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**The World Conservation Union's (IUCN) Strategy
For a Programme of Work in
The People's Republic of China**

2009-2012

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Acronyms

BBC	British Broadcasting Corporation
CCICED	China Council for International Cooperation on Environment and Development
CDM	Clean Development Mechanism
DEFRA	United Kingdom Department of Environment, Food and Rural Affairs
DFID	United Kingdom Department for International Development
DGCS	Italian Directorate General for Development Cooperation
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organisation of the United Nations
FLEG	Forest Law Enforcement and Governance
FLR	Forest Landscape Restoration
GDP	Gross Domestic Product
GM	Genetically Modified
GMO	Genetically Modified Organism
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
HIV	Human Immunodeficiency Virus
IRBM	Integrated River Basin Management
IUCN	World Conservation Union
LLS	Landscapes and Livelihoods Strategy (an IUCN leverage initiative)
MDG	Millennium Development Goal(s)
MOC	China Ministry of Construction
OECD	Organisation for Economic Co-operation and Development
PES	Payments for Ecosystem Services
SEPA	China State Environmental Protection Administration
SFA	China State Forestry Administration
TCM	Traditional Chinese Medicine
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNICEF	United Nations Children's Fund
USDA	United States Department of Agriculture
WB	World Bank
WHO	World Health Organisation
WTO	World Trade Organisation
WWF	World Wide Fund for Nature

1. Introduction

1.1 China, Sustainable Development and the Environment

China, the world's most populous country, represents both the biggest opportunities and greatest challenges for sustainable development and for mainstreaming the environment into development plans. Recent sustained growth in GDP indicates a nation that is leapfrogging into the 21st century in terms of technology and the economy. However, the 2005 Environmental Sustainability Index ranked China 133rd out of 146 countries. The Chinese government and World Bank analysis suggest that if inequality and sustainability issues are not addressed, economic growth could falter.¹

1.2 IUCN in China

The World Conservation Union (IUCN) has a long history of involvement in China, with pioneering work originally being done through IUCN Headquarters and the IUCN Commissions in the early 1980s. In recent years, IUCN has been involved in conservation work in China relating to species assessments, protected area management and World Heritage, environmental law and environmental economics.

IUCN has ten members in China, including three in Hong Kong, and more Chinese organizations have expressed interest in joining the Union. In 1996, China became a State member of IUCN, represented by the Ministry of Foreign Affairs. Since that time the IUCN Secretariat has been engaged in developing a programme in China. In 2000, a Memorandum of Understanding was signed by IUCN and the State Environmental Protection Administration (SEPA) of China to carry out a cooperation programme from 2001 to 2004. The IUCN China Liaison Office was established in January 2003, a Memorandum of Understanding was signed with the State Forestry Administration (SFA) of China in 2004, and a formal agreement between IUCN and the People's Republic of China is being pursued.

1.3 IUCN's Strategy for China (2009-2012)

This document is the result of extensive consultation with IUCN members, IUCN commissions, partners and resource persons. It includes a situation analysis that considers trends in environment and development in China, and analyses the importance and urgency of engaging China in the global sustainable development process. This document should be considered in concert with IUCN's Programme 2009-2012 and the situation analysis prepared for that Programme.

The strategy is intended as longer term guidance for programme development and implementation while also providing a sound foundation from which to develop a series of four-year IUCN programmes for China. The China country strategy includes a draft intersessional 2009-2012 China programme framework, which is situated within a larger global and regional IUCN Programme.

¹ UK Department for International Development, March 2006: *China: Country Assistance Plan 2006-2011*, (p 4).

2. The State of Biodiversity and Human Well-being in China

2.1 Species

China is considered one of the megadiverse countries² both by virtue of the sheer numbers of taxa found there and by the number of endemic species represented. China supports nearly 15% of the world's mammals, 14% of the birds, 18% of the fishes, and 12% of the vascular plants. However, this natural capital is under threat. The global IUCN Red List of Threatened Species (2006) included 2,950 species that are found in China, of which 804 are considered Threatened (classified as Vulnerable, Endangered or Critically Endangered).

The China Species Red List (2004) includes evaluations of 10,211 species, of which the percentage of threatened species is surprisingly high.

Table 1. Threatened Species in China

Taxa	% Threatened Species/Evaluated Species in China Red List	% Threatened Species/Evaluated Species in Global Red List
Mammals	-	23
Birds	7.4	12
Reptiles	28	51
Fish	-	40
Amphibians	40	31
Invertebrates	34	53
Plants	-	70
Plants – gymnosperms	69	34

2.2 Ecosystems

Forests

From the tropical forests of southwestern Yunnan province to temperate forests that rank among the most biologically diverse in the world, China is home to a wide range of globally important forest ecosystems.³ Natural forests cover only about 17% of China's territory, and are concentrated in the northeast and southwest of the country but are sparsely distributed elsewhere.⁴

Despite government policy and ongoing efforts, China's limited forest resources continue to face substantial threats from air and water pollution, non-sustainable logging, falling water tables, and clearing of forests for agricultural and other uses. In addition, the rapid expansion of China's timber-dependent industries has led to a demand for wood that is now largely being met – often through

² Mittermeier, Russell A. and Mittermeier Eds., 1997: *Megadiversity: Earth's Biologically Wealthiest Nations*.

³ Source: WWF China < <http://www.wwfchina.org/english/loca.php?loca=92> >

⁴ World Resources Institute: *Earthtrends: The Environmental Information Portal*. "Forests, Grasslands and Drylands: Country Profile – China." < <http://earthtrends.wri.org/text/forests-grasslands-drylands/country-profile-38.html> >

illegal trade – by Southeast Asia, Russia, Brazil and Africa. China is now the world's second largest importer of forest products after the United States.⁵

Marine

China's four seas – the internal Bohai Sea, the Yellow Sea, the East China Sea, and the South China Sea – span a wide latitudinal range and are home to a correspondingly great abundance of biological diversity. China's 200 species of reef coral, for example, account for a third of the world's total.⁶ Today, China's marine ecosystems are threatened by all the main direct drivers of biodiversity loss: habitat degradation, climate change, overexploitation, invasive species and pollution. According to the World Bank, virtually all of China's coastal seas are moderately to highly polluted.⁷ Increasing development pressure on China's 18,000 km of continental coastline contributes to marine environmental problems; an overall decline in the ecological quality of coastal lands corresponds with a decline in their effectiveness as a buffer protecting the marine environment from land-based activities. As marine industries grow in importance to the domestic economy, the fishing industry must contend with overfishing and other destructive fishing practices.⁸ Climate change is another major issue for China's seas and coastal lands: the State Oceanic Administration in January 2007 issued a report on the erosion being suffered by coastal cities due to rapid sea-level rise resulting from global warming. Consistent with recent reports of the Intergovernmental Panel on Climate Change, it predicts a further rapid rise in sea level, with expensive consequences.

Grasslands

China's vast natural grasslands, stretching across the north and west of the country, cover an area of about 400 million hectares. They represent a diverse range of habitats, from the steppes of the Inner Mongolia Autonomous Region to the alpine meadows of Tibet. Unfortunately, China's grasslands are undergoing severe desertification and deterioration. While grassland degradation is often blamed on ethnic minority pastoralists, the actual causes relate more to inappropriate policies of the collectivisation era, which encouraged the conversion of fragile grasslands to agriculture, the sedentarisation of herders and the more recent privatisation of once communal rangelands.⁹

Freshwater ecosystems

Seven of the most important rivers in the world begin in the highlands of western China. The Yellow River, Yangtze River, Lancang Jiang (Mekong) and the Salween rise to the east of the Qinghai-Tibet plateau. The Indus, Ganges and Brahmaputra rise in the south. These rivers are home to endemic biodiversity that is often severely stressed¹⁰ – and they also provide services such as irrigation and drinking water for over two billion people in China, India, Pakistan, Bangladesh and throughout Southeast Asia. Meanwhile, some of China's largest lakes, especially Dongtinghu and Poyanghu, are home to important species such as Siberian cranes. Chinese freshwater systems are under threat from pollution, dams and invasive alien species.

⁵ White, Andy et al., 2006: *China and the Global Market for Forest Products; Transforming Trade to Benefit Forests and Livelihoods*. Forest Trends.

⁶ UNEP/GPA, 2006: *The State of the Marine Environment: Regional assessments*. UNEP/GPA, The Hague.

⁷ The World Bank, 2001: *China: Air, Land, and Water – environmental priorities for a new millennium*. Washington, DC USA, (p 75).

⁸ UNEP/GPA.

⁹ Williams, Dee Mack. 1996. *Subjective landscapes and resource management on the Chinese grasslands of Inner Mongolia*. Ph.D Dissertation, Columbia University.

¹⁰ The baiji or Yangzi river dolphin, which was recently declared functionally extinct, was one popular flagship species.

2.3 Ecosystem Services

As part of the Millennium Ecosystem Assessment, and in the context of China's decision to prioritise development of the western region of the country, a sub-global assessment of western China was undertaken between 2002 and 2004¹¹. The findings included an increase in potential farmland productivity that was closely related to the increase in land area under cultivation. Yet the report also noted that grasslands were severely degraded and grass yields had been reduced by one third in the past 20 years. Driving forces for the changes included population increases, climate change, conversion of grassland and forests for cultivation.

2.4 Human Well-Being

Human well-being is improving for millions of Chinese, who are now eating more meat, driving cars, and entering the global consumer economy. But with over 20 percent of the world's population, China has only about 9 percent of global arable land¹². Land and water are already major constraints to agricultural production, and harvests have been falling at a slow but steady pace since 1998. Some of the best agricultural land in the southeast is being converted to various industries. The major gains that have been achieved in human well being over the past decades will face significant constraints in the future due to loss of agricultural land, climate change, pollution, water shortages and growing inequality.

Poverty and inequity

Since 1979, China's rapid economic growth has resulted in unprecedented progress in reducing poverty and improving lives. Over 450 million people have been lifted above the US\$1 per day international poverty line. In 2004, annual per capita income reached about US\$1,500.¹³ And though there are sharp variances in their levels of development, none of China's 31 provinces, autonomous regions or municipalities belong to the UNDP's "low human development" category. However, poverty is still a major challenge for China. The World Bank estimates that 135 million Chinese citizens were still living below the international poverty line at the end of 2004, and some 500 million were living on under US\$2 a day.

China's growing wealth is distributed very unevenly. The eastern coastal regions and cities have benefited disproportionately from economic growth. Today the income gaps between urban and rural populations, and between the increasingly developed east and the less developed west are vast and growing. For instance, the average per capita income in western provinces is less than a third of that in some coastal areas. Ethnic minority populations, too, suffer disproportionately from poverty. Though China's minority groups make up only about 8% of the population, they account for 40% of the chronic poor.¹⁴ There are concerns that increasing inequality may pose a threat to social stability, and in 2005 demonstrations against the Government numbered over 87,000 (58% more than two years earlier) (Li, 2006). These disparities also lead to substantial internal migration, with between 120 and 175 million peasants have headed east in search of work (Yardley, 2004).

While China has achieved a radical change in the treatment of women over the past hundred years, there is still much room for improvement in the area of gender equality. Chinese researchers and scholars outline barriers to gender equality as the feminisation of poverty; increasing inequality in the

¹¹ Millennium Ecosystem Assessment: Vol 4. Multiscale assessments. Pp 360-361

¹² Prosterman, Roy L., Tim Hanstad and Li Ping. 1996. "Can China feed itself?", *Scientific American* 275(5), p. 90.

¹³ UNDP, 2006: *Human Development Report 2006: Beyond scarcity: Power, poverty and the global water crisis*. UNDP, New York, NY USA.

¹⁴ DFID (3).

labor market; uneven gender impacts due to the marketisation of education and health care; implementation of the family planning program (which promotes an imbalanced sex ratio at birth); lower social status of women and girls; and little progress toward women's participation in political decision-making¹⁵. There is high gender segregation in China's labor market, with fewer women in white-collar jobs and gender-based wage differences growing in the context of economic reform. Women have fewer opportunities to receive education and the illiteracy rate of adult women is 2.6 times higher than adult men. Gender differences also exist in rural social assistance, where elderly men receive almost twice as much government aid per month as elderly women. In urban and rural areas, pensions are 40-52% higher for men. A 2005 UN survey identified gender equality as one of the Millennium Development Goals that was not on track for fulfillment by China¹⁶.

Food security

China supports more than one-fifth of the world's population with only 9% of its arable land. Only Egypt and Bangladesh have less arable land per capita than China¹⁷. Over the past few decades, the country has made impressive progress towards the national goal of 95% food self-sufficiency, and national policy has led to a dramatic rise in domestic food production. In recent years, China has also made great strides in combating undernourishment, which was down to 9% in 1998-2000 in contrast to 30% in 1979-1981.¹⁸ However, household food security is still a major problem for many in China, particularly the poor in remote areas of the west, and recent migrants from rural to urban areas. In the wake of out-migration by men, rural women shoulder the majority of agricultural work, yet they lack access to and control over productive resources such as land, credit, technology, information, and training. This is compounded by the lack of legal protections for women to contract lands and other resources, as well as discrimination against women in transferring land from one generation to the next¹⁹.

Despite China's progress towards self-sufficiency, national food security is now coming under threat, particularly from environmental constraints. The rapid growth of China's urban population and China's entry into the World Trade Organisation have led to accelerated change in the agricultural sector, necessitating major adjustments to agricultural policy. The need for policy change is also driven by China's shrinking arable lands. Over the past decade, China has lost 8 million hectares, or nearly 7% of its arable land, mostly to construction in the more developed east of the country but somewhat balanced by restoration of degraded land in the west.²⁰ Remaining farmland suffers from deterioration due to soil erosion, pollution, and desertification. In addition, climate change poses problems for China's agricultural sector. In 2006, the prolonged drought in western and northern China that led to food shortages in several provinces indicated the risks posed by climate change.

China also faces a tremendous challenge in improving the quality and safety of its agricultural products and reducing the environmental impact of its agricultural sector. Chinese farmers rely heavily

¹⁵ World Bank, East Asia Environment & Social Development Unit, June 2002. *China: Country Gender Review*. <<http://www.worldbank.org.cn/English/content/gender-en.pdf>>

¹⁶ UNDP and China Development Research Foundation, 2005. "China Human Development Report 2005: Towards Human Development with Equity" <http://hdr.undp.org/docs/reports/national/CPR_China/China_2005_en.pdf>

¹⁷ Smil, V. 2004. *China's Past: China's Future: Energy, Food, Environment*. Rutledge, New York.

¹⁸ Overseas Development Institute, December 2003: *Food Security and the Millennium Development Goal on Hunger in Asia*. Overseas Development Institute, London, UK. (See Annex 4: China Case Study by Edward Anderson).

¹⁹ FAO, 1998. *Women and Food Security: Overview and Situation in China*. <<http://www.fao.org/sd/wpdirect/wpan0022.htm>>

²⁰ Liu, Yingling, Apr. 18 2006: *Shrinking Arable Lands Jeopardising China's Food Security*. Worldwatch Institute. <<http://www.worldwatch.org/node/3912>>

on chemicals, toxic pesticides, and antibiotics, often misusing them, and currently China has one of the world's highest rates of chemical fertiliser use per hectare.²¹ Today, food safety is a major concern not only for Chinese consumers, but also for those involved in the agricultural export business. The central government is now prioritising food safety, and in 2006 it adopted a national framework for building a system to ensure the monitoring and safety of agricultural products. But systemic constraints to standardising and monitoring are substantial. Small-scale household farms dominate the rural sector, farmers do not own their land, and agricultural extension programs are weak. In 2005, only about 7% of the volume of agricultural production for domestic consumption met nationally established standards, which are not as stringent as many of the standards that must be met by exports.²²

One response has been major government investment in biotechnology, including genetic modification. By some accounts, China has released more species of GMOs than any country in the world.

Freshwater supply

China's annual per capita available water is only 2220 cubic meters, about a quarter of the world average. Despite rapid progress in the 1990s, in 2000 only two-thirds of China's rural population had access to a sustainable source of safe water.²³ In 2007, northwestern China continued to suffer from a prolonged drought that left 300,000 people short of drinking water; officials have linked the drought to warming weather caused by climate change.²⁴ Water is therefore an issue of critical importance to the Chinese government, leading it to formulate its "Water Agenda 21" in 1998.

China, at least in some parts of its dry northern regions, faces an impending water crisis. Freshwater availability and quality have been negatively affected by China's rapid economic development and by global climate change. Fast-paced economic growth has spurred increased demand for water; between 1980 and 1993, industrial water consumption doubled and urban water consumption increased by 350%.²⁵ As demand has grown, water pollution has risen, and China has suffered from problems with water shortages, flood and drought damages, and falling groundwater tables. The chemical and biological quality of China's water resources is generally poor, and the World Health Organisation predicts that over the next decade groundwater quality in many regions will deteriorate as municipal wastewater disposal needs and industrial and agricultural emissions grow. Already much of the water in five of China's seven major rivers is so polluted that it is dangerous to people (*Economy*, 2004).

Health

Over the past fifty years, China's population has increasingly enjoyed longer, healthier lives. Average life expectancy in 2004 was 72²⁶, as contrasted with 35 in 1952²⁷. Infant and child mortality are on the decline.²⁸ At the same time, China's rapid development is also a source of new environmental health

²¹ Calvin, Linda et al., Nov. 2006: *Food Safety Improvements Underway in China*. USDA Economic Research Service, Amber Waves. <<http://www.ers.usda.gov/AmberWaves/November06/Features/FoodSafety.htm>>

²² *ibid.*

²³ United Nations Health Partners Group in China, July 2005: *A Health Situation Assessment of the People's Republic of China*. Beijing, China.

²⁴ BBC News, Feb. 6 2007: *Climate change 'affecting' China*. <<http://news.bbc.co.uk/2/hi/asia-pacific/6334749.stm>>

²⁵ World Bank (72).

²⁶ World Health Organization, 2006: *The World Health Report 2006: working together for health*. WHO Press, Geneva, Switzerland.

²⁷ French, Howard, Jan. 14 2006: *Wealth Grows, but Health Care Withers in China*. New York Times.

²⁸ Source: UNICEF China. <<http://www.unicef.org/china/health.html>>

concerns. In 2002, sixteen of the world's 20 most polluted cities were in China.²⁹ As the number of privately owned cars skyrockets, motor vehicle emissions are worsening. Indoor air pollution from secondhand tobacco smoke and from consumption of solid fuels, particularly coal burning, is also a serious problem. Indoor air pollution from solid fuel use in China is responsible for ~420,000 premature deaths annually, and women and girls in particular face serious respiratory illnesses or death due to prolonged exposure to poor air quality from cook stoves.³⁰ Groundwater quality will decrease further during the next decade, posing water-borne health threats.

National statistics mask the tremendous health disparities between China's eastern and western provinces, and its urban and rural areas. Since the collapse of socialised medicine, emphasis on profit in the health care sector has greatly driven up costs, disproportionately harming the rural poor, ethnic minorities, migrant workers and women. The national government is actively seeking solutions to the problem of rural health care, but while today more than half of China's relatively affluent urban residents have some form of health insurance, only 10% of rural residents do.³¹ In 2000, the maternal mortality ratio in Shanghai was 9.6 per 100,000 live births, while in the Tibet Autonomous Region it was 466 per 100,000 live births.³² Gender differences exist in public health services and medical insurance, illustrated by the fact that 8% more male employees than female employees received coverage in 2000 and the male-female ratio of coverage under China's pension scheme is 3-2 throughout the country³³. Infectious diseases, including tuberculosis and hepatitis, continue to be major problems in rural areas. In addition, insufficient health care infrastructure, gaps between national level policies and local level implementation, lack of information at the local level, and dense human population living in close proximity with domestic animal reservoirs of disease organisms contribute to the possibility of an infectious disease epidemic in China. Though national HIV prevalence is low, the disease is spreading from high prevalence areas and sub-groups into the general population,³⁴ and the proportion of infected females jumped from 19.4 percent in 2000 to 27.8 percent in 2006³⁵. In recent years both Severe Acute Respiratory Syndrome (SARS) and avian influenza have appeared in China and spread globally.

2.5 China's Footprint on the Rest of the World

As the world's largest consumer of many natural resources³⁶, China has a very significant environmental footprint in Asia and beyond (see Box 1). This footprint is growing for several reasons:

- China's emerging economic power, as new markets are developing within the country and as more products from China are actively promoted to markets in other countries;

²⁹ United Nations Health Partners Group in China (22).

³⁰ Zhang and Smith, 2005. *Indoor Air Pollution from Household Fuel Combustion in China*. Rutgers University and University of California Berkeley.
<<http://www.pciaonline.org/assets/INDOOR%20AIR%20POLLUTION%20FROM%20HOUSEHOLD%20FUEL%20COMBUSTION%20IN%20CHINA.pdf>>

³¹ Forney, Matthew (in Beijing), May 12 2003: *China's Failing Health System*. TIME.

³² UNICEF China.

³³ "China Human Development Report 2005: Towards Human Development with Equity".

³⁴ United Nations Health Partners Group in China (18).

³⁵ Reuters, June 4, 2007. *HIV Infections Up Sharply Among Women in China*.
<<http://www.reuters.com/article/healthNews/idUSHKG8093520070604>>

³⁶ "Among the five basic food, energy, and industrial commodities – grain and meat, oil and coal, and steel – consumption in China has already eclipsed that of the United States in all but oil. China has opened a wide lead with grain: 382 million tons to 278 million tons for the United States last year..." from "China replacing the United States as world's leading consumer" by Lester R. Brown, Earth Policy Institute, published in *Environmental Awareness*, Vol. 28, No. 3 (114-116), 2005.

- China's own environmental rules and regulations, and the enforcement of these internal restrictions, means that many raw resources have to be imported from outside; and
- The fact that many of the natural resources within the country form part of a larger, regional landscape, with ecosystems straddling borders and natural resources being shared by neighbouring countries; China, as the economic powerhouse, is able to dictate many of the terms of sharing such resources.

China's footprint has been particularly notable in neighbouring Southeast Asia and in Africa, where growing demand for raw materials has a major impact on Southeast Asian biodiversity. In 2005, Southeast Asia was believed to be responsible for about one-quarter of the global illegal wildlife trade, with Chinese demand for exotic wildlife – on the rise with rising affluence – seen as the single most important market.³⁷ Certain rare animal species, particularly those associated with traditional Chinese medicine, are gravely threatened by this illegal trade. In addition, China's growing demand for timber has reached Southeast Asia's tropical forests (see below, Box 1 China's Footprint and Forests, for more information).

China's development of the Mekong River also has a tremendous impact on its downstream, Southeast Asian neighbors. The Mekong originates in southwestern China, where it is known as the Lancang Jiang, then flows through Myanmar, Laos, Thailand, Cambodia and Vietnam, often acting as a border between nations, until it reaches the South China Sea. About 70 million people live in the river basin, of whom some 80% depend on the river for their subsistence.³⁸ Environmental concerns stem from China's damming of the river as part of its efforts to meet energy needs and develop its western regions, and China has shown reluctance to join the Mekong River Commission (MRC), formed in 1995, which includes Cambodia, Laos, Thailand and Vietnam – despite the MRC's efforts to engage China. As of April 2006, China had completed two hydroelectric dams, with an additional two under construction and four more planned.³⁹ These dams limit the flow of silt, negatively affecting the fertility of river basin agricultural lands downstream, and affect fish habitat. Consequences for Cambodia are particularly significant, as an estimated 70% of Cambodia's protein comes from fisheries related to the Mekong.⁴⁰ In 2003-2004, the fish catch in Cambodia dropped by a startling 50% from the previous year.⁴¹ However, China has long been a source of assistance to and investment in Cambodia. For example, in April 2007 Chinese companies launched two major power projects in Cambodia, including a hydroelectric power plant, worth about US\$300 million in investments.⁴²

China's footprint in Africa has grown dramatically in recent years, as the Chinese government has focused on strengthening China-Africa ties that began as early as the 1950s. In 2000, the Forum on China-Africa Cooperation was established, ushering in a new era of Sino-African cooperation, and since 2004 Hu Jintao has been on three Africa tours. Beijing's influence is increasingly felt in Africa, with Chinese investment seen as the new driving force for economic development there.⁴³ Trade between China and Africa rose to US\$55 billion in 2006, a fivefold increase since 2001, and China-

³⁷ Lin, Jolene. 2005: *Tackling Southeast Asia's Illegal Wildlife Trade*. Singapore Year Book of International Law (pp 191-208). http://www.traffic.org/25/network9/ASEAN/SingYearbookOfIntLaw-2005-191_ASEAN_WLT.pdf

³⁸ Vaughn, Bruce (Coordinator) and Wayne M. Morrison. April 2006: *China-Southeast Asia Relations: Trends, Issues and Implications for the United States*. Congressional Research Service Report for Congress.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Xinhua (Phnom Penh), Apr. 7 2007: *Chinese companies launch 2 power projects in Cambodia*. Xinhua Online. http://news.xinhuanet.com/english/2007-04/07/content_5946934.htm

⁴³ Baldauf, Scott, Feb. 2 2007: *Hu's trip to Sudan tests China-Africa ties*. The Christian Science Monitor.

Africa trade now exceeds African trade with the European Union.⁴⁴ Much of this trade is focused on the export of African resources to China, particularly energy resources, the import of Chinese manufactured goods by African nations, and the Chinese construction of infrastructure in Africa. A third of the oil fueling China's economic development comes from Africa⁴⁵, and this percentage is likely to rise in light of the various oil exploration deals and partnerships that have been developed in recent years.

China has also established itself as a major donor and an alternative to Western aid organisations such as the World Bank. This is particularly important for regimes that have come under criticism for human rights violations, as China's aid, unlike that of OECD countries, comes with a policy of non-interference in domestic affairs. Aid is not totally without conditions – recipients are expected to support China politically, providing China with votes at the United Nations and not engaging with Taiwan – but China does not make aid conditional on the same good governance practices emphasised by the OECD, including practices that have evolved in order to make development and development projects more environmentally sustainable, such as environmental impact assessment. At the November 2006 Beijing Summit of the Forum on China-Africa Cooperation, an agreement was reached outlining a plan for strategic partnership that heavily emphasises aid as well as trade. Some aspects of this agreement include China's plans to double 2006 assistance to Africa by 2009, providing US\$10 billion in assistance⁴⁶, and US\$3 billion in preferential loans to Africa in the next three years, and to cancel much of the debt owed by heavily indebted least developed countries in Africa.

China's ecological footprint also reaches North America, especially in terms of air pollution. Sand storms carry fine particles of particulate matter to the west coast of Canada and the USA, and on some days, 25% of airborne particulates in southern California originate from China.⁴⁷

Box 1. China's Footprint and Forests

Over the course of the past decade, China has become a leading nation in terms of demand for forest products – second only to the United States in terms of value of forest product imports.⁴⁸ According to Forest Trends, from 1997-2005, imports of Chinese-manufactured wood products increased by 700-900% in markets such as the United States and the European Union.⁴⁹ With a partial domestic logging ban in place, China is unable to supply its own factories and today accounts for over half of log exports from Papua New Guinea, Myanmar and Indonesia, some 40% of log exports from Russia, and is a major destination for West African timber exports as well.⁵⁰

⁴⁴ McGreal, Chris (in Johannesburg), Jan. 31 2007: *Hu Jintao starts Africa tour with loans promise*. The Guardian.

⁴⁵ Ibid.

⁴⁶ The Associated Press (in Beijing), Jan. 29 2007: *China faces criticism as Hu starts Africa tour*. International Herald Tribune.

⁴⁷ Chea, T. 2006. China's breakneck growth has become globe's pollution problem researchers say. Oregonianonline. 30 July (accessed 18 January 2007 at <http://search.oregonlive.com/sp?aff=100&keywords=China%27s+breakneck+growth&x=25&y=0>)

⁴⁸ White et al.

⁴⁹ Ibid.

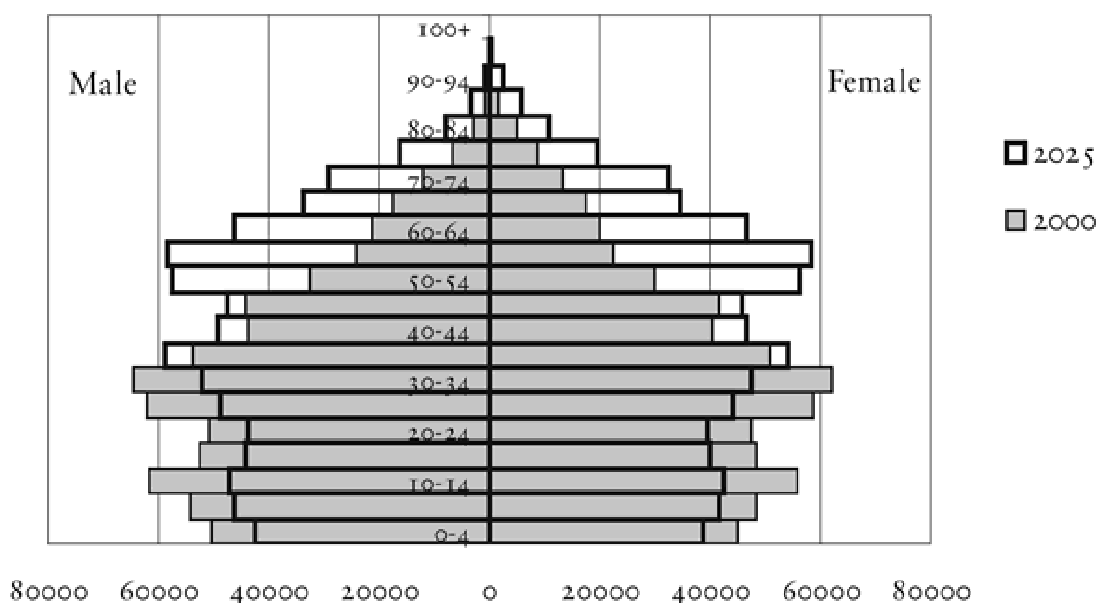
⁵⁰ Ibid.

3. Drivers of Environmental Change in China

3.1 Population Growth and Demographics

Currently, China's population is 1.3 billion, and it is projected that it will peak at 1.5 billion in 2030.⁵¹ While over a hundred ethnic groups have existed in China, the government of the People's Republic of China officially recognises a total of 56. Between 2005 and 2025, about two-thirds of China's aggregate population growth will occur in the 65+ grouping — and that cohort will likely double in size, to roughly 200 million people (see Figure 1, below). By 2025, under current UN and Census Bureau projections, China will account for less than a fifth of the world's population but almost a fourth of the world's senior citizens.⁵² Note also the disparity in gender ratio as the one-child policy has tended to favor boys; as a result, China is projected to have over 30 million more young males than females by 2025 -- a situation fraught with social implications.

Figure 1: China's population in 2000 and 2025



Source: <http://www.hoover.org/publications/policyreview/2912391.html>

Around 40% of Chinese people live in urban areas, a rate that is low in comparison to developed nations.⁵³ In order to maintain high economic growth rates and spur consumption, the Chinese government has embarked on a policy of accelerating urbanisation. Chinese cities are now growing at an unprecedented rate. Not only will this increase pressure on already strained natural resource

⁵¹ Zheng, Bijian, September/October 2005: *China's 'Peaceful Rise' to Great-Power Status*. Foreign Affairs.

⁵² Hoover Institute, 2006. <<http://www.hoover.org/publications/policyreview/2912391.html>>

⁵³ Wen, Guoming, Jan. 2005: *Cautions on China's Urbanization*. The Maureen and Mike Mansfield Foundation. <http://www.mansfieldfdn.org/pubs/pub_pdfs/wen0105_chinaurban.pdf>

supplies, but there is also concern about the need for rapid development of urban infrastructure to support growing urban populations.

3.2 Climate Change

China is a major actor in the global climate change debate. It is one of the top emitters of carbon dioxide, due especially to its reliance on coal. In 1973, China was one of the world's largest exporters of coal, but by 2004 it was importing coal in order to meet its energy needs. Also, in 2004, China consumed 290 million tons of oil but produced only 175 million tons. In 2000, China's per capita emissions were only 20% of those of the Organisation for Economic Cooperation and Development (OECD) countries, according to the head of the China Meteorological Administration.⁵⁴ In terms of volume though, China has now surpassed the United States as the world's largest emitter of carbon dioxide, according to figures released in June 2007⁵⁵.

A report issued by six Chinese Government departments in early 2007 concluded that climate change could cause large drops in agricultural output, with the production of wheat, maize, and rice dropping by as much as 37% in the coming century. China is also concerned about increasing climatic instability. The China Meteorological Administration said that 2006 had been a disastrous year for China, with typhoons, floods and droughts killing over 2700 people and causing economic losses in excess of US\$27 billion. Swift environmental changes, such as natural disasters, disproportionately impact women, resulting in more deaths among women and reinforcing traditional gender discrimination when women's limited access is multiplied due to elevated resource shortages⁵⁶.

While Beijing sees climate change as a serious problem, government representatives have nonetheless made clear that economic development remains China's top priority. China sees the developed world – with its superior technology, industrialised economies, and lengthy history of greenhouse gas polluting – as primarily responsible for addressing the problems of global warming, but is also beginning to recognise that its own interests will require a more active and positive posture in international climate negotiations.

Growing energy demands

Between 1980 and 2000, while China's annual GDP growth was nearly 10%, primary energy consumption grew by less than 5% per year. However, today energy consumption is rising rapidly – total energy consumption per capita increased more than 43% and total energy use increased by 60% between 1990 and 2003⁵⁷ – and since 2002 China's energy conservation rate has been on the decline.⁵⁸ China's energy consumption is a matter of global concern: in the last 25 years, China's percentage of global energy consumption has increased from 6% to over 13%.⁵⁹ In 2006, China expanded its power capacity by about 102 gigawatts – roughly the equivalent of the entire capacity of the United Kingdom and Thailand combined.⁶⁰ And in 2007, China overtook the United States of America as the largest greenhouse gas producer in the world. Coal is expected to remain a major energy source, by 2020 rising 61% above 2000 levels, significantly worsening air pollution problems.

⁵⁴ Dickie, Mure (in Beijing), Feb. 6 2007: *China blames the west for global warming*. The Financial Times.

⁵⁵ Netherlands Environmental Assessment Agency, June 22 2007. *Chinese CO2 emissions in perspective*.

⁵⁶ UNIFEM, 2005. UNIFEM Responds to the Tsunami Tragedy: A Report Card One Year Later.

<<http://www.unifem.org/campaigns/tsunami/index.html>>

⁵⁷ www.earthtrends.org (data for total energy consumption and total energy consumption per capita for China)

⁵⁸ Wang, Qingyi, 2006: *Energy Conservation as Security*. World Security Institute, China Security, Summer 2006, (pp 89-105).

⁵⁹ United States Department of Energy, 2006: International Total Primary Energy Consumption and Energy Intensity. Energy Information Administration.

⁶⁰ McGregor, Richard (in Beijing), Feb. 6 2007 : *China's power capacity soars*. The Financial Times.

The 11th Five-Year Plan (2006-2010) calls for the economy's energy intensity to be reduced by 20% by 2010. However, it will be difficult to reach this ambitious energy intensity reduction target in the face of China's swelling urban population. Per capita energy consumption in China's cities is more than three and a half times that in rural areas, a disparity much greater than that found in developed countries.⁶¹ In addition, the central government has been reluctant to discuss the potential for China to take on emissions limits once the present provisions of the Kyoto Protocol expire in 2012.

China's energy plans also call for increased hydroelectricity with up to 33 new dams expected to be built in Yunnan province, China's biodiversity hotspot. Little consideration is being given to countries downstream on the rivers being dammed.

3.3 Globalisation and China's Economy

During the past decade, China has emerged as a key political and economic player in Asia, and the traditional Communist Party top-down development model has been in the process of transition to a more open market economy. China's economy is one of the fastest growing in the world - an average 9.4% over the past two decades. China's share of the global economy has more than quadrupled since 1980, and in 2006 China and the United States together accounted for nearly half of global economic growth.⁶² In 2002, China overtook the USA as the primary recipient of foreign direct investment.⁶³ The Government of the People's Republic of China is aware of some of the environmental issues this has created, and is rapidly developing mechanisms to deal with these problems.

Measured on a purchasing power parity basis, last year China was the second-largest economy in the world after the United States, and it had the largest current account surplus in the world.⁶⁴ It has recently announced its intention to invest its US 1 trillion surplus internationally.

The central government's legitimacy is predicated on its ability to continue delivering the rapid economic expansion needed to reduce poverty and improve standards of living. The 11th Five-Year Plan (2006-2010), approved by the National People's Congress in March 2006, calls for an estimated 45% increase in GDP by 2010. Over the past several years, the private sector has served as the basis for China's consistent economic expansion. The OECD estimates that the aggregate productivity of private companies in China's industrial sector is nearly twice that of state-controlled enterprises, and in 2003, the private sector accounted for three-quarters of China's exports.⁶⁵ Though China's domestic private sector is growing quickly, much of the private industry in China continues to be foreign-controlled: the bulk of private sector exports in 2003 were produced by foreign-controlled enterprises.⁶⁶

Many large multinational corporations do business in China: as of late 2005, there were 101 Fortune 500 companies reported to have operations in Beijing's Central Business District.⁶⁷ Though attention

⁶¹ Wang, 2006.

⁶² Paulson, Henry M., Dec. 11 2006: *A Broad Dialogue With China*. The Washington Post. (Note: Henry M. Paulson is US secretary of the Treasury.)

⁶³ Diamond, J.M. 2006. *Collapse: How Societies Choose to Fail or Succeed*. Viking, New York.

⁶⁴ Source: The World Factbook, US Central Intelligence Agency.

<https://www.cia.gov/cia/publications/factbook/geos/ch.html>

⁶⁵ Herd, Sean et al., 2005: *Economic Survey of China 2005: Improving the productivity of the business sector (Chapter 2 summarisation)*. Organisation for Economic Co-operation and Development (OECD) policy brief. <http://www.oecd.org/document/54/0,2340,en_2649_201185_35350582_1_1_1_1.00.html>

⁶⁶ Ibid.

⁶⁷ Li, Zijun, Dec 12 2005: *Report: Multinational Corporations in China Lag on Environmental Protection*.

Worldwatch Institute. <<http://www.worldwatch.org/node/3858>> (Also note that in 2006, 20 Chinese companies were listed on the Fortune 500.)

has recently been drawn to multinationals' violations of Chinese environmental law⁶⁸, many multinational companies that operate in China have begun to take their environmental and social responsibilities seriously, potentially leading the way for Chinese domestic industries.⁶⁹ In 2004, only 11 Chinese companies filed reports disclosing information about their social and environmental performance.⁷⁰

4. China's Responses to Opportunities and Challenges

In its 11th Five-Year Plan (2006-2010), approved by the National People's Congress in March 2006, the Chinese central government put forth an ambitious and compelling vision for "harmonious development." The Plan states the importance of both environmental sustainability and social and economic equality in the context of harmonious development, demonstrating the central government's commitment to addressing inequality. But with income inequalities on the rise and the majority of China's poor living in remote mountainous areas with fragile natural ecosystems, the issues of poverty and inequality are increasingly intertwined with ecosystem management, which poses significant development challenges.

In addition to the broad philosophical shift to 'harmonious development', China has taken a number of steps to address environmental opportunities and challenges at many levels.

4.1 Addressing Climate Change

China ratified the Kyoto Protocol in 2002. But as a developing country, China is not required to curb emissions. Still, in its pursuit of "harmonious development," China's national government is taking on the challenge presented by rapidly increasing energy consumption and the associated growth in greenhouse gas emissions. Faced with the prospect of global warming intensifying China's water shortages and undermining its agricultural sector, the central government views climate change as a development issue as well as an environmental one. This provides a useful entry point for IUCN.

As of July 2007, China's national authority had approved more than 600 Chinese Clean Development Mechanism (CDM) projects, of which about 100 have been registered⁷¹, and China is a major emerging player in the carbon market. China has received some two-thirds of the CDM investment of US\$ 4 billion since the beginning of 2005; Japan has bought almost 40 percent of Kyoto carbon credits. In February 2007, China established a carbon trading exchange in Beijing under the CDM, reflecting the projection by UNDP that China will account for 41% of all carbon credits issued by 2012. China has also established a special project called "MDG Carbon: Carbon finance for achieving the Millennium Development Goals", which will invest US\$ 1.7 million in 12 western parts of the country to help both the public and the private sector deal in carbon credits. It will use carbon trading as a tool to generate income and job opportunities by investing in green technologies in the region. The project would build on current reforestation efforts in the west, and seek to help correct the imbalance in wealth between the eastern and western parts of the country.

⁶⁸ For more information see: Liu, Jianqiang, Dec. 5 2006: *Multinational Corporations Violating China's Environmental Laws and Regulations*. Worldwatch Institute. <http://www.worldwatch.org/node/4764>

⁶⁹ Li, Zijun, Dec. 12 2005: *Lack of Corporate Social Responsibility Behind Recent Chinese Accidents*. Worldwatch Institute. <http://www.worldwatch.org/node/3859>

⁷⁰ Ibid.

⁷¹ Office of the National Coordination Committee on Climate Change. July 19 2007. *Newly Approved Projects by DNA of China*.

China's first Renewable Energy Law came into effect in 2006, and the government expects that by 2020 16% of China's total energy supply will come from renewable sources.⁷² The 2005 Renewable Energy Law provides financial incentives to those developing wind, solar, and bioenergy; one result is that China is now number six on the world list of wind power producers. China provides US\$ 1.25 billion in subsidies to biogas use by rural households, and renewable energies are a high priority in the National Plan for Medium and Long-Term Scientific and Technological Development.

Box 2. Chinese women's organisation pioneers sustainable energy initiative

In 2006, the Shaanxi Mothers Environmental Protection Volunteers Association was acknowledged by the Ashden Awards for Sustainable Energy for its promotion of clean energy resources in rural northwest China. The women's organisation undertook a series of activities—including tree planting, environmental protection campaigns, and training rural women to turn pig dung into methane and fertiliser for fruit trees—in order to raise environmental awareness while improving women's lives. The initiative has trained 8,015 women in 105 villages, and each household can use methane to replace at least 1,500 kilograms of firewood that was used annually for cooking⁷³.

4.2 Establishing Payments for Ecosystem Services

The Millennium Ecosystem Assessment, published in 2005, emphasised the importance of ecosystem services for people and provided a framework for those services to include provisioning, supporting, regulating and cultural services (see www.millenniumassessment.org). Together, ecosystem services contribute to the constituents of human well-being, and ecosystem services also underlie virtually all of the Millennium Development Goals.

Payments for ecosystem services (PES), for both direct and intrinsic values, is an issue being explored through the CCICED Eco-Compensation Measures Task Force, on which IUCN serves. Many of these payment schemes are already in operation. The most relevant ones appear to be:

- Payments from water users in the lower watershed to watershed service providers in the upper watershed;
- Biodiversity offsets to pay for the unavoidable damage of development activities such as mining;
- Incorporating PES into current development schemes, such as the Sloping Land Conversion Programme and Forestry Ecosystem Compensation Fund, through innovative targeting and design methods; and
- Carbon sequestration, through the Clean Development Mechanism of the Kyoto Protocol or "Verified Carbon Emission Reductions" (CERs) outside of the Kyoto regime.

In addition to PES for concrete services such as food supply and water supply management, PES can extend to less tangible values for biodiversity such as payments for cultural services. Among the many cultural services of ecosystems are the provision of scenic beauty and other aesthetic values that contribute to recreation, tourism, and a sense of identity of place for those who have long lived in a

⁷² Yang, Jianxiang, Oct. 26 2006: *China Speeds Up Renewable Energy Development*. Worldwatch Institute. <<http://www.worldwatch.org/node/4691>>

⁷³ Xinhua News Agency, July 12, 2006. Chinese Women Awarded for Renewable Energy Scheme. <<http://www.china.org.cn/english/2006/Jul/174446.htm>>

particular locality. One mechanism to finance scenic beauty is through entrance fees to protected areas, a “user pays” market approach. Numerous other ways of paying for protected areas are discussed in Quintela *et al.*, (2004) and at www.conservationfinance.org. These would need to be adapted to the specific conditions of the various protected areas in China, avoiding the “one size fits all” syndrome. When designing benefit sharing schemes it is also important to consider gender aspects, including women and men, as well as women’s traditional knowledge, in determining whom to target in sharing of benefits.

Detailed advice on PES has been provided through the CCICED Task Force on Eco-Compensation, including a very useful report from Forest Trends and Ecoagriculture Partners (Scherr *et al.*, 2006).

4.3 Governance of Biodiversity

Forest management

After the disastrous floods in 1998, the central government decided to implement the Natural Forest Protection Programme. A pilot project was started in 12 Provinces in 1998, and since 2000 the programme is in full implementation in 17 provinces and more than 700 counties. The total investment has been more than 125 billion RMB (approximately US\$ 15 billion). The objectives of this key programme are to introduce forest stewardship for 94 million hectares, reduce timber production and introduce a partial logging ban, restore 12.3 million hectares and re-deploy 740,000 forest workers.

In 2003 the Chinese government adopted an even more progressive forest policy, and began to shift from timber production-oriented forest management towards ecosystem management. Current national policy aims to have 26% forest cover in China by the year 2050, to enrich existing forests, protect and restore ecosystem functions, improve the availability of forest products and provide more income to local people. However, afforested areas tend to be single species and therefore of limited ecological value other than their role in stabilising hillsides.

Box 3. Five priority forest management programmes in China

- The Three North Shelterbelt Development Programme, covering large parts of China. The program involves 1,696 counties in 28 provinces. It is planned that 22.7 million ha of plantations will be established and 71.9 million ha of forests maintained.
- The Conversion of Cropland to Forest and Grassland Programme (otherwise known as ‘Grain to Green’) is the result of a strategic decision made by the Chinese Government for soil and water erosion control. A total of 22.7 million ha of land suffering from soil and water erosion in 17 provinces is expected to be restored by 2010.
- The Sandification Control Program for Areas in the Vicinity of Beijing is a priority ecology program waged for improving the capital city’s local environment. It focuses on the problem of sandstorms in areas in the vicinity of Beijing, and the forest and grass cover is expected to be raised from the current 6.7% to 21.4% by 2010.
- The Wildlife Conservation and Nature Reserve Development Programme targets such issues as species conservation, nature conservation and wetland protection. It covers typical and representative natural ecosystems nationwide, natural distribution areas for rare and precious endangered wildlife species and environmentally vulnerable areas.
- The Forest Industrial Base Development Program in Key Regions with a Focus on Fast-growing and High-Yield Timber Plantations will provide 130 million m³ of timber annually upon completion, thereby attempting to strike a balance between timber supply and demand in the domestic market.

The growing international momentum relating to Forest Law Enforcement and Governance (FLEG) has not yet been embraced by China but represents an important opportunity for IUCN's work. China's conservation-oriented domestic forest policies have profound implications for the many countries now exploiting their forests to meet China's growing need for timber much of which is destined for export to America and Europe as finished wood products such as furniture and flooring.

An important consideration in China's forestry management programmes is the relationship between rural communities, particularly women, and forest resources. In China, fuelwood contributes to 80% of household energy supplies and firewood is a very important source of energy, particularly for the minority populations who mostly live in remote and mountainous regions⁷⁴. Women and girls often spend multiple hours per day locating and collecting firewood.

Marine resource management

China has adopted many measures in order to improve marine environmental quality, including increasing control of industrial pollution sources and enhancing capacity for wastewater treatment. The central government has also been engaging in increased monitoring of various aspects of the marine environment. In 2005, for example, the government undertook an environmental survey of the Yangtze and Pearl River estuaries and the surrounding sea waters; these rivers rank first and second, respectively, in terms of outflow into China's seas. China is also placing increasing emphasis on the development of wetland nature reserves. But the challenges to China's marine environment continue to be compounded by the absence of an integrative mechanism for pollution prevention and clean-up, causing interregional pollution conflicts and leading to difficulty in improving environmentally degraded areas. Problems in invasive alien species in China's harbors and estuaries, let alone the coastal zone more generally, are receiving inadequate attention.

China has 29 national marine protected areas, administered by four different government departments. Economically, marine ecosystems are important: the nation is the world's largest supplier of fish, with its marine industries contributing significantly to the domestic economy.⁷⁵ In 2005, the total output of China's major marine industries accounted for 4% of national GDP; these industries are making increasing contributions to economic growth, in coastal regions.⁷⁶ Current national policy reflects this economic importance, calling for environmental protection of marine resources in order to facilitate sustainable development of the marine economy, and placing increasing emphasis on marine environmental quality. But rapid development continues to pose a serious threat to China's marine ecosystems, primarily through the impacts of land-based activities that pour vast amounts of pollutants into the seas.

Freshwater management

Increasing water scarcity has generated alarm among China's leaders, and prompted a technocratic response. China has a long history of constructing infrastructure for water management, and since the founding of the People's Republic of China, these infrastructure projects have increased dramatically in size and number. China is now first in the world in terms of the number of dams built. In 1949, China had eight large dams; forty years later the country had about 19,000. Today, large-scale water management projects particularly take the form of water transfer from the southern to the northern regions. Construction has already begun on the south-north water transfer scheme – a massive project designed to pump 48 billion m³ of water from the flood-prone south to the parched northern part of the

⁷⁴ FAO, 1998. Asia's women in agriculture, environment and rural production: China. "SD Dimensions." <<http://www.fao.org/sd/WPdirect/WPre0107.htm>>

⁷⁵ Lem, Audun, 2002: *China, the WTO and the World Fish Trade*. GLOBEFISH, Food and Agriculture Organization. < <http://www.globefish.org/index.php?id=2066&easysitestatid=-597961105>>

⁷⁶ UNEP/GPA, 2006.

country. With an estimated price tag of \$59 billion, it dwarfs even the Three Gorges dam in scale, and is scheduled for completion in 2050.

Officials estimate that this water transfer scheme will require the relocation of at least 370,000 people. Analysts acknowledge that the project may be accompanied by significant environmental problems, such as the alteration of hydrological processes, disruption of entire aquatic ecosystems, pollution, salinisation and saltwater intrusion in the lower Yangtze River. China's dams are not improving water quality, and are in some cases aggravating water pollution. China's wetlands, underrepresented in the protected area system, are decreasing in size and are suffering from ecological degradation, in part due to the dams that have been and continue to be constructed throughout the country. Another common water management practice is draining wetlands for conversion to farmland (though some are being restored to help with flood control). In addition, vulnerable populations such as indigenous peoples and women often suffer disproportionately due to construction of large dams. When women are not recognised as legitimate heads of household, they are often denied compensation for submerged lands and do not enjoy the same benefits to enhanced employment opportunities⁷⁷.

China is seeking to develop public-private partnerships in the water sector, but has been slow in developing the appropriate rules and regulations.

4.4 Environmental Governance in China

Recent efforts of the Chinese government to implement environmental laws and regulations have culminated in a comprehensive Environmental Protection Law which focuses on implementation and enforcement, defines accountability and legal responsibility, and imposes sanctions for non-compliance. In addition, internationally, China is a signatory to all major environmental conventions and an active participant in the World Heritage Convention, CITES, Ramsar, the Convention on Biological Diversity, and the framework conventions on Climate Change and Desertification. China is also a signatory to all the major international human rights treaties, including the Universal Declaration of Human Rights, the Beijing Platform for Action on women's rights, the Convention on the Elimination of All Forms of Discrimination Against Women, and is committed to gender equality through the Chinese Constitution, the Law on the Protection of Rights and Interests of Women (1992), and the Program for the Development of Chinese Women (2001-2010).

At the same time, international environmental concerns are insufficiently recognised, and China does not yet play its part in Pan-Asia discussions about shared water courses, mountain ecosystems, marine resources and other international environmental issues.

Box 4. China and the UNCCD

Desertification impacts over 27% of China's total area, threatens 400 million Chinese, and is annually responsible for direct economic losses of about US\$6.5 billion, according to the Chinese government. Since the late 1980s, the government has been working to combat desertification, and the most recent phase focuses on acceleration of revegetation, capacity building for desertification monitoring, research and awareness building, and the adaptation of practical technology for use in restoring degraded rural lands. The long-term objective of China's 2006 *National Action Programme* to implement the UNCCD is to rehabilitate 35 million hectares of desertified land by 2050.

⁷⁷ Human Rights Brief, 2001. *China's Three Gorges: The Impact of Dam Construction on Emerging Human Rights*. Volume 8, Issue 2. <<http://www.wcl.american.edu/hrbrief/08/2damconst.cfm>>

4.5 Exploring Biotechnology's Potential

Though GMOs are highly controversial in China and abroad, they have come to be widely used in Chinese agriculture and China is a world leader in biotechnology. In fact, China is developing the largest public plant biotechnology sector in the developing world.⁷⁸ Public investment is substantial: from 1995 to 2000, investment in plant biotechnology grew by about 30% a year, and in 2003 it totaled US\$ 55.9 million, with almost all funds coming from the government.⁷⁹ In 2006, China was the world's second largest grower of GM cotton; more than 60% of Chinese grown cotton was genetically modified.⁸⁰ Over 100 GM crops have been released, including trees, flowers and food plants.

Currently, pro-GMO interests are hoping that the government will approve commercial production of GM rice. But in 2006 two GM crops – the Monsanto Bt cotton that is widely grown in China and GM rice – attracted attention and controversy. A Cornell University study of Bt cotton farming in China found that benefits to cultivating the expensive GM crop were short-lived – an assertion that has attracted challengers and supporters not only in China, but also globally.⁸¹ Concerns that China may be financially and institutionally unable to accurately label its GM farm products were fueled when Chinese GM rice, not yet domestically approved for commercial production, was found in products being sold in the EU. The EU does not yet allow the sale, import or marketing of any GM rice strain, though GM rice is found in some Chinese markets.

Not only are domestic and global consumers exposed to Chinese-grown GMO products, but Chinese consumers are also exposed to agricultural GMO imports. In 2002, following on the heels of China's ascension to the WTO, the central government introduced comprehensive GMO import controls and labeling laws requiring that all GMO foods be labeled. Perhaps partly in response to these labeling regulations, several large international corporations, including Coca-Cola and Danone, sell only GMO-free products in China. But it is common practice for GM agricultural imports to be purchased and processed by domestic companies; almost all major domestic cooking oil brands, for example, contain GM materials.⁸²

Since many small farmers in China are women, and because women often use traditional plant varieties for medical uses, China's GMO trend raises concerns for gender equality goals. New plant technologies reduce the sphere of influence that women have exercised in growing and using plants in rural communities. Women are increasingly being reduced to laborers, rather than managers, of biological resources, and are increasingly being viewed as recipients of knowledge about biodiversity, rather than generators of such knowledge⁸³.

⁷⁸ Huang, Jikun et al., 2004: *Plant biotechnology in China: public investments and impacts on farmers*. "New directions for a diverse plant". Proceedings of the 4th International Crop Science Congress, 26 Sep. – 1 Oct. 2004, Brisbane, Australia. [www.cropscience.org.au](http://www.cropsscience.org.au)

⁷⁹ Ibid.

⁸⁰ Niu, Shuping, Feb. 1, 2007: *Asia to drive growth of GMO crops in next decade*. Reuters.

⁸¹ Connor, Steve, July 27 2006: *Farmers use as much pesticide with GM crops, US study finds*. The Independent (UK).

⁸² MinterEllison, May 2005: *China Food and Beverage Briefing Paper*. Developments in the China Food and Beverage Industry.

⁸³ UN Commission on Science and Technology for Development, July 2003. Critical Issues Pertaining to the Gender Dimension of Biotechnology Policy: A Paper for the Gender Advisory Board. <<http://gab.wigsat.org/gdrbiotech.pdf>>

4.6 Growing Involvement of Civil Society in Environmental Matters

Numerous national and international NGOs are working on environmental issues in China, as well as on associated poverty alleviation and social development activities. China's recent report to the UNCCD notes that there are more than 2000 NGOs in China working on environmental issues.⁸⁴

In the past several years, public participation in the environmental debate on dam issues in the upper reaches of the Nujiang River and ecological damage to the old Summer Palace of China resulting from construction have attracted massive media coverage and discussions. These debates not only showed the public's concern about and participation in environmental matters, but they also affected the decision making process for environmental impact assessments (EIA). Through the new EIA process, a public hearing mechanism has been introduced for the first time in China as an aspect of decision making related to environmental issues. However, the influence of environmentalists is still very weak.

5. IUCN's Programme in China

5.1 Current IUCN activity in China

IUCN's recent work in China includes protected areas management, environmental law, forestry, biodiversity conservation capacity building and environmental economics.

Protected Areas

In addition to supporting IUCN evaluations of new and existing World Heritage (WH) Sites in China, the China Program completed a DGCS funded project in 2006 representing an initial phase of the China World Heritage Biodiversity Programme (CWHBP), which is designed to strengthen the management of China's natural and mixed World Heritage Sites. IUCN's role included support for site assessments along with a capacity building needs assessment for WH sites in China and a study of potential transboundary WH sites with neighboring countries.

Environmental Law (Nature Reserve Law)

In 2006-7, IUCN (including both the China Programme and the Environmental Law Programme) served as technical advisor to the drafting of China's first Nature Reserve Law through an Asian Development Bank sponsored project supporting the drafting of environmental legislation. A group of Chinese Government officials involved in drafting the protected areas legislation visited the Environmental Law Centre in April 2007 to work with IUCN staff in a comparative analysis of protected areas legislation.

Forestry

IUCN and Forest Trends are hosting a series of Chatham House-sponsored dialogues on illegal logging in 2007-2008. The aim of these dialogues is to foster discussion about China's trade in forest products, share conclusions and data arising from research work, help to ensure that international and local organisations are working together in the most effective manner possible and start to build up an understanding of the solutions to the trade question that may be useful in China.

The Landscapes and Livelihoods Strategy (LLS), a large global IUCN program aims to catalyse the sustainable use and conservation of forest biodiversity and ecosystem services for the benefit of the rural poor. LLS has a substantial component in China focusing mainly on Forest Law Enforcement

⁸⁴ China National Committee for the Implementation of the UNCCD. June 2006. *China's National Report on the Implementation of the United Nations Convention to Combat Desertification*.

and Governance (FLEG), Forest Landscape Restoration (FLR) and poverty reduction. This work is complemented by a FLEGT project linking Africa and China.

Biodiversity Conservation capacity building

A Countdown 2010 Hub is being established in China, with the aim of gaining public attention for the challenge of saving biodiversity by 2010, encouraging and supporting China's full implementation of existing commitments to save biodiversity, and engaging all necessary stakeholders in the process. The China Program is also managing the Tibet component of a large regional decision support system project known as HKKH-DSS that includes neighboring Nepal and Pakistan. The aim of the project is to increase capacity for systemic planning and management at the local, national and regional levels.

Programmatically, IUCN is aiming to support its members and partners in China in specific areas of protected areas management and World Heritage; drafting of conservation related legislation; ecosystem management and livelihood support; forest landscape restoration and management; forest law enforcement and governance; integrated water resources management; connecting Multilateral Environmental Agreement obligations with Chinese development priorities; and environmental economics.

5.2 IUCN's Members in China

IUCN has 10 members in China, including three in Hong Kong. China is a State Party of IUCN, represented by the Ministry of Foreign Affairs. Two government agency members are the Hong Kong Agriculture, Fisheries and Conservation Department and the Hong Kong Zoological and Botanical Gardens. Non-governmental members include the Centre for Biodiversity and Indigenous Knowledge (CBIK), China Landscape and Historic Sites Association (CLHSA), China Wildlife Conservation Association (CWCA), the Nanjing Institute of Environmental Sciences (which is part of SEPA), the China Association for NGO Cooperation (CANGO) and WWF Hong Kong. The Institute of Botany, Academia Sinica is an affiliate member. In addition, several international conservation organisations that are members of IUCN are active in China and provide opportunities for collaboration. These include WWF, Conservation International, The Nature Conservancy, Fauna and Flora International, Wetlands International, The International Crane Foundation, Forest Trends, World Resources Institute, and the World Pheasant Trust.

5.3 IUCN's Commissions in China

IUCN's six Commissions have a long history of working in China, and provide strong support to IUCN activities in the country. The Species Survival Commission (SSC) has about 80 members in China, covering numerous specialist groups. All global assessments cover China, and many SSC members from outside of China also work on species within the country, with particular attention to the Yangtze River dolphin, Chinese alligators, giant pandas, pheasants, cranes, grouper and wrasse, medicinal plants, and many others. The Commission is in the process of developing a China Plants Action Plan, and has recently funded some other projects in China, including a grouper assessment workshop and a project on the Critically Endangered Prezwalski gazelle. Wildlife trade is a particular concern of SSC, involving collaboration with TRAFFIC and assisting China in its implementation of CITES. In 2006, SSC facilitated an Asian Elephant Range State Dialogue at which China was represented.

The World Commission on Protected Areas (WCPA) also is very active in China with 33 Members. Of particular interest is work on natural World Heritage sites, protected areas legislation, and building

management capacity among the various protected area management agencies in China. China's remarkable growth in its protected area coverage has provided a particular opportunity for WCPA to contribute to the effective management of China's protected areas. In addition, China is highly involved with the work of the WCPA-East Asia Steering Committee (2005-2008).

The Commission on Environmental Law (CEL) has nine members in China, who are recognised experts at the national and international level. Several CEL members have been involved in IUCN's work on the Nature Reserve Law. In 2005, a Chinese language version of the IUCN Environmental Policy and Law Series publication on "Energy Law and Sustainable Development" was published by Law Press China and contributed to the Beijing International Renewable Energy Conference in 2005.

The Commission on Education and Communication (CEC) has seven Members in China. It is collaborating with the Centre for Environmental Education and Communication, part of the State Environmental Protection Authority (an IUCN Member). The Deputy Chair of the Centre is a Member of CEC. This is leading to renewed interest in CEC, which expects to expand its Chinese membership in the coming months.

The Commission on Ecosystem Management (CEM), with just five members, has only a modest presence in China, but it is translating its bi-monthly Ecosystems Newsletter into Chinese for wide distribution in the country. CEM is working with the Chinese Academy of Sciences to develop a proposal to form a Task Force on Integrated Ecosystem Management, for consideration by the China Council on International Cooperation on Environment and Development (CCICED). The CEM is also seeking opportunities to work on a research strategy addressing ecosystem services and poverty alleviation.

The Commission on Environmental, Economic and Social Policy (CEESP) has provided technical assistance to the co-management of natural forests in Song Pan County of Sichuan Province, as part of the EU-China Natural Forest Management Programme, contributed to the initial scoping exercise on monitoring of mining impact in Yunnan and Qinghai Provinces, and reviewed the status and needs of community conserved areas in Southwest China.

5.4 Other Institutional Links with China

IUCN has been a part of the China Council on International Cooperation in Environment and Development (CCICED) from its early days, with representation by the Director General. At the Task Force level, several IUCN staff have been involved in various aspects of the work of CCICED, including on biodiversity, biosecurity (including on invasive alien species), protected areas (including substantial contribution to the protected area law), and eco-compensation measures.

5.5 Analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT)

<p>Strengths:</p> <ul style="list-style-type: none"> ● IUCN has <i>strength in science</i>, research and the capacity to bring a critical mass of scientific experts to bear upon a given issue. IUCN's six expert Commissions have more than 300 members in China and IUCN's scientific authority is recognised by Chinese academics and government bodies alike. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> ● Although IUCN has a long history of involvement in China, most initial work was carried out through <i>short-term inputs</i> from Headquarters, the Asia Regional Office, Commissions and through ad-hoc programme interventions.
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<ul style="list-style-type: none"> ● IUCN is universally acknowledged for its <i>convening and facilitating</i> capabilities, and hence can perform a coordinating role both between government agencies and NGOs, as well as among our international NGO members in China, something that they have welcomed. ● Few organisations in China have been working on <i>legal and economic</i> aspects of environmental issues, two areas in which IUCN has strong capacity. ● As the advisor to UNESCO for natural <i>World Heritage</i> sites, IUCN is seen by China as the premier technical body on natural World Heritage, and there is much interest from the central, provincial and local levels in working with IUCN more closely in this area. ● IUCN has had a <i>longstanding role on the China Council for International Cooperation on Environment and Development (CCICED)</i> and its working groups, in particular the Biodiversity Working Group, the Protected Areas Task Force (PATF) and the Eco-Compensation Task Force. ● <i>Secondments of staff from SEPA and MOC to IUCN have created allies</i> as well as a reservoir of goodwill that we can draw upon within the Chinese bureaucracy. ● IUCN is one of the world's leading organisations in the area of <i>gender and environment</i>, and has already developed gender methodologies relating to a range of environmental sectors that could be easily applied in China. 	<ul style="list-style-type: none"> ● IUCN's presence in China is still at an early stage, with limited capacity compared to other international organisations of similar global stature. IUCN's lack of capacity in China relative to other international conservation and development organisations reflects its <i>low level of investment</i> there. ● Despite some success in generating project funds, most of these projects have <i>not allowed for hiring of additional staff</i> that are urgently needed to develop IUCN's programme in China. IUCN's rate of return policy on projects is an additional impediment to hiring new staff. ● The China Liaison Office currently <i>lacks the technical staff</i> that can translate IUCN's global scientific expertise into the Chinese context and serve as ad hoc advisors to government bodies. ● IUCN still lacks formal legal status in China (like other foreign conservation organisations), as the legal framework is not yet in place. ● Gender mainstreaming through IUCN has been applied in an ad hoc manner, and progress in this area in IUCN's China activities would require a commitment to integrate gender from the outset
<p>Opportunities:</p> <ul style="list-style-type: none"> ● There is great scope for bringing IUCN's technical expertise to bear on protected areas management in China, particularly in the areas of protected area categories, management effectiveness and World Heritage. A DGCS funded initial phase of the <i>China World Heritage Biodiversity Program</i> has laid a foundation for future work on World Heritage ● IUCN's <i>technical advisory role in the drafting of China's first Protected Areas Law</i> has set a precedent that can be built upon in the future to 	<p>Threats/Challenges</p> <ul style="list-style-type: none"> ● Our work on World Heritage needs to be handled with great sensitivity, given our role under the Convention as an independent advisor on the suitability of sites for listing; the role can cause tensions if we are advising on a site we later reject. ● Because of China's strong economic development and rapid modernisation, <i>bilateral donor funds to China are shrinking</i>. As a result, funding resources

<p>play a similar role in the development of other conservation related laws.</p> <ul style="list-style-type: none"> ● IUCN can play an active role in the <i>China Biodiversity Partnership Framework</i>, which aims to be the overarching umbrella for biodiversity conservation activities in China. ● There is currently considerable interest in issues of <i>Integrated River Basin Management (IRBM)</i> in China. IUCN is well placed to facilitate multistakeholder dialogues surrounding water resources management. With the launching of the Chinese version of FLOW in September 2006, IUCN has established itself as a source of expertise on environmental flows. ● Joint work with TRAFFIC represents a potentially fruitful area of opportunity. Given <i>China's enormous footprint in the wildlife trade</i>, one area of collaboration is on the sustainable use and trade in traditional plant medicines. ● IUCN's publications are well received in China. <i>Translating IUCN publications into Chinese</i> and ensuring their widest possible dissemination can considerably expand the Union's influence at relatively low cost. 	<p>will increasingly need to be sought outside China. Currently it is illegal for international organisations and NGOs to fundraise from national sources.</p> <ul style="list-style-type: none"> ● IUCN faces the difficult challenge of <i>locating funds and qualified personnel without competing with international IUCN members</i> that have a more established presence in China. Collaboration and shared staff may be a solution. ● <i>Existing staff are over-stretched</i>, which results in difficulty meeting current obligations, let alone taking on new projects. ● IUCN's projectised model makes it difficult to maintain programmatic continuity over time. Another problem with this model is that staff hired for projects have little time for other things. ● Due to the large size of the Union and considerable interest in China from both within the Secretariat and Commissions, there is a <i>tendency for IUCN to be very scattered</i> and to try to cover too many different topics. This creates difficulties in meeting obligations and in maintaining continuity in its activities over time.
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5.6 Linking China to IUCN's programme

As noted earlier, IUCN already has a history in China and credibility in particular aspects of conservation, especially species assessment and protected area management. A strategy for IUCN in China must be developed within the context of IUCN's programme, IUCN's capacity and available funding.

	China	IUCN
Major conservation and development challenges	Climate change Energy demand Agriculture Desertification Water scarcity Poverty reduction/security Overexploitation of ecosystem	Climate change Energy Markets / CSER Poverty reduction/security Loss of ecosystem services Gender mainstreaming

	services Gender equality	
Major conservation and development opportunities	PES Landscape scale management World Heritage Environmental law	PES Landscape scale management Protected areas Environmental law

IUCN's programmatic priorities have a strong overlap with those of China. However, with respect to capacity, IUCN is less able to deliver on issues relating to climate change and energy than on law, protected areas, landscape scale ecosystem management, and overexploitation of resources (especially through the work of TRAFFIC), and gender mainstreaming. Any strategy devised, then, should optimise our approaches on the latter four and be less ambitious on the former until such time as capacity is available.

From the funding perspective, China is quickly losing its status as a 'developing country' in terms of receiving development assistance from traditional bilateral donors. IUCN's China strategy should include a funding plan that incorporates approaches to a new suite of donors from the foundation community and private sector.

Finally, the situation in China is changing at a dizzying pace. Keeping track of the situation and maintaining flexibility in our approach will help to ensure an effective programme. In order to provide a broad base of support and advice to the core team implementing the China Strategy, a small ad hoc Advisory Group is proposed that includes representatives from the region, from global thematic programmes and Commissions that are deeply involved in China work, and one or two external experts that have worked with IUCN and know both the institution and China. This Advisory Group would be mobilised as needed by the China programme team to provide advice on specific strategic issues. They do not have decision making authority, and are responsible only to the China team to provide input as requested. A suggested roster for this Advisory Group, based on current staffing, would include:

Seth Cook
Kent Jingfors
Stewart Maginnis
Sue Mainka
Jeff McNeely
Mohammed Rafiq
Pattie Moore
Peter Shadie

6. Draft IUCN China Programme

The information in the situation analysis presented earlier, along with the new IUCN Programme 2009-2012 shows clear synergies and opportunities for IUCN to deliver important results that will benefit China's development and biodiversity. Below is an outline of a programme strategy based on that synergy. This programme of work is intended to include the work that the Secretariat as a whole and Commissions will work towards and is not limited to the work of the team based in IUCN in China alone.

Box 5. IUCN's Mission and Vision

IUCN Vision

A just world that values and conserves nature

IUCN Mission

To influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and ensure that any use of natural resources is equitable and ecologically sustainable.

6.1 Goals for IUCN's China Programme

1. Ecosystems, habitats and species in China are conserved and rehabilitated.
2. Natural resources in China are used and managed on an equitable and sustainable basis, including within and among communities and between men and women.
3. A dynamic, effective and sustainable program is efficiently managed to pursue the mission of IUCN in China.

As IUCN moves towards results-based planning and implementation, the China Strategy will be developed within the context of IUCN's Programme 2009-2012 (see Box 6).

Box 6. IUCN Programme 2009-2012

Core Programme Area 1 - Biodiversity for life

Ensuring sustainable and equitable management of biodiversity from local to global levels

- | | |
|---------------------------|--|
| Global result 1.1: | Biodiversity-related policies and governance systems enable action towards the achievement biodiversity conservation. |
| Global result 1.2: | IUCN standards, tools and knowledge for sustainable natural resource management available and used for biodiversity conservation including effective management of global and regional common natural resources. |
-

Core Programme Area 2 – Climate: changing the forecast

Climate change policy and practice better integrate biodiversity considerations and opportunities

- | | |
|---------------------------|---|
| Global result 2.1: | Climate change mitigation policies and practice include biodiversity concerns from local to global level. |
| Global result 2.2: | Natural resources management strategies to adapt to the impact of climate change are adopted and implemented. |
-

Core Programme Area 3 - Naturally energising the future

Implementing ecologically sustainable, equitable and efficient energy systems

- | | |
|---------------------------|---|
| Global result 3.1: | Energy policies and strategies mitigate the impact of the growing energy demand on biodiversity. |
| Global result 3.2: | Ecosystem services that underpin sustainable and equitable energy are incorporated in energy policies and strategies. |
-

Core Programme Area 4 - Conservation for poverty reduction and security

Improving livelihoods, reducing poverty and vulnerability, and enhancing environmental and human security through sustainable ecosystem management

- | | |
|---------------------------|--|
| Global result 4.1: | Development policies and strategies support vulnerable and poor stakeholders, especially women, to sustainably manage ecosystems for improved livelihoods. |
| Global result 4.2: | Sustainable environmental management reduces vulnerability to natural hazard and conflicts. |
-

Core Programme Area 5 - Greening the world economy

Integrating ecosystem conservation values in economic policy, finance and markets

- | | |
|---------------------------|--|
| Global result 5.1: | International agreements on trade and investment better reflect biodiversity values. |
| Global result 5.2: | Key stakeholders empowered to incorporate ecosystem values into private sector planning. |
-

6.2 A Draft Strategy for China

Core Programme Area 1 - Biodiversity for Life

Ensuring sustainable and equitable management of biodiversity from local to global levels

	Global result 1.1:	Biodiversity-related policies and governance systems enable action towards the achievement biodiversity conservation.
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China Programme intersessional results:

- Supported by IUCN tools and knowledge, China plays a major positive role at international events and with multilateral environmental agreements on biodiversity.

	Global result 1.2:	IUCN standards, tools and knowledge for sustainable natural resource management available and used for biodiversity conservation including effective management of global and regional common natural resources.
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China Programme intersessional results:

- Enhanced management capacity in up to three natural and mixed World Heritage Sites, and in selected National Heritage sites, in China thereby providing national demonstration sites of best contemporary protected area practice.
- Reforestation programs in at least three landscapes in China adopt the principles of FLR (Forest Landscape Restoration).
- Chinese stakeholders are engaged in Forest Law Enforcement and Governance (FLEG) processes at the national, regional and international levels and improved forest governance is emphasized in FLEG activities.

Activities undertaken to achieve these results might include:

- WWF-TRAFFIC TCM project
- Involvement in development of the China Plant Conservation Strategy.
- Helping to lay the groundwork for environmental flows as a practical component of China's new push towards IRBM
- Working with the Society for Conservation Biology to provide free memberships to key individuals in China, and help support participation of IUCN members in SCB's Annual Meeting in Beijing in 2009
- Enlisting cooperation from international and national NGO members in World Heritage matters, thus providing assistance to the Government of China for the management of natural and mixed World Heritage Sites through the China World Heritage Biodiversity Program.
- Promote improved forest governance as a key element of FLEG and sustainable forest management.
- Chinese government, private sector and civil society representatives participate in IUCN China meetings and exchanges, such as the Chatham House Dialogues on Illegal Logging.
- The China Biodiversity Partnership Framework, which is designed to be the overarching umbrella for all biodiversity work in China.
- Linking the international NGOs through focusing on providing authoritative information on China's biodiversity, in partnership with the Chinese Academy of Sciences. This should be linked with existing research programmes in China so that an effective monitoring programme can be established.
- Linking with Forest Trends and CCICED on payment for ecosystem services, and providing lessons learned to other IUCN offices in Asia.
- Working with Alcoa Foundation and Tsinghua University to convene Sustainability Fellows from China to address sustainable ecosystem management issues.
- Cooperating with SEPA on the revision of the Environmental Protection Law of China.
- Developing gender and environment methodology and information that responds directly to community biodiversity access issues in China.
- Involving local women's organizations in the development of activities under IUCN's China Programme.

Core Programme Area 2 – Changing the climate forecast

Climate change policy and practice better integrate biodiversity considerations and opportunities

	Global result 2.1:	Climate change mitigation policies and practice include biodiversity concerns from local to global level.
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	Global result 2.2:	Natural resources management strategies to adapt to the impact of climate change are adopted and implemented.
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China Programme intersessional results:

- At least three projects implemented in collaboration with other organisations to introduce and demonstrate IUCN's approach to climate change adaptation, and the information transferred to others.

Activities undertaken to achieve these results might include:

- *UNDP China office is supporting a provincial strategy in China to adapt to climate change, it might be possible to introduce and combine IUCN tools/strategies related to climate change in their strategy.*
 - *To promote integrated natural resource management (looking into all the relevant factors: water, energy, forest, flora & fauna) in target areas (such as the Minshan and IUCN forest project areas) to enhance carbon storage and to decrease/avoid carbon emissions.*
 - *Many governments have agreements to work with China on energy, including Canada, and IUCN's China Programme could work with them to jointly develop projects. Japan is a major purchaser of Chinese carbon credits, offering opportunities for collaboration (will require more consistent links with Japan).*
 - *To promote the conservation and improved management of mangroves and/or coastal forests through China's engagement in IUCN regional programmes such as Mangroves for the Future (MFF).*
 - *Linkages with SSC to document, analyse and publicise the impacts of climate change on species and the responses of species to climate change, promoting the incorporation of this knowledge in adaptation planning and policies in China.*
 - *Analysing the gender aspects of mitigation and adaptation in China, including opportunities for women to develop CDM projects and to help curb resource constraints resulting from climate change.*
-

Core Programme Area 3 - Naturally energising the future

Implementing ecologically sustainable, equitable and efficient energy systems

	Global result 3.1: Energy policies and strategies mitigate the impact of the growing energy demand on biodiversity.
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China Programme intersessional results:

- Energy decisions by governments and the private sector, in at least three cases, include effective measures for biodiversity conservation as informed by IUCN action and knowledge.

	Global result 3.2: Ecosystem services that underpin sustainable and equitable energy are incorporated in energy policies and strategies.
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Activities undertaken to achieve these results might include:

- *Focus on energy efficiency, carbon capture and storage and development of renewable energy. IUCN impact in this field is likely to be limited on its own, but it certainly can contribute to a consolidated effort toward this end, especially drawing on expertise from the Commissions.*
- *Cooperation with major international energy companies, notably Shell, to build biodiversity concerns into their joint operations with Chinese energy companies.*
- *Promote decentralized (off-grid) renewable energy options in target project areas (e.g. micro hydro, micro-wind, integrated solar power applications, wind/PV hybrid systems, integrated biogas systems, etc).*
- *Introduce and promote energy efficiency technologies/applications in target project areas (e.g. energy saving stoves, energy saving home appliances, energy saving measures in building sector, etc.).*
- *Assist the government in further developing and improving the current incentive policies for renewable energy application in rural areas.*
- *Improve women's access to information, training, credit, and technology in relation to renewable energy initiatives.*

Core Programme Area 4 - Conservation for poverty reduction and security

Improving livelihoods, reducing poverty and vulnerability, and enhancing environmental and human security through sustainable ecosystem management

	Global result 4.1: Development policies and strategies support vulnerable and poor stakeholders, especially women, to sustainably manage ecosystems for improved livelihoods.
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China Programme intersessional results:

- Approaches tested and developed to reconcile poverty reduction and biodiversity conservation, while promoting gender equity, at the landscape scale are adapted and/or replicated in three landscapes by IUCN and its partners.

	Global result 4.2: Sustainable environmental management reduces vulnerability to natural hazard and conflicts.
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Activities undertaken to achieve these results might include:

- *Translate key IUCN documents into Chinese; and collaborate with others to translate key sections of the Millennium Ecosystem Assessment.*
 - *Promote Forest Landscape Restoration to balance socioeconomic and ecological objectives in degraded forest landscapes.*
 - *To promote ecotourism, organic agriculture and other initiatives for the promotion of sustainable livelihoods and equality of access in target areas.*
 - *To promote off-grid renewable energy options in target areas (especially integrated biogas systems, integrated solar power systems, etc.) that will contribute to their sustainable livelihoods and local biodiversity conservation.*
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Core Programme Area 5 - Greening the world economy

Integrating ecosystem conservation values in economic policy, finance and markets

	Global result 5.1: International agreements on trade and investment better reflect biodiversity values.
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China Programme intersessional results:

- Biodiversity conservation is acknowledged as a substantive component of China's official development and investment policies towards Africa.

	Global result 5.2: Key stakeholders empowered to incorporate ecosystem values into private sector planning.
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China Programme intersessional results:

- IUCN contributes to the incorporation of ecosystem values and related CSR principles into the policies and practices of at least one major Chinese company.

Activities undertaken to achieve these results might include:

- *Working in partnership with Norway (and other potential partners) in relation to China's footprint in Africa and potentially including links with the Forum on China-Africa Cooperation (FOCAC) which is the chief mechanism for dialogue between Africa and China.*
- *Bringing IUCN's leaders in Africa, plus selected government officials, to China for a series of seminars on how best to work with Chinese interests in Africa.*
- *Bringing Chinese officials to Africa for a study tour and seminars to better understand the history, evolution and trends in forest governance in selected African countries.*
- *Working with the Asian Development Bank's Greater Mekong Project to encourage Chinese participation on integrated river basin management.*
- *IUCN provides detailed briefing materials to relevant Chinese government agencies in preparation for meetings of MEAs (CITES, CBD, etc.).*
- *Disseminate information on existing trade and investment measures in China that include biodiversity conservation measures.*
- *Awareness-raising on private sector activities that exacerbate gender discrimination in resource access and control in communities in China.*
- *Consult with Chinese women's organisations, such as Women and Environment Network, about the gendered impacts of China's foreign trade and investment policies and private sector activities that have a negative impact on biodiversity conservation.*

6.3 A Monitoring Framework for the Strategy

Result	Indicator
Core Programme Area 1 – Biodiversity for Life.	
Supported by IUCN tools and knowledge, China plays a major positive role at international events and with multilateral environmental agreements on biodiversity.	<p>Positive interventions by Chinese delegations at international meetings.</p> <p>Number of positive Chinese sponsored resolutions.</p> <p>Perception of other stakeholders of China's positive role or leadership.</p>
Enhanced management capacity in up to three natural and mixed World Heritage Sites, and in selected National Heritage sites, in China thereby providing national demonstration sites of best contemporary protected area practice.	<p>Periodic evaluations of management effectiveness undertaken in the three natural and mixed World Heritage Sites reveal improved management practices and standards over time.</p> <p>Number of natural and mixed World Heritage Sites and National Heritage Sites in China where IUCN tools and knowledge are being applied.</p>
Reforestation programs in at least three landscapes adopt the principles of FLR (Forest Landscape Restoration).	Number of landscapes adopting the principles of FLR.
Chinese stakeholders are engaged in Forest Law Enforcement and Governance (FLEG) processes at the national, regional and international levels and improved forest governance is emphasized in FLEG activities.	<p>Number of participants from the government, private and civil sectors at FLEG related meeting and activities.</p> <p>Level of response of Chinese Government to international and regional FLEG initiatives.</p>
Core Programme Area 2 – Changing the climate forecast	
At least three projects implemented in collaboration with other organisations to introduce and demonstrate IUCN's approach to climate change adaptation, and the information transferred to others.	Number of projects adopting IUCN climate change adaptation tools/ measures, including gendered aspects.
Core Programme Area 3 – Naturally energising the future	
Energy decisions, in at least three cases, include effective measures for biodiversity conservation as informed by IUCN action and knowledge.	Number of energy decisions including biodiversity considerations.
Core Programme Area 4 – Conservation for poverty reduction and security	
Approaches tested and developed to reconcile poverty reduction and biodiversity conservation, while promoting gender equity, at the landscape scale are adapted and/or replicated in three landscapes by IUCN and its partners.	Number of landscapes where IUCN approaches tested
Core Programme Area 5 – Greening the world's economy	
Biodiversity conservation is acknowledged as a substantive component of China's official development and investment policies towards Africa	Policy documents reflecting China's approach to relations with Africa (content analysis using

Result	Indicator
development and investment policies towards Africa.	qualitative checklist of desirable attributes).
IUCN contributes to the incorporation of ecosystem values and related CSR principles into the policies and practices of at least one major Chinese company.	Number of multinational businesses in China that include biodiversity in their business planning and mitigate activities that cause gender discrimination in resource access.