinese implementation of “the Montreal Protocol,” <http://www.ozone.org.cn/>, April 10, 2015.

46 “National Twelfth Five-Year Plan of Environmental Protection,” available at: http://gcs.mep.gov.cn/hjgh/shierwu/201210/t20121029_240586.htm, April 10, 2015.

47 “People’s Republic of China to Fulfill National Implementation Plan on Stockholm Convention on Persistent Organic Polluants,” available at: <http://www.china-pops.org/guide/popskt/200807/P020121210421015511833.pdf>, April 29, 2015.

48 “Qu Geping: Environmental Protection Investment-GDP Ratio Should Be More Than 2%,” *China Times*, June 5, 2014.

49 “Wu Xiaoqing: 2014 Financial Saving and Environmental Protection Will Be a Big Increase in Investment,” China Website, available at: http://news.china.com.cn/2014lianghui/2014-03/08/content_31718552.htm, May 1, 2015.

50 “Wang Yi from the Chinese Academy of Sciences: Environmental Protection Investment-GDP Ratio Should Be Increased to 3% As Soon As Possible,” Xinhua News Agency website, available at: http://news.xinhuanet.com/energy/2013-04/15/c_124580875.htm, May 1, 2015.