



CHINA AND NON-TRADITIONAL SECURITY:

Global Quest for Resources
and its International
Implications

Event Report
31 October 2014

Institute of Defence and
Strategic Studies

RSiS
Nanyang Technological University

S. RAJARATNAM
SCHOOL OF
INTERNATIONAL
STUDIES

Event Report

China and Non-traditional Security: Global Quest for Resources and Its International Implications

Report of a Workshop Organised by:
The China Programme,
Institute of Defence and Strategic Studies (IDSS),
S. Rajaratnam School of International Studies (RSIS),
Nanyang Technological University (NTU),
Singapore

Nanyang Executive Centre,
Singapore
31 October 2014

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EXECUTIVE SUMMARY

In the past three decades, China has emerged from an impoverished country to become an economic power with an expanding middle class and more megacities than anywhere else in this planet. This phenomenal transformation has been fueled by massive quantities of resources such as oil, gas, coal, iron or, and water and food. Working on very limited domestic resources, like every other major power in modern history, China has embarked on a global quest for these critical resources to meet its growing demand. Of all the critical resources, energy, water and food deserve the most attention.

At the global level, China's projection of its domestic resource shortage overseas raised alarm. There is growing fear that the Chinese global quest for resources will cause resource scarcity and rising commodity prices. State-owned enterprises are sourcing around the globe for resources; striking deals at terms no other competitors could equal and investing in countries where western counterparts are reluctant to go. While the resource-rich countries benefit from the Chinese investment, they still worry about the consequences for their environment, labour and social governance. As concerns of China's resource quest spread well beyond the economic arena, scholars, security experts, government officials and politicians worry about prospect of resource wars, or Chinese control over global resources for political and security purposes. An important area of contention

on the implication of China's global resource quest is China's role in global resource governance. Given the size and rapid growth of China, together with its increasing assertiveness, China's global resource quest certainly presents a challenge to the established global order.

But the dynamics and the future impact of China's growing demand for water, food and energy on the architecture of global governance and the developing world are far from clear. To determine the extent to which China's rise will change the global resource governance, it is critical to analyse China's participation in the global trade and investment regime, climate change management, international laws, and its stance on development policy. Against this background, this workshop on China's global quest for food, energy and water and its global implications was organised by the China Programme of the RSIS' Institute of Defence and Strategic Studies (IDSS) on 31 October 2014.

This workshop brought together distinguished participants from China, Australia, United Kingdom, Japan, Central Asia and Singapore to present their views from both domestic and international perspectives on the multifaceted reality of China's resource quest with a focus on the three interlinked strategic resources, namely, food, water and energy as well as its global implications.

KEY ISSUES

During the workshop, several noteworthy points were raised.

- *China's resources scarcity:* With rapid economic development, the demand for energy, food and water has exceeded domestic supplies. Such resource shortages will continue to drive China's overseas quest for critical resources — food, energy and water. While energy will continue to be one of the major focus areas of China's overseas investment, food and water will feature prominently in China's overseas quest for resources.
 - *Food, energy and water nexus:* As food, water and energy systems are closely linked and inseparable, amid the negative impact of climate change, it is increasingly clear that a nexus approach is needed to tackle resource challenges. Otherwise, any effort to address the shortage of one resource might cause bigger problems for another. At the moment, at the study or research level, there is certainly recognition of the complex inter-linkages among energy, food and water security; yet at the implementation level, the single most important driver behind water, food and energy policy decisions is the concern over employment or number of people who will be affected. Sometimes this argument is also manipulated by the special interest groups.
 - *Geopolitics of resources:* China's growing interests in energy, food and water resources in regions such as Central Asia, Southeast Asia and Africa are progressively shaping its foreign policies and the geopolitics. Within China, the new Chinese creative intervention, led by overseas resource investment, is gradually replacing the six-decade-old Chinese principle of non-intervention.
- At transnational levels, China's growing presence in Central Asia and Africa is redefining regional and global power balance and China's foreign relations.
- *China's global resources quest:* While China's overseas resource investments are mainly driven by domestic resource shortages, China's state-owned companies' global expansion is largely driven by economic incentives. The notion of resource grab or resource diplomacy is exaggerated. Besides political and security considerations, China's overseas resource projects are also market-driven. Chinese companies are learning from their international peers and adhering to higher CRS standard.
 - *China in global resource governance:* China's participation in various multilateral resource institutions varies significantly across specific issue areas. The four normative principles that are consistently reflected in China's participation in global governance are: (i) sovereignty and sovereign rights over natural resources; (ii) mutual benefits and reciprocity; (iii) the right to develop; and (iv) common but differentiated responsibilities between developed and developing countries. It is plausible that China will be more proactive in shaping the global resource governance primarily because of its large appetite for raw materials and energy. However, it is still too early to assess whether and what kinds of principles China will push for, particularly if the range of resources is too broad to generate any coherent umbrella global regulatory mechanism. It is more likely that China will play an active role in individual issue areas and propose principles aligned to its long tradition of realpolitik in foreign affairs.

SESSION 1: CURRENT STATUS AND FUTURE PROSPECT OF CHINA'S RESOURCE SECURITY

The Essences of China's New Food Security Strategy



Dr Guoqiang Cheng
Senior Fellow and Director General
Department of International Cooperation
Development Research Centre of the State
Council China

Dr Cheng discussed the key aspects of China's food security strategy reforms. According to Dr Cheng, China's current food security strategy has four new important features. First, it revises the definition and boundary of food security and further clarifies the central focus of the food security strategy. Second, it clearly indicates the approaches and methods to achieve food security — relying on domestic production with moderate imports. Third, it is the first time the government has put more emphasis on the sustainability of agricultural development while safeguarding current food supply. Fourth, it merely provides a vague standard to measure grain food security.

Dr Cheng then moved on to discuss the policy contents of moderate imports. In his view, "moderate imports" means that China will carefully control and monitor the volume of

agricultural import. While moderate increase in agricultural import is necessary, China will try to prevent the negative impact of price shocks in the international market on its domestic production. The next point about diversification refers to the varieties of both imported agricultural products and importing channels. And the last point on "moderate imports" refers to the diversification of importing methods.

Dr Cheng also stressed that some additional aspects of "moderate imports" from both domestic and international perspectives need to be recognised. The first is that the volume of China's agricultural imports should not undermine the developing countries' food security. The second is that when importing foreign agricultural products, China needs to avoid the negative impact of price shocks of international market on domestic production and food market. Finally, agricultural imports should not harm domestic grain production. The basic approach is to rely on domestic resources to safeguard the country's food security and this will be determined by China's condition.

Chinese Energy Security Vulnerabilities



Dr Zha Daojiong
Professor of the School
of International Studies
Peking University
China

Dr Zha started his presentation by discussing several misconceptions about China's energy security. The first misunderstanding is that China has an energy shortage. According to Dr Zha, this is not true. According to China's official statistics, China's energy self-sufficiency rate stands at 91 per cent at the moment. The second is that the shale gas development in China is hampered by water shortages or the lack of technology. Dr Zha believes this is not true as well. Instead, the slow progress of shale gas is more related to digging cost as China has to dig two or three times deeper than the United States to produce shale gas. The third is that the purpose of Chinese investment abroad is to secure domestic energy supply. Dr Zha disagreed with this claim. According to IEA and BP statistics, only 10 per cent of oil produced by Chinese overseas investment is transported back to China. China's anti-corruption effort in the past half year against Zhou Yongkang and others shows that Chinese overseas investment in energy sector is more corruption-driven than security-driven.

Dr Zha then discussed four areas of vulnerabilities regarding China's energy security. The first is energy structure's inherent overreliance on coal. Coal production and consumption resulted in severe environmental challenges given the rapid depletion of high quality coal in China. However, the Chinese government's recent decision to subsidise domestic coal production and restrict coal imports would exacerbate the situation. Given China's extreme shortage of water and highly-intensive nature of coal production and consumption, by all measures, China ought to be importing coal rather than increasing domestic production.

Second, there are competing views in China regarding the issue of energy security, mainly between globalists and nationalists. The lack of reliable data also hinders our understanding of China's energy security situation. The third issue area is the potential of nuclear energy. After the Japanese nuclear incident, China paid more attention to the safety of its nuclear power plants by introducing the benchmark electricity price for nuclear power. Although this is good news for the development of nuclear power in China, the difficulty lies in educating the public and officials on the importance of building nuclear power plants inland; nuclear power simply cannot be limited

to coastal regions. Lastly, the role of the United States should not be omitted in the discussion of China's global energy security plans, and its plans for future energy supplies should take U.S. role into consideration. The possibility

of importing LNG from the United States in the future should not be ruled out. Also, China should consider investing in the United States' energy resources, such as natural gas resources in Alaska.

China's Water Security: Current Status, Emerging Challenges and Future Prospects



Dr Yong Jiang
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Dr Jiang's presentation aimed to assess China's water security, including its current status, emerging challenges and future prospects. Amid rapid socio-economic development, China faces an increasingly severe water scarcity. On the one hand, China's per capita water availability is low with an uneven spatial and temporal distribution which is inconsistent with the rising socio-economic need for water; on the other hand, inefficient use and water pollution have seriously damaged water systems and the environment, threatening China's sustainable development. The constraint of water resources on China's future development is considered a great challenge that needs to be addressed in the near future.

Dr Jiang attempted to characterise water security within an integrated biophysical, socio-economic framework that is fundamentally rooted in the concepts of exposure to risk and social resilience surrounding sustainable water use and in integrated water resource management. The framework for characterising water security is composed of five components: (i) socio-economic assessment of water availability; (ii) water use patterns; (iii) wastewater generation and treatment; (iv) water institutions and management; and (v) water quality.

The socio-economic assessment of water availability examines the biophysical condition of water resources within the social demographic context, shedding light on the potential of water-related risk while laying out the foundation and boundary for managing water resources for sustainable use. Given the water availability context, water use patterns and wastewater generation and treatment, we should examine current water

resource use and management, and the extent to which current water use patterns increase China's exposure to risk. Water institutions and management address water governance and administration and current issues, reflecting China's capacity to counter water risk. By analysing the dynamics of quality change across the country, the current status of water quality reflects the resilience of China's water institutions to water-related risk.

Despite such challenges, Dr Jiang feels that China can achieve its water security in the long run, given its strong political will, administrative control, policy initiative, continuous water management reform and financial commitment. However, the water issues will likely worsen before improving.

Particularly before 2030, the historical, structural and development-based causes of current water issues—emerging challenges of biophysical, social and economic changes, and existing management incompetency—can hardly be overcome within a short timeframe. The Chinese government could alleviate the extent and shorten the duration of degrading water systems and exacerbated water insecurity by adopting several measures: (i) strengthening compliance enforcement of water law and regulations; (ii) capacity building in good governance (particularly on integrated policy analysis and assessment based on valid data); and (iii) making a fundamental management shift from technique-dominated mind-set to a holistic, systematic and ecosystem-based approach focusing on both structure and non-structure.

Discussion

Before commenting on the speakers' presentation, Dr Yu Hongyuan discussed the notion of food, water and energy nexus in the context of climate change.

Dr Yu pointed out that climate change presents the world with a broad range of stakeholders from the water, energy and food sectors working to improve their understanding of the interdependencies in order to develop a comprehensive approach to counter common challenges. First of all, energy is fundamental to the prosperity and security of nations. However, any successful strategies to mitigate threats to human and national security posed by climate change must inevitably include controlling the access to fossil fuel energy. Evidently, preventing catastrophic climate change is actually an energy challenge which has caught the attention of the entire human race. Second, water serves a human basic need and is required to produce food. Given that roughly 70 per cent of the world's freshwater is used for agriculture, it is no surprise that food security and water availability are inextricably linked. Third, water is required to produce energy necessary for managing water for different uses. The two assets are strongly linked and the provision of both is necessary for stimulating growth

and improving livelihoods. Fourth, bioenergy growth has caused an increase in global food prices. Ethanol accounts for nearly three-quarters of global biofuels production and is dominant in North America and South and Central America; biodiesel is dominant in Europe and Eurasia. This rapid growth in biofuel production, occurring at a time when food prices are high and when pressure on natural resources is increasing, generated concerns about its potential impact on food security and the environment.

Dr Yu concluded that the nexus does exist, but climate change highlights the common implications for the three issues and demands a solution that requires close cooperation between the developed and developing countries. Increased demand for water, food and energy will in turn increase the demand for water, food and energy, particularly amid climate change.

A question was raised: Why can't China's food security problem be solved by global trade or marketisation? One speaker responded that though food is abundant right now in the international market, 800 million people are still suffering from hunger because global food security problem is not a supply but an

affordability issue. Marketisation and trade liberalisation work well for the food-exporting countries but for the poor developing countries, they cannot even afford to purchase food from the international market.

Further questions were raised regarding whether food security is a pseudo-proposition and whether food security issue is being politicised by the leaders so as to control the domestic audience. One speaker responded that food security might be a pseudo-proposition for the developed countries; but for the developing countries, it is a serious security issue. For instance, in the 2008 global food crisis, many developing countries experienced turbulences and social unrest caused by rising food prices. Even the Presidents of three countries were forced to step down. Therefore, it is the basic duty of the government to ensure sufficient, affordable and healthy supply of food to its people.

The discussant asked another question on China's potential for building a new energy security regime. One speaker commented that some scholars are increasingly demanding the government to establish a regional or global energy governance regime, and he is very skeptical of this proposal. He added that China is quite active in the current international energy regime, such as in the IEA.

A question was raised on the possibility of using market-driven approach to solve China's water problems. One speaker responded that from the economic perspective, it is a

good idea given many difficulties including institutional conflicts. China is working towards this direction. For example, China plans to raise water prices to ensure efficient water consumption, but it cannot be the sole approach.

On the linkages between food, water and energy, one participant was curious to know whether the Chinese government's effort to address one issue can actually cause some negative impact in another area. For instance, to boost domestic food production via diverting water from the southern part of China to its northern part might result in contradictions. Is the central government aware of the different priorities and conflicting policy outcomes? Is there coherent planning at the top level? A speaker responded that if one looks at the study reports, there is certainly coherent planning, yet at the implementation level, the single most important driver behind the policy decisions on water, food and energy is concern over employment or number of people who will be affected. Sometimes this argument is also manipulated by special interest groups.

Further questions were raised on the impact of China's anti-corruption campaign on the country's overseas energy investment and conditions that will lead Chinese companies to reinvest in overseas energy projects again. One speaker responded that while it is not clear when the anti-corruption campaign will end, there is growing recognition that the business-as-usual model is wrong because it goes against national interests.

SESSION 2: CHINA'S POLICY ON TRANS-BOUNDARY RIVER MANAGEMENT

Mekong River Trans-boundary Management Issues in the 21st century: Yunnan Province and its Southern Neighbours



Dr Lynn Thiesmeyer
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of Environmental Information
Keio University
Japan

Dr Thiesmeyer pointed out that China's environmental policies as well as its environment can be better understood within the ASEAN context of environmental and economic integration. In a geopolitical system where the nation-state is still the supreme unit of governance, the larger region's demands on the environment and its resources do not easily conform to the expectation that the individual nation-state will promote, and respond to, environmental issues on its own responsibility. In other words, environmental issues do and have always crossed borders.

Dr Thiesmeyer's presentation focused on southern Yunnan Province and its neighbouring regions in Southeast Asia, where both the projects and the policies on the Nu Jiang (Salween) and the Lancang rivers have immediate and serious impact on their downstream neighbours who place demands on and invest in resource projects originating from China. The case studies presented here

come from Jinghong in the Xishuangbanna (Sipsongpanna) area of China and the northern Shan State of Myanmar, where river and reservoir projects have brought national security into conflict with human security among the populations involved.

The most urgent trans-boundary environmental issues in this sub-region involve large-scale dams, both constructed and planned, as well as other energy projects (such as the Myanmar-to-China oil and gas pipeline) which have so far served a few at the expense of many. Environmental damage, land loss and livelihood loss from these projects have affected millions of rural people on both sides of the border and also caused prolonged and large-scale political unrest and violence among those who lost their livelihoods. The new question that trans-boundary water mismanagement brings out, then, is no longer whether the environment must be sacrificed for economic development, but whether human security should be sacrificed for national political and resource security.

Water Security Challenges in the Context of Sino-Russian and Sino-Kazakh Trans-boundary Relations



Dr Sergei Vinogradov
Senior Lecturer at CEPMLP and Director
of the LL.M. Programme
University of Dundee
U.K.

Dr Vinogradov noted that water security has become a new global and regional challenge which lies at the heart of other security concerns—environment, food and energy. The significance of the water-food-energy-climate nexus has become increasingly evident in Asia and other regions of the world. This most densely inhabited region experiences growing competition over limited trans-boundary water resources. The issue of control over waters shared by different nations has the potential to cause or aggravate conflicts between the states using them. Dr Vinogradov believes that in order to prevent such conflicts, it is important to strike a balance between the competing interests of different states sharing an international watercourse, while also taking into account environmental requirements of ecosystems dependent on them. This objective can be achieved only through inter-state cooperation driven by appropriate legal and institutional frameworks including various binding and “soft law” instruments implemented

at different levels—global, regional and bilateral and governing diverse substantive areas—from water resources per se to the protection of biodiversity, desertification and climate change.

Rapid economic development in Northeast Asia has already put serious pressure on available water resources, including those belonging to some major trans-boundary river basins shared by China and its neighbours to the north, primarily Russia and Kazakhstan. In particular, the Amur River which forms the border between China and Russia is the longest boundary watercourse in the world, and has for years served as the focal point for bilateral cooperation in various fields: navigation, fisheries and power generation to water resource utilisation and ecosystem protection. Russia and China owing to their long history of water cooperation are bound by numerous bilateral agreements and have formed numerous joint institutions. While the Sino-Russian interaction related to the management and use of trans-boundary water resources has gone through ups and downs generally following political relations between the two states, their water-related cooperation has become increasingly

active over the last few years. However, growing concerns over trans-boundary pollution and the quality of shared water resources call into question the effectiveness of such cooperation. New measures are needed to achieve better coordination in water resources management.

In a similar vein, as an upstream country in a number of river basins shared with Kazakhstan, including the Irtysh and Ili rivers,

China has engaged in bilateral relations with the latter on a number of water-related issues. Their cooperation has resulted in several bilateral agreements and joint commissions primarily focused on water quality in trans-boundary watercourses. While there is considerable success in creating an adequate legal and institutional framework, attention should be given to the outstanding issue of scant water resources.

Analysis on China's Trans-boundary River Management and Relevant Paths



Dr Li Zhifei
Associate Research Fellow
National Institute of International Strategy
Chinese Academy of Social Sciences
China

Dr Li stated that China is one of the countries with many trans-boundary rivers. The trans-boundary river issues that emerged in recent years mainly concentrated on water pollution and protection, water resource allocation, utilisation and development. The intensive outbreak of trans-boundary river disputes between China and neighbouring countries highlights China's three major problems relating to trans-boundary river improvement:

imperfection of management institutions, loss of legal protection and low degree of cooperation with neighbouring countries. The four main factors that lead to imperfect trans-boundary river management include (i) lack of trust; (ii) differences in interest demands; (iii) politicisation of trans-boundary river problem for territorial issues; and (iv) interference from countries outside of the region in China's border affairs. To tackle trans-boundary river improvement disputes with neighbouring countries, China as an upstream country should take the initiative to adopt several measures: (i) establish a comprehensive trans-boundary river improvement department; (ii) improve the

mechanism of management and cooperation with neighbouring countries; and (iii) promote the formulation of relevant laws and regulations regarding trans-boundary river improvement.

Water serves the basic needs of human survival; thus, development of water resources and water resource security becomes an important part of national security. The protection and development of the water resource of trans-boundary rivers has long been a sensitive and complex issue. With the increase in demand for water to ensure national security and promote economic development, trans-boundary rivers' water resources for the countries in the river basin become increasingly important. For China and most of its neighbouring countries, "the water resources security and utilisation is not only an issue of security of resources and environment but also a major strategic issue related to national economic and social sustainable development and long-term stability".

Now, trans-boundary river disputes have become an important non-traditional security issue affecting China's relations with surrounding countries. Effective resolution and prevention of trans-boundary river disputes have become very important in maintaining peace and stability in the region. With climate change, other problems such as population

growth, economic development and aggravated greenhouse effect, water demands and competition between countries will intensify, so it becomes critical to improve the management of trans-boundary rivers. Historical practices have proved that cooperative management is a rational and win-win choice which not only leads to deeper cooperation in many areas, but also enhances overall regional cooperation. Besides, this extends the degree and range of benefits to countries far beyond the benefits of water cooperation itself.

China and its neighbouring countries have structural differences in the use of trans-boundary rivers, and it is very difficult to balance interstate interests. As an upstream country, China should consider engaging in regional affairs as a responsible big power that advocates enhanced systematic management in water sharing, and also assumes corresponding regional responsibilities. Following the new central government of China's proposal for the diplomatic concept of "benefiting surrounding countries", we can expect China and its neighbours to jointly address the security challenges caused by trans-boundary river disputes, improve the ability of trans-boundary river management, and treat trans-boundary rivers as the link to promote regional peace and development. In essence, it is an important manifestation that China provides necessary public products for surrounding countries and regions.

Discussion

In response to a participant's question on the most compelling security challenge for the Mekong sub-region, the speaker answered that the human security issue among local constituencies is hitting a point where it can no longer be ignored. The local people have become active political stakeholders and are influencing local policies that will affect foreign investors as well. A participant enquired on the notion of water security and good water governance. The speaker responded that water security is defined as the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water while good governance in the river basin is primarily about law and institutions.

A participant commented that the ministry of foreign affairs plays a key role in the management of China's trans-boundary water management issue. Another participant added that in many other countries, the Ministry Of Water Resources takes charge of trans-boundary water resources negotiation; in China, it is the Ministry of Foreign Affairs

which plays the leading role, whereas the Ministry of Water Resources plays a supporting role.

On the motivating factors behind China's different approaches towards cross-boundary river management with regional countries, the speaker replied that bilateral ties between China and regional countries most greatly affects China's policy on cross-boundary river issues with other countries. The other speaker also added that power balance between countries and the location also largely influence a country's approach to cross-boundary water resources.

Another question was related to the role of local government in affecting the Chinese government's approach to cross-boundary river management. A speaker responded that in the Heilongjiang Basin, there is a model of the network of local government cooperation. Quite a number of local governments and agencies closely cooperate with each other through local government arrangements.

SESSION 3: CHINA'S ENERGY GOING-OUT

China-ASEAN Energy Relations: From Cooperation to Competition



Dr Zhao Hong
Senior fellow
Institute of Southeast Asian Studies
Singapore

Dr Zhao pointed out that as China expanded its FDI to Southeast Asia after the global financial crisis in 2008, China-ASEAN energy cooperation reached a new level. However, while some momentum exists for continued cooperation and as energy cooperation broadens China-ASEAN bilateral relations, several factors are pushing the region towards competition. As China continues its resource “grab” in Southeast Asia, many external observers are concerned that China might replicate the “neo-mercantilist” sort of strategies that Japan adopted during its high-growth phase. This paper is an attempt to review China-ASEAN energy cooperation and understand whether China-ASEAN energy ties will shift from cooperation to competition, and how this will affect the overall China-ASEAN relations.

As China follows its growth path, and as its resource security concern intensifies, the Chinese government encourages FDI as a means of securing resources. This has in fact opened large-scale development opportunities in the resource sectors, especially the natural gas sector in Southeast Asia. China intends to invest more in natural gas sectors in Indonesia, Myanmar and Malaysia. Southeast Asia is richer in natural gas than in oil. Gas, as a key export from Indonesia, Malaysia, Myanmar and Brunei, promises to have a central role in the domestic energy mix of countries in the region. ASEAN needs significant investment for related infrastructures to bring forth the projected amount of oil, gas and coal production. Without new investments or new exploration for gas fields, the supply surplus over demand is expected to narrow and even diminish by 2030. Given the importance of China’s capital, technology and big market, China will remain as ASEAN’s major energy cooperation partner. More importantly, China has maintained close relations with ASEAN not only in the energy field but also

in international politics, economic cooperation and business transaction. With the emergence of various energy challenges in the region, ASEAN's importance for international markets will enhance the strategic importance of China-ASEAN relations. The potential of energy resource cooperation between China and ASEAN countries is high and important for China's energy security.

Nevertheless, Dr Zhao warned that though the relationship between China and ASEAN has thus far generally proved to be mutually beneficial, Southeast Asians are still uneasy about the nature and impact of the bilateral relationship. The extent to which some ASEAN countries such as Indonesia and

Myanmar will continue to satisfy China's resource hunger will depend on whether domestic constituencies in these countries, primarily labour unions, organized business and civil society formations, feel that their concerns about China's influence on their political economy are being addressed. These concerns include the continuing impact of Chinese FDI on local jobs and environment, the erosion of the competitive advantage of domestic companies (in local and regional markets) by the growing presence of Chinese companies, the skewed trade relations, and perceptions that expanding commercial relations have exerted baleful influence on these countries' foreign policy.

China and African Fossil Fuels



Dr Ana Cristina Alves
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School of Human and Social Sciences
Nanyang Technological University
Singapore

Dr Alves commented that the food-energy-security nexus provides a new explanation for resource competition, inter-state relations and conflict in the African region. In recent years, China has played a major role in African affairs by increasing its volume of trade, investment and official development assistance. China has pursued bilateral agreements with a number of African countries to cooperate in energy development. She seeks to examine the multifaceted China-Africa relations in the light of this cross-sectorial nexus, and explore potential implications on global climate change.

For decades, Africa's mineral resources remained underexplored owing to a variety of reasons including low commodity prices (average \$25 barrel of oil in 1980s and 1990s), inadequate investment, poor infrastructure, geographical obstacles and political instability. In the past decade, this situation has been

changed considerably by the gradual stabilisation of the continent combined with commodity price surge due to strong demand from emerging economies. The resource boom largely explains Africa's improved economic performance, averaging 5–6 per cent GDP growth rates in recent years, the exponential growth in its FDI intake since 2000, as well as the high resilience of Africa's economy amid global economic downturn.

Dr Alves pointed out that Africa is also becoming an increasingly important player in global natural gas market, accounting for 6.4 per cent of global production in 2014. Nigeria sits on the largest known African deposits (5.2 trillion cubic metres, tcm), followed by Algeria (4.5tcm), Egypt (2tcm) and Lybia (1.5tcm). Although African natural gas production is presently dominated by Algeria, Egypt, Nigeria and Tunisia, new producers are coming on stream in Southern Africa (i.e. Equatorial Guinea and Angola) along with the discovery of massive natural gas reservoirs off the eastern coast of the continent, namely offshore Mozambique and Tanzania, as well as giant shale gas fields in South Africa.

With the new shale gas finds in the United States and northern Africa's gas supplying most of Europe's demand, most of southern Africa's gas from the east coast targets emerging economies in Asia. To complete the picture, Africa also holds significant coal reserves. Coal still accounts for nearly a quarter of the world primary energy matrix and the bulk of global electricity generation (41 per cent in 2006). African deposits are mostly located in the southern region. South Africa is the largest producer (3.8 per cent of global

production) and holds the largest reserves on the continent (30 billion tons). Although most of it is consumed internally, South Africa exports a quarter of its production mainly to Asia (60 per cent), with China as its main client. African coal reserves are bound to double in coming years as the Zambezi valley reservoir becomes better known. Mozambican deposits alone are estimated at over 20 billion tons and expected to produce around 100 million tons per year in 2013.

***China's Energy Interests in Central Asia and Russia —
Symbiotic Distrust: Balancing Cooperation and Confrontation***



Dr Alessandro Arduino
Co-director of the Security & Crisis
Management Program
Shanghai Academy of Social Science
China

Dr Arduino provided a comprehensive assessment of China's energy interests in Russia and Central Asia and the impact on foreign relations between China, Russia and Central Asian countries. Dr Arduino commented that China's economic might and rise to global power status have led to a continuous renegotiation of power with

other leading countries. In the Central Asian arena, Russia is involved and renegotiation is played at different levels ranging from gas and oil price discussion to a broader political and security framework. Since China became a net importer of oil in the nineties, both countries' foreign policies became deeply linked to energy provision and supply, in which Central Asia is a focal point. Beijing and Moscow symbiosis is intertwined with Russian economy's progressive pivot on energy exports and China's increasing need for reliable energy source. Local proximity to Central Asian and Russian Eastern Siberian

natural gas and oil resources well suit Beijing's energy security policies. At the same time, historical mistrust harboured by local populations towards the Chinese is actively hindering technical and financial decisions related to the development of new pipelines. While Russian energy resources meet Chinese requirements, the economic evaluation of future partnerships and trade cooperation programmes has to be read essentially through the political lenses of volatile energy diplomacy. During the last decade, Central Asian countries have become progressively attracted under the Chinese economic sphere of influence, while Russia still considers Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan as its own "backyard". Furthermore, the role of China's "banking diplomacy" elevated the without confronting Russia in the regional security arena.

Dr Arduino believes that while multilateral regional organisations and consulting mechanism like the SCO and CICA are poised

to overwhelm short-term friction, long-term natural resource scarcity, power balance shifts and centuries-long mutual distrust are going to increase the chances of confrontation. Dr Arduino stressed that regional stability could be achieved by promoting a balanced development between private and state sectors by enacting various structural economic reforms that facilitate private access to credit, human capital development, banking system efficiency and transparent public spending. The Chinese investment and infrastructure initiatives could be a cohesive factor in promoting regional stability only if China provides a close scrutiny over its state-owned companies to impose higher CSR standards. Dr Arduino concluded his presentation by warning that as security and risk management issues are set to arise during China's economic penetration of Central Asia, the region will be a testing ground not only for China's westward policy but also for the new Chinese creative intervention that is gradually replacing the six-decade-old Chinese principle of non-intervention.

Discussion

The discussant raised question on whether scholars have exaggerated the energy security challenges faced by China. The speaker disagreed and argued that the concept of energy security has been broadened. Energy security not only covers supply and demand aspects, but also covers climate change and air pollution, among others.

Responding to the question on how to tap the complementary relationship between oil producers and consumers, the speaker said that in the case of Southeast Asia, China can learn a lot from Japan and South Korea whose companies usually pay much closer attention to the needs of the local community, civil society and cultural interest groups. Instead of buying oil and gas resources directly, Chinese investment in infrastructural projects can create more clout in the supply chain for China.

On the question on whether infrastructural loan for energy resources can be a good model for cooperation between China and other countries, the speaker noted that in theory, infrastructure loan approach can benefit both countries but in Africa, it does not always work out primarily because of the very weak African institutional framework.

A participant asked a question on whether it is feasible for China to invest in Southeast Asia's energy resources given the region's extreme diversity and conflicting interests and priorities. The speaker replied that while ASEAN has 10 countries and each country has a different energy situation, there is potential for China to cooperate with countries like Indonesia, Myanmar and Vietnam on energy resource development.

On the notion of resource diplomacy or resource grabs, the speakers disagreed

that in Southeast Asia and Africa, China is grabbing local energy and food resources. Instead, they believe that China is learning to use the market mechanism to cooperate with regional countries. In the case of Southeast Asia, civil society is quite well developed and external powers are deeply involved, hence it is very difficult for foreign countries like China to gain control over local resources. A lot of reports on China's land grabbing activities or resources grab are biased and misleading.

A participant was curious to know the potential of using infrastructural projects such as projects via the New Asia Infrastructure Development Bank in boosting energy cooperation with Southeast Asian countries. The speaker responded that cooperation on energy-related infrastructural projects is very promising for China and Southeast Asia. But the complexity of geopolitical issues in Southeast Asia hinders the implementation of good infrastructural proposals.

On the issue of inadequate trust among China, Russia and Central Asian countries, a question was raised on whether Russia still tries to have the veto power on large resource projects in some of the Central Asian Republics. The speaker disagreed. With China's growing influence and stakes in Central Asia's energy resources, Russia is learning to cope with China's presence by means of strengthening economic ties with Central Asian countries. On Sino-Russian relations, one participant questioned about the liability and unpredictability of Russia. He responded that while every country has its political agenda, at the moment and in the foreseeable future, China and Russia can be two countries that "sleep very comfortably in the same bed" as strategic considerations far outweigh possible elements of distrust.

SESSION 4: CHINA'S GLOBAL QUEST FOR FOOD

China's Food Security: Emerging Challenges from Climate Change

Dr John Wong
Professorial Fellow and Academic
Advisor; and
Dr Chen Gang
Research Fellow
East Asian Institute
National University of Singapore
Singapore

Dr Wong and Dr Chen discussed the challenges posed by climate change to China's food security both in the short term and in the long term. Dr Wong and Dr Chen pointed out that climate change will no doubt undermine China's already precarious state of food security. The extent of predicted impact is highly dependent on the categories and geographical locations of the crops, the range of change in the yearly temperature and precipitation, variations in extreme weathers, the CO₂ fertilisation effect assumption and adaptation abilities. The affluent Chinese diet shift from basic staples to livestock-based food will constrain the country's food-output capacity and availability over the coming decades, aggravating China's food security situation already under the threat of climate change.

Dr Wong and Dr Chen argued that China's grain production will still be severely affected by natural disasters. However, as compared to the long-term decline in average grain yields associated with climate change, the short-term scenario is likely to be characterised by more fluctuation in grain output caused by more short-term weather changes. Output fluctuation also carries serious economic and social implications. According to basic economic theory, the demand and supply of food is highly inelastic; thus a small shortfall in food supply on the market—assuming no large stockpiling—can cause a disproportionate

hike in food prices. Given that food items carry a high weightage in the CPI (consumer price index) of developing countries, including China, these countries should brace themselves for more urban inflation in future as one of the more immediate consequences of climate change. Nonetheless, Dr Wong and Dr Chen argued that China's agricultural self-sufficiency is unlikely to be jeopardised by the long-term climate change impact.

In the long run, however, the climate change trend coupled with increase in extreme weather disasters could weaken China's precarious food self-sufficiency rate, given increasing soil/water contamination and food consumption. Chinese officials would be prudent to approach the problem from the least favourable set of premises because the trajectory of the climate change effect is still not well understood. Dr Chen believes that to cope with any food security challenge arising from global warming, China has to rely on domestic adaptation measures as well as increased food imports and overseas agricultural investment.

Dr Wong and Dr Chen reiterated that the climate change will no doubt continue to exert significant pressure upon China's already precarious state of food security. Increasingly affluent Chinese diet shift from basic staples to livestock-based food will constrain the country's food-output capacity and availability over the coming decades, and further aggravate China's food security situation which is already under the threat of climate change. To cope with this challenge in the context of global warming, China will have to increase food imports and pursue an active overseas investment strategy in those sectors where China cannot fulfill food self-sufficiency domestically.

China's Global Quest for Food: The Role of the United States



**Mr Zhang Hongzhou (pictured)
Associate Research Fellow; and
Dr Li Mingjiang
Associate Professor and
Coordinator China Programme
RSiS
Singapore**

Mr Zhang and Dr Li discussed the role of the United States in China's global agricultural strategy. With a paradigm shift in China's food security strategy, China aims to better utilise international agricultural resources. As China has to rely more on foreign agricultural resources to feed its 1.4 billion people, there is heated debate over the definition of the role of the United States—the country's biggest food supplier—in its global agricultural strategy. On the one hand, Chinese leaders, at least rhetorically, intend to further improve agricultural ties with the United States. On the other hand, as China's food dependence on the United States grows, conservative scholars and even some government officials highlighted the negative impact of overreliance on the United States for food. Some claim that cheap U.S. agricultural imports will destroy China's domestic agricultural sector while others feel that reliance on U.S.

food imports will pose a threat to China's national security.

Mr Zhang and Dr Li disagreed with these statements. Instead, they argue that economically, China's agricultural trade and other forms of cooperation with the United States bring far more benefits to both countries, and there are bright prospects for closer cooperation in the future. From the political and security perspective, the power, food confers is much less than meets the eye. The fear that the United States could use food as a potential source of political or diplomatic leverage power against China is groundless.

Closer Sino-U.S. agricultural ties are critical for China's food security. A thriving and healthy agricultural relationship between the two countries can keep the overall Sino-U.S. relations sailing "upright" amid stormy waters. Therefore, Mr Zhang and Dr Li advocate that while diversifying food import sources, it is important to both invest in foreign agricultural resources in developing countries in particular, and groom China's international agribusiness. Strengthening agricultural ties with the United States should be an integral part of China's global agricultural strategy.

China's Agricultural Trade and Investment in Central Asia



Dr Oybek Makhmudov
Chair of International Affairs and
Senior Lecturer
Strategic Management, International and
Regional Organization
International Politics
Higher School of Business, Tashkent
Uzbekistan

Dr Makhmudov's presentation focused on the environment of the Central Asian agro economy and the role of external investment actors in the region. Dr Makhmudov stated that with more than USD 2 trillion of foreign exchange reserves, China has enough resources for securing its own food security via investing in neighbouring regions. Through China's new geopolitical diplomacy, Chinese companies receive government support in gaining access to overseas farmland in exchange for much cheaper Chinese agro-machines, complex service and trade. Such strategies are being implemented in Asia and countries all over the world including Kazakhstan and Tajikistan, Philippines, Vietnam and Africa. Chinese companies are leasing land and building up

farms to grow crops. Most of China's offshore farming is dedicated to the cultivation of rice, soya beans and maize, along with biofuel crops like sugar cane, cassava or sorghum. Recently in the Central Asia market, there is notable increase of hybrid Chinese rice, fruits and vegetables which could gradually reduce the consumption of indigenous food products.

Under the new Silk Road Economic Belt strategy, China will continue to do what it has been doing in the past years with no fundamental changes, but with more energy, creativity, flexibility in operations, a broader perspective and a more open attitude. Dr Makhmudov concluded that because China and Central Asia have common problems in ensuring food and water security, bilateral and multilateral cooperation would be needed to address food and water challenges. Nonetheless, what should be noted is that China and Central Asian countries have different and fragmented approaches to developing the agricultural sector.

Discussion

The discussant Dr Paul Teng commented on the notion of food security. Teng stressed that it would be myopic to talk about food availability without a more holistic consideration of food issues. Food security needs to be considered from the following dimensions: (i) physical access to food which comprises transport infrastructure, logistics, loss and waste prevention technology, policies and regulations for trade; (ii) economic access to food which comprises price stabilisation techniques and schemes, safety nets, mandated food right laws; (c) food utilisation which comprises nutrition (biofortification, supplemented feeding, proper diets) and food safety; and (d) stability which comprises supply risk management techniques, insurance, and others.

Dr Teng added that much work has shown that food security at the household and national level can only be achieved if all of these dimensions are addressed. Food security is a complex phenomenon today and requires a multi-dimensional, multi-sectorial approach to address it at the national level. China's global quest for food needs to be balanced by effective management of other dimensions linked to natural resources: the most important of which are water, land and biodiversity.

On climate change, a comment was made on the effects of climate change on food security. Many examples of crop yield reductions are gleaned from specific disaggregated climate change events, and most of these are congruent with those reported in many estimates made within China and by international groups. Aspects that are omitted include transport, post-harvest losses and nutrition value of food and food safety—all of which are also subject to climate change.

On the issue of GM food, a participant made a comment that there is no scientific evidence that GM food is a safety issue. On the contrary, there is much evidence on the safety of GM food. Whereas extremist environmental groups have been successful in scaremongering GM food, the mainstream agricultural and food scientists strongly support GM technology and have accumulated a pool of evidence on its safety and benefits to society.

With reference to U.S. role in China's food security, a participant made a comment that the U.S. food-growing region remains one of the world's most sophisticated, productive and reliable source of food surpluses to feed other world regions. It is also the most open to new technologies and modern scientific approaches, and it is generally agreed that the United States will remain in this premier position despite challenges from South American giants like Brazil.

In response to the question on whether the whole GM debate in China is being exaggerated, the speaker admitted that the official attitude towards GM food is quite clear, but the general public remains quite skeptical of GM food, and the military is one of the leading forces behind the anti-GM food movement in China.

On the issue of China's longstanding 95 per cent grain self-sufficiency rate, a participant commented that China has reformed its food security strategy in December 2013. And the notion of 95 per cent self-sufficiency rate has already been abandoned, and China is determined to better utilise international resources to feed its people.

SESSION 5: CHINA'S ROLE IN GLOBAL RESOURCE GOVERNANCE

China's Quest for Low-carbon Power



Dr Chen Gang
Research Fellow
East Asian Institute
Singapore

Dr Chen noted that as China's economy matures, its relative dependence on electricity increases, implicating that a higher percentage of primary energy will be converted to electricity generation and consumption. In the global climate change context, mitigation imperatives which are complicated by public health concerns over urban smog and PM 2.5 have pushed the Chinese government to cut reliance on highly polluting coal-fired power plants in order to develop non-fossil fuel based low-carbon-electricity generation. Considering the exorbitant costs and risks involved in developing low-carbon energy, China's great leap forward in promoting non-fossil fuels has been associated with the government's massive subsidies to the emerging low-carbon-electricity industry. Nevertheless, in terms of promoting the production of different types of low-carbon alternatives, the government has been adjusting its policy prioritisation from time to time, with variations in targeted growth scopes, subsidy amount, on-grid tariffs and other financial incentives for various low-carbon power sectors, which will profoundly change the current structure of electricity market in the long run.

Dr Chen argued that compared with democracies, the one-party regime in China faces less resistance from civil society in its push for environmentally-controversial hydropower and nuclear mammoths. Apart from the hydro and nuclear options, China does not really have many environmentally sound and safe choices in such a carbon-constrained era to meet its voracious electricity demand driven by breakneck economic growth. After decades of cost-benefit calculations and debates, the Chinese government has decided to ignore most of the objections and carry on the hydropower and nuclear power renaissance for a good low-carbon solution to the urgent power supply shortage.

Low-carbon power producers gained comparative advantages over conventional power generators amid changes in domestic industrial and market circumstances when China's economy underwent transitions to state capitalism. Facing a downturn external renewable equipment demand and severe internal overcapacity, the government originally targeted most subsidies to help domestic manufacturers of wind turbines and solar panels and later shifted to a new stage of domestic consumption whereby it stimulated indigenous renewable power generation to absorb redundant capacity. The Chinese model of state capitalism, prominently featured

in the country's two decades of meteoric economic growth, has played a crucial role in reshaping domestic industrial and market circumstances that help low-carbon power producers to gain comparative advantages over conventional power generators. Facing a downturn external renewable equipment demand and severe internal overcapacity, China's state capitalism has been forced to evolve from a mercantile stage (i.e. targeting most subsidies to help domestic manufacturers of wind turbines and solar panels) to a new stage of domestic consumption (i.e. stimulating indigenous renewable power generation to absorb redundant capacity). After undergoing government-initiated structural reforms, China's increasingly competitive and fragmented power industry is still highly regulated by the state. This is achieved by means of imposing an on-grid electricity tariff to secure profit margins and ensure the survival of various power generators. As compared to major hydropower and nuclear power corporations that are state-owned, wind and solar power plants (mostly small and medium-sized generators with diverse ownership) are vulnerable to fluctuation in power pricing, production cost and demand conditions. Government plans, which are more precise in predicting future development trajectories of hydro and nuclear power, often lag behind unexpected proliferation rates of wind and solar power plants that face higher supply and demand elasticity given conditions of government subsidies, feed-in tariffs and production cost slump.

China has put in place a four-level wind power tariff system for regions with different

meteorological conditions in 2009. In terms of solar PV power, China applied a unified nationwide feed-in tariff; the government applied the same approach to wind power by formulating diverse on-grid tariffs targeted at regions with varied meteorological characteristics. When promoting low-carbon power generation, the Chinese government needs to quickly respond to new industrial and market conditions as well as environmental concerns. Non-fossil fuel policymaking should take into account the following factors: emerging trends that are driven by more sophisticated energy markets, volatile energy production costs, reassessment of innate geographical conditions and environmental impact, and increased attention to supporting domestic industries.

Dr Chen concluded that as a way to safeguard national energy security in a new carbon-constraint context, China's strategy of promoting different types of low-carbon alternatives is closely related to its inherent geographical and meteorological conditions, overexpansion of domestic manufacturing industries, technological competitiveness and growing environmental awareness. This strategy is bound to cause spill-over effects on a global scope. China is also helping more countries, especially in the developing world, to develop large-scale low-carbon power projects like hydropower, wind power and nuclear power stations that are in real need of capital, technology and equipment from the Chinese side.

Examining the Rules of International Law that Govern China's Trans-boundary Water Resources — 'The Legal Space around the River'



Dr Patricia Wouters
Founding Director
China International Water Law Programme
Xiamen Law School
China

Dr Wouters examined the rules of international law that govern China's trans-boundary water resources—'the legal space around the river'. She argued that China's adherence to "Five Principles of Peaceful Co-existence", a cornerstone of its foreign policy, provides insights to its general approach to international law, including international "water" law that governs trans-boundary waters around the world.

Located upstream on the majority of its trans-boundary watercourses, China shares water resources with most of its neighbours. Dr Wouters noted five major drivers affecting shared water vulnerability in China: (i) changes in physical conditions affecting the availability of water; (ii) competing objectives between economic development and ecological conservation; (iii) lack of emergency-response mechanisms; (iv) unsound administrative

institutions; and (v) shortcomings in the development of regional cooperation based on trans-boundary waters. Dr Wouters also stressed the importance of understanding the role of international law in addressing these vulnerabilities.

China's approach to international law has been influenced by evolution of the notion of law in that country. In addition, "Five Principles of Peaceful Co-existence" remain at the heart of China's international diplomacy and are reiterated in its continued overt support for the United Nations. These notions are the foundation for China's trans-boundary water diplomacy and state practice. On China's trans-boundary water state practice, Dr Wouters highlighted China's limited engagement with the two overarching global water conventions concluded under the auspices of the United Nations—the 1997 UN Watercourses Convention (UNWC) and the 1992 UNECE Trans-boundary Water Convention (UNECE TWC). Instead, China has pursued a bilateral approach to its trans-boundary water regimes. China is party to some 50 treaties governing or related to its shared trans-boundary water

resources (Annex I). All trans-boundary water-related agreements are bilateral (one-county one-river approach), despite the fact that many of them relate to multi-state river basins.

Dr Wouters concluded that China's role as an emerging economic leader and as a global actor with an evolving and increasingly

coherent foreign policy appears to be already influencing its approach to trans-boundary water issues. Besides, cooperation in trans-boundary water law is an elastic concept that stretches to meet the many demands of sovereign nations—individually, collectively and supranationally.

China in Global Resources Governance: A Norm-taker or a Norm-maker?



Dr Wu Fengshi
Associate Professor
China Programme
RSIS
Singapore

Dr Wu discussed the normative dimension of China's global search for resources in her presentation. Wu began her presentation by providing an overview of global governance related to natural resources. She believes that global resource governance is highly fragmented, and adds three contributing factors to the current status of global resource governance. First, most global institutions related to managing specific resource at the global level have rather independent, diverse organisational origins and development histories; therefore, there are few bridging mechanisms across issue areas. Second, given the pre-existing global regimes in trade,

environment and beyond, each handles some of the resource-related problems, or some aspects of them, and this in turn makes new regulatory formation undesirable or unnecessary. Third, the most challenging problem embedded in global resource governance is the presence of conflicting, and potentially conflicting, governing principles.

Dr Wu then discussed China's participation in global governance over natural resources. China's participation in various multilateral resource institutions varies according to issue areas. In some issues, China's presence and activities remain small; in others, such as climate change, China represents all developing countries and serves as a decisive force in reaching international agreements. Regarding conventional energy and fossil fuel, it is fair to say that China's formal participation remains highly limited. China is not a member

of either OPEC or IEA, two leading and competing agencies in world oil governance. Rather, China is a dialogue partner with OPEC and only a non-member collaborator with IEA. China's overall input and influence in global water governance is highly incomplete. In comparison, China's participation in global governance over trading agricultural goods and banning illegal trade of endangered species is far more active.

Lastly, Dr Wu pointed out four normative principles that are consistently reflected in China's participation in global governance: (i) sovereignty and sovereign rights over natural resources; (ii) mutual benefits and reciprocity; (iii) the right to develop, and (iv) common but differentiated responsibilities between

developed and developing countries. These are not mere foreign policy strategies but doctrines that China pronounces in the international area. Dr Wu concluded that it is plausible that China will be more proactive in shaping up the global resource governance primarily because of its large appetite for raw materials and energy. However, it is still too early to determine whether and what kinds of principles China will push forward, particularly if the range of resource is too broad to generate any coherent umbrella global regulatory mechanism. What is more likely is that China will play an active role in individual issue areas and propose principles that align with its long tradition of *realpolitik* in foreign affairs.

Discussion

A participant wanted to know whether China's future energy imports will increase given its rising energy demand. The speaker noted that it is easy to understand China's 90 per cent self-sufficiency rate on energy because of the following factors: (i) China's energy consumption is primarily dominated by coal consumption; (ii) China's domestic coal production has been sufficient to meet demand and (iii) China's main energy import is oil.

There was discussion on whether it is practical for China to focus on non-fossil fuels due to factors like production cost and rapidly rising demand and whether it is more practical for China to focus on cleaner fossil fuels such as natural gas. It was agreed that natural gas is very important. China is increasing its natural gas imports since natural gas is a low-carbon fossil fuel and plans to increase the share of natural gas in its energy mix from 5 per cent to 10 per cent in the next few years by imports. The cost remains an important factor in solar power; however, with the continuous drop in solar panel price and technological innovation, the production cost will be reduced and solar power may have brighter prospects in China's energy market.

A participant asked a question on the effectiveness of international law in shaping

or even constraining China's hydro policies and behavior. The speaker commented that trans-boundary water treaties need to be examined in context and there is incremental hydro diplomacy happening on behalf of China, evident from three aspects. First, under the umbrella of multilateral environmental agreement, China is very active. Second, in terms of foreign policy, China has been consistent in upholding the "Five Principles of Peaceful Co-existence". China is learning to be a good neighbour and it is gradually happening. Third, international law requires countries to cooperate and China has consistently embraced this concept in some instances.

On the issue of biofuel, the speaker replied that a few years ago, the Chinese government was supportive of the development of biofuels, but as food security concern rises, the development of biofuel was suspended.

In response to the question on duty of upper riparian countries over cross-boundary river management, a participant responded that one puzzling question facing China is what else China can do besides providing hydrological data, particularly during the flooding season. China has been providing hydrological data to India and other downstream countries at its own cost.

PROGRAMME

0800 – 0830	Registration	1020 –1030	Coffee Break
0830 – 0840	Opening Remarks Dr Ralf Emmers Associate Dean RSIS	1030 – 1200	Session 2: China’s Policy on Trans-boundary River Management <i>Chair: Dr John Wong</i> EAI Singapore
0840 – 1020	Session 1: Current Status and Future Prospect of China’s Resources Security <i>Chair: Dr Li Mingjiang</i> RSIS China’s Global Agriculture Strategy Prof. Paul Evans <i>Dr Cheng Guoqiang</i> <i>Development Research Center of the State Council</i> China Chinese Energy Security Vulnerabilities <i>Dr Zha Daojiang</i> <i>School of International Studies</i> <i>Peking University</i> China China’s Water Security: Current Status, Emerging Challenges and Future Prospects <i>Dr Yong Jiang</i> <i>UNESCO-IHE Institute for Water Education</i> Netherlands		Mekong River Trans-boundary Management Issues in the 21st century: Yunnan Province and its Southern Neighbors <i>Dr Lynn Thiesmeyer</i> <i>Keio University</i> Japan Water Security Challenges in the Context of Sino-Russian and Sino-Kazakh Transboundary Relations <i>Dr Sergei Vinogradov</i> <i>University of Dundee</i> Scotland U.K. Analysis on China’s Transboundary River Management and Relevant Paths <i>Dr Li Zhifei</i> CASS China
Discussant:	The Food, Energy and Water Security Nexus <i>Dr Yu Hongyuan</i> <i>Shanghai Institutes for International Studies</i> China	Discussant:	<i>Dr Patricia Wouters</i> <i>Xiamen University</i>
		1200 – 1310	Lunch
		1310 – 1440	Session 3: China’s Energy Going-out <i>Chair: Dr Wu Fengshi</i> RSIS Singapore

	<p>China and African Fossil Fuels <i>Dr Ana Cristina Alves</i> NTU Singapore</p>	<p>Discussant: <i>Dr Paul Teng</i> RSIS and NIE Singapore</p>
	<p>China's Energy Interests in Central Asia and Russia — Symbiotic Distrust: Balancing Cooperation and Confrontation <i>Dr Alessandro Arduino</i> SASS - CASCC China</p>	<p>1615 – 1630 Coffee Break</p> <p>1630 – 1800 Session 5: China's Role in Global Resources Governance <i>Chair: Dr Sergei Vinogradov</i> University of Dundee U.K.</p> <p>China's Quest for Low-carbon Power <i>Dr Chen Gang</i> EAI Singapore</p>
Discussant:	<p><i>Dr You Ji</i> UNSW Australia</p>	
1440 – 1615	<p>Session 4: China's Global Quest for Food <i>Chair: Dr Zha Daojiong</i> Peking University China</p> <p>China's Food Security: Emerging Challenges from Climate Change <i>Dr John Wong and Dr Chen Gang</i> EAI Singapore</p> <p>China's Global Quest for Food: The Role of the United States <i>Mr Zhang Hongzhou and Dr Li Mingjiang</i> RSIS Singapore</p> <p>China's Agricultural Trade and Investment in Central Asia <i>Dr Oybek Makhmudov</i> Higher School of Business Tashkent Uzbekistan</p>	<p>Examining the Rules of International Law that Govern China's Trans-boundary Water Resources — 'The Legal Space around the River' <i>Dr Patricia Wouters</i> Xiamen University China</p> <p>China in Global Resources Governance: A Norm-taker or a Norm-maker? <i>Dr Wu Fengshi</i> RSIS Singapore</p> <p>Discussant: <i>Dr Hoo Tiang Boon</i> RSIS Singapore</p> <p>1800 – 1810 Concluding Remarks <i>Dr Li Mingjiang</i> RSIS Singapore</p> <p>1830 – 2100 Farewell Dinner</p>

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