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Experts and the science-policy interface in China's climate policy

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Chapter 5: Chinese Experts and China's foreign Climate Policy

5.1 Introduction

To comprehensively understand the role of experts and the science-policy interface (SPI) in China's multi-level climate governance, Chapter 5 starts from the international level. It asks: *How do Chinese experts engage with the international scientific community of climate change (i.e., the IPCC) and the international climate negotiations?* Further, what is their impact on China's foreign climate policymaking and global climate politics? Section 5.2 builds off the evolution of China's climate policy laid out in Chapter 4 and focuses on the evolution of China's *foreign* climate policy since 1990. Sections 5.3 and 5.4 explore the Chinese experts' involvement in the IPCC Working Groups and the international climate negotiations respectively. In addition to the source of knowledge supply and division of labour of the Chinese experts, I also discuss their self-perceptions in participating in global climate politics. To further explain under what conditions and in which ways the experts influence international climate policymaking, I analyse three case studies in Section 5.5. Lastly, I answer the questions set out in this paragraph, summarise the research findings and discuss the features of SPI at this governance level in Section 5.6.

5.2 Evolution of China's foreign climate policy

This section shows the evolution of China's foreign climate policy since 1990. I identify five distinct phases for explaining the transformation of China's stance in global climate politics (see *Table 5.1*).

Table 5.1 Characteristics of China's foreign climate policy since 1990

Period	Characteristics
Phase 1 (1990~1997)	China sees climate change as obstructing development prospects
Phase 2 (1998~2006)	China turns to support the flexible mechanisms under the KP
Phase 3 (2007~2009)	China switches to a proactive stance and announces its first-ever voluntary CO ₂ emissions reduction target
Phase 4 (2010~2015)	China becomes more active in global climate politics and announces its absolute target for CO ₂ emissions reduction
Phase 5 (2016~)	China is aiming to be a global climate leader

Source: this research.

5.2.1 Phase 1 (1990~1997): China sees climate as obstructing development prospects

In Phase 1 of China's participation in the international climate negotiations (1990~1997),

China and the Group of 77 (G-77) argued that industrialised countries should adopt GHG reduction targets and that developing countries could not reduce their GHGs as they emitted very little (Gupta, 1997). After being ensured that only industrialised countries would have emission reduction obligations, China supported the negotiation of the UNFCCC and the Kyoto Protocol (KP).

At the beginning of the international negotiations, China argued that climate change/global warming was a narrative created by the Global North countries (Zang, 2009). China felt that the spread of the climate change discourse would be used to prevent the Global South from rapid development (Gupta, 1997; Harris and Yu, 2005). Chinese political leaders adopted terms like ‘environmental colonialism’ and ‘sovereignty intervention’ to promote collaboration between G-77 countries (Harris and Yu, 2005: 55-56; Wu, 2013). While acknowledging that all human beings should tackle climate change, China insisted on the principle of ‘common but differentiated responsibilities and respective capabilities’ (CBDR) and argued that industrialised countries should take more responsibility for emissions reduction as they had emitted much more in the past (Economy, 1997; Gupta, 1997; Jeon and Yoon, 2006; Heggelund, 2007). Also, as a developing country in the 1990s, China supported the alliance of developing countries and made statements on behalf of the G-77 and China. The G-77 and China aimed to strengthen the voice of the Global South, urging industrialised countries to reduce their emissions, pay their ecological debts and provide financial, technological, and capacity-building support for developing countries to address climate change (Conrad, 2012; Wu, 2013). Meanwhile, China also objected to the proposed market mechanisms (Tangen, Heggelund, and Buen, 2001).

5.2.2 Phase 2 (1998~2006): China turns to support the flexible mechanisms under the KP

In Phase 2 (1997~2006), China continued to call for industrialised country leadership in GHG emissions reduction (Pang and Zou, 2008) and maintained that they should fulfil their commitments to providing financial support and to transferring technology to developing countries based on Article 4.7 of the UNFCCC.

However, China became more willing to consider the flexible market mechanisms under the KP. While China initially saw mechanisms such as Joint Implementation (JI) and the Clean Development Mechanism (CDM) as offset mechanisms that allowed Annex I countries to escape their responsibilities, from 1999 onwards China asked for more time to evaluate the expected impact of CDM projects on China’s economy and industries, and turned to support the CDM in 2001 (Tangen, Heggelund, and Buen, 2001; Jeon and Yoon, 2006; Heggelund, 2007; Interviews 03, 05, and 07).

5.2.3 Phase 3 (2007~2009): China switches to a proactive stance and announces its first-ever voluntary CO₂ emissions reduction target

In 2007, China switched to a proactive stance on addressing climate change for a number of reasons. First, it had overtaken the US as the largest global emitter of GHGs in 2006 (see 1.1). China had anticipated that the day would come when it would be asked to take on responsibilities. Hence, rather than being defensive, Chinese political leaders adopted a proactive approach to present its willingness to take action in order to protect its image in international society (Zang, 2010; Wu, 2013; Interviews 05, 10, and 34). Second, following years of climate change-related scientific and policy research, the Chinese government released the National Assessment Report on Climate Change in December 2006 and China's National Climate Change Programme (CNCCP) in June 2007 (see 4.4.3.3). Hence, it was ready to show the world its efforts in addressing climate change (Interviews 03, 05, 10, and 26).

Before the 2009 Copenhagen Climate Change Conference, China announced that it would cut carbon emissions relative to economic growth (or carbon intensity) by 40% (non-conditionally) to 45% (conditionally) by 2020 compared with 2005 levels, although it still rejected a binding target to reduce CO₂ emissions (Wu, 2013). Chinese political leaders emphasised that it was a “‘voluntary action’ based on China’s own national conditions and is a major contribution to the global effort in tackling climate change” (China Climate Change Info-Net, 2009). However, China refused to accept the principle that such targets should be measurable, reportable, and verifiable (MRV) as proposed by industrialised countries (Conrad, 2012).

5.2.4 Phase 4 (2010~2015): China becomes more active in global climate politics and announces its absolute target for CO₂ emissions reduction

In phase 4, China participated actively in international climate talks from 2010 to 2015. After the Copenhagen failure in 2009, China gradually evolved to be an active player in global climate politics and cooperated with the Obama Administration in the US in the following years. Established in 2013, the US-China Climate Change Working Group (CCWG), China's National Centre for Climate Change Strategy and International Cooperation (NCSC, the NDRC's think tank) and the Office of Science and Technology Policy (OSTP, the US) jointly played a central role in facilitating bilateral conversations (the ‘experts dialogue’³⁴

³⁴ The personnel staff and experts from NCSC and OSTP had met in Chicago, Beijing, Washington DC successively, and had even held meetings on skype to discuss the GHG mitigation goal and the China-US cooperation as preparation before the 2015 Paris Climate Change Conference (China Development Institute, 2017; Interview 13).

and the ‘ministerial dialogue’³⁵) (China Development Institute, 2017).

Based on the bilateral collaboration, the US-China Joint Announcement on Climate Change signed by President Obama and President Xi Jinping in 2014 set China’s absolute reduction targets—“to peak CO₂ emissions around 2030, with the intention to try to peak early” (The White House, 2014: Section 1). China also promised to aim to produce 20% of its energy from low carbon sources by the same date (The White House, 2014). Before the 2015 Paris Climate Change Conference, China submitted its intended nationally determined contribution (INDC) to the UNFCCC. This document shows plans to reduce the Chinese carbon intensity by 60-65% per unit of GDP by 2030, compared with 2005 levels and reiterated that renewable energy should make up to 20% of its primary energy supply by 2030 (NDRC, 2015).

While the US-China partnership was critical to laying the groundwork for the success of the Paris Agreement (The Reuters, 2019), China boosted its influence by announcing the establishment of a South-South Climate Cooperation Fund in September 2015. Chinese President Xi Jinping pledged a US\$2 billion fund to facilitate developing countries in implementing their post-2015 development agenda (The Economic Times, 2015). Since the US and many industrialised countries have not yet delivered their obligatory financial aid to the Green Climate Fund (GCF) under the UNFCCC, China’s pledge represents an effort to change the traditional north-south cooperation framework and wield more political weight (Khor, 2015; Interviews 03, 13, 14, 20, and 35).

5.2.5 Phase 5 (2016~): China is aiming to be a global climate leader

The fifth phase of China’s engagement in international climate negotiations is from 2016 to the present. While US President Donald Trump (2016-2020) announced that the US would withdraw from the Paris Agreement in June 2017, China saw the opportunity to lead in global climate governance with the EU (Interviews 66 and 67). Widely seen as a rebuff to Trump’s withdrawal from the Paris Agreement (McGrath, 2017), China and the EU jointly released the EU-China Leaders’ Statement on Climate Change and Clean Energy in July 2018 to commit to implementing the Agreement (European Commission, 2018). In addition, China launched its trading market (announced in 2017 and established in 2021), showing its efforts to achieve the ambitious goal of reaching carbon neutrality by 2060. Whether China becomes a ‘responsible (great) power’ (負責任的大國 *fu zeren daguo*) in

³⁵ In February 2014, John Kerry, US Secretary of the State, and Todd Stern, US Special Envoy for Climate Change visited Beijing to meet Xie Zhenhua, then-Deputy Chairman of the NDRC to exchange their thoughts on the timetable for peaking GHG emissions and the mitigation target of both countries (China Newsweek, 2016).

global climate governance remains to be seen (Kopra, 2019).³⁶ With the US Biden Administration (2020-2024) re-joining the Paris Agreement, it is critical that China and the US cooperate in achieving the climate change mitigation goal in the future.

5.3 Chinese experts in the operation of the IPCC Working Groups

Since the IPCC is the most influential scientific organisation and has a high impact on international climate negotiations (Beck and Mahony, 2018), a crucial step for China was to nominate its experts for the IPCC Working Groups (WGs). This section explains the number and proportion of the experts involved in each WG and their impacts.

5.3.1 Number and proportion of the experts in each WG

Since 1988, 148 Chinese experts have been selected as authors while in total over 1000 scientists have participated in the compilation of the five IPCC Assessment Reports (ARs) from 1990 to 2014 (CMA, 2018). Recently, 37 experts from 21 institutes were selected to engage with the writing and review process of the Sixth IPCC Assessment Report (AR6) (Economics Daily, 2018). *Table 5.2* presents the number and proportion of Chinese experts who participated in the IPCC WGs as Coordinating Lead Author (CLA), Lead Author (LA), Contributing Author (CA), and Review Editor (RE) from the AR1 to AR6 cycles.

³⁶ Worth noting is that the concept ‘responsible (great) power’ is a double-edged sword used by China and other countries such as the US in global climate politics (Kopra, 2016, 2019). While carrying out propaganda overseas and domestically, Chinese officials claim that China has built a positive national image and won praise as a ‘responsible power’ in the international society by its efforts to combating climate change (The Central People’s Government of the PRC, 2018). Meanwhile, countries worldwide (e.g. the US) can use the term tactically to compel China to take more responsibilities on GHG emissions mitigation. Hence, some Chinese journalists warned that Western countries’ calls for China’s ‘greater responsibility’ is a rhetorical tool “to constrain China’s economic development, to advance their own national interests, and to pass on their own responsibilities to China” (Li, 2009; Kopra, 2016: 35).

Table 5.2 Number and proportion of Chinese experts in the IPCC WGs

WG	AR	CLA (China/ total)	LA (China/ total)	CA (China/ total)	RE (China/ total)	Total (China/ total)	Proportion
WGI	AR1	N	1/34	8/250	N	9/284	3.1%
	AR2	0/15	2/65	5/408	N	7/488	1.4%
	AR3	0/21	7/98	4/586	1/27	12/732	1.6%
	AR4	1/22	8/121	11/555	1/26	21/724	2.9%
	AR5	0/29	15/176	8/720	3/50	26/975	2.7%
	AR6	1/31	14/167	N	1/36	16/234	6.8%
WGII	AR1	0/17	0/23	5/156	N	5/196	2.6%
	AR2	0/41	7/231	9/300	N	16/572	2.8%
	AR3	1/40	4/157	8/245	3/33	16/475	3.4%
	AR4	2/48	4/131	7/256	0/49	13/484	2.7%
	AR5	3/64	8/179	6/495	1/14	18/752	2.4%
	AR6	1/47	8/181	N	1/40	268	3.7%
WGIII	AR1	1/23	N	N	N	1/23	4.3%
	AR2	1/36	0/66	0/26	N	1/128	0.08%
	AR3	0/20	5/106	1/70	0/19	6/215	2.8%
	AR4	1/25	11/143	3/861	1/26	16/1055	1.5%
	AR5	3/35	14/201	3/236	1/36	21/508	4.1%
	AR6	2/35	10/166	N	2/36	14/237	5.9%

Source: Author's calculation of the data from the IPCC webpage (<http://www.ipcc.ch>). Regarding the information that did not appear on the webpage (AR1), the author referred to Xiao's (2016: 65-66) calculation.

Each IPCC WG has its primary sources of experts. In the IPCC Working Group I (WGI), which is responsible for assessing the physical science of climate change, the Institute of Atmospheric Physics, Chinese Academy of Sciences (CAS-IAP), and the two CMA-related research institutes—the NCC and the Chinese Academy of Meteorological Sciences (CAMS)—contribute most of the Chinese experts (See Table 5.3).

Table 5.3 Top 10 research institutes where experts were selected to participate in the IPCC WGI

Research institutes where the experts affiliated	Times of experts selected
Institute of Atmospheric Physics, Chinese Academy of Sciences	48
China Meteorological Administration; National Climate Centre	30
Chinese Academy of Meteorological Sciences	10
Beijing Normal University	4
Peking University	4
Institute of Cold and Arid Regions Environmental and Engineering Research, Chinese Academy of Science	3
Nanjing University of Science and Technology	3
Institute of Geology and Geophysics, Chinese Academy of Sciences	2
Research Centre for Eco-Environmental Sciences, Chinese Academy of Sciences	2
Institute of Oceanology, Chinese Academy of Sciences	1

Source: Author's calculation based on the information released at the IPCC WG I webpage (<https://www.ipcc.ch/working-group/wg1/>).

In the IPCC Working Group II (WGII) which aims to assess the impacts, adaptation and vulnerabilities that are in relation to climate change, the Chinese participants come from varied research institutes. In addition to the CMA/NCC and the Chinese Academy of Sciences (CAS), the Chinese Academy of Agricultural Sciences (CAAS), the Water Information Centre under the Ministry of Water Resources, and the State Ocean Administration jointly contribute the majority of the experts. Selected experts also come from universities, i.e., Peking University and Beijing Normal University (both in Beijing) and Tongji University (Shanghai) (see *Table 5.4*).

Table 5.4 Top 10 research institutes where experts were selected to participate in the IPCC WGII

Research institutes where the experts affiliated	Times of experts selected
Chinese Academy of Agricultural Sciences	33
Chinese Academy of Sciences	16
China Meteorological Administration; National Climate Centre	10
Water Information Centre, Ministry of Water Resources	10
State Ocean Administration	9
Tongji University	6
Chinese Academy of Forestry	4
Institute of Botany, Chinese Academy of Sciences	3
Beijing Normal University	3
Peking University	2
Polar Research Institute of China	2
Chinese Centre for Disease Control and Prevention	2
Institute of Geology and Geophysics, Chinese Academy of Sciences	2
Chinese Academy of Meteorological Sciences	2

Source: Author's calculation based on the information released at the IPCC WG II webpage (<https://www.ipcc.ch/working-group/wg2/>).

The IPCC Working Group III (WGIII) focuses on mitigation of climate change; many experts are from research institutes in Beijing. Tsinghua University, the Energy Research Institute (ERI) under the NDRC, and the Institute for Urban and Environmental Studies of the Chinese Academy of Social Sciences (CASS-IUE) contribute the most authors and review editors to the IPCC WGIII. Although the National Centre for Climate Change Strategy and International Cooperation (NCSC) was established only in 2011, their experts were selected to be involved in the latest AR6 cycle (see *Table 5.5*).

Table 5.5 Top 10 research institutes where experts were selected to participate in the IPCC WGIII

Research institutes where the experts affiliated	Times of experts selected
Tsinghua University	18
Energy Research Institute, National Development and Reform Commission	16
Institute for Urban and Environmental Studies, Chinese Academy of Social Sciences	7
China Meteorological Administration	3
National Centre for Climate Change Strategy and International Cooperation	2
Chinese Academy of Agricultural Sciences	2
Shanghai Jiao Tong University	2
Chinese Academy of Sciences	2
State Grid Corporation of China	2
Chinese Academy of Meteorological Sciences	1

Source: Author's calculation based on the information released at the IPCC WG III webpage (<https://www.ipcc.ch/working-group/wg3/>).

5.3.2 Assessing their impact: Chinese experts in WGI have more advantages than those in WGII and WGIII

Although the number of selected Chinese experts in the IPCC WGs has risen since China began participating in the operation of the IPCC in the late 1980s, there is still space for China to improve its impact on the IPCC ARs cycle (Xiao, 2016; Zhang et al., 2018; Li, 2019; Interviews 03, 18, 19, and 39). According to the NCC experts, China's capacity for scientific research on climate change and its influence on the IPCC ARs remains weak in terms of the number of selected participants and the publications cited as references in the ARs (Zhang et al., 2018).

While the experts from developing countries are the minority in terms of the number of participants in the IPCC WGs (Hulme, 2010; Beck et al., 2014), China's discursive power does not dominate compared with those relatively high-profile Global South countries (Interviews 5 and 10). Looking at the number of experts from China, India, and Brazil involved in preparing the IPCC AR5 in 2014, China's only advantage is the proportion of

selected experts in LA (6.65%). Except for LA, China does not have any advantage in CLA, CA, and RE. Chinese CLAs (4.69%) are fewer than Indian (6.25%), Chinese CAs (1.17%) are fewer than both India's (1.65%) and Brazil's (1.31%), and Chinese REs (5%) are fewer than Brazil's (7%) (Xiao, 2016: 69-70; Interview 18).

Regarding China's publications cited as references in the IPCC ARs, the experts in WGI (the physical science basis) have more advantages than those in WGII (impacts, adaptation, and vulnerability) and WGIII (mitigation of climate change).³⁷ To take the AR5 as an example, the citation of China's literature accounts for 3.5% of the references in WGI. Meanwhile, the citation of China's publications accounts for only 1.3% and 1.6% of the references in WGII and WGIII, respectively (Zhang et al., 2018: 2315). Specifically, China's publications on the basic science of climate change, particularly the research on the cryosphere, climate phenomena and its relevance with future regional climate change, acquired more citation in WGI. Chinese experts' publications in these areas account for around 7% in Chapters 2 (Observations: Atmosphere and Surface) and 14 (Climate Phenomena and their Relevance for Future Regional Climate Change); both are two times higher than the average (3.5%). In WGII, Asia, food security and production systems and freshwater resources were the areas where China's literature was cited as references. Lastly, WGIII cited more of China's publications on buildings, industry, human settlements and spatial planning (Li, Wu, and Zheng, 2014; Wu and Jia, 2014; Zheng et al., 2014).

5.4 Chinese experts as delegates to international climate negotiations

In addition to the IPCC WGs, the international climate negotiations are the most important venue for each country's experts. This section explains who the Chinese experts are, in which topics they are involved, and how they have been engaging in the international talks since the 1990s.

5.4.1 The emerging national team of experts

At present, China has a national team of experts from different research institutes that contribute to dealing with different types of work in China's participation in international climate negotiations (Interviews 01, 18, 19, 23, and 24). Yet, it is through three decades of development that the group of experts and their division of labour have been formed and set. In the following, I introduce the development of Chinese experts' participation in international climate negotiations and mention a few names of expert-negotiators in the

³⁷ Worth noting is that from the AR3 (released in 2001) to AR6 (to be released in 2022), Chinese experts have been elected as Co-Chairs of WG I four times (AR3: Ding Yihui (CMA), AR4 and AR5: Qin Dahe (CMA), and AR6: Zhai Panmao (CAAS)), indicating that Chinese experts in WGI are more influential than those in WGII and WGIII.

past three decades. Rather than explain such experts' policy impact in detail, I show that there are a significant number of experts in the Chinese delegation team.

5.4.1.1 Phase 1 (1990~1997): officials and technocrats are the main force for negotiation

At the initial stage of international climate talks in the 1990s, it was primarily government officials or technocrats who took part in the negotiations. For instance, Lu Xuedu, then-officer from the Ministry of Science and Technology (MOST) has participated in the UN climate talks since 1996 (Interviews 19 and 25). Some experts employed at government-affiliated think tanks joined the negotiation to assist their superior authorities. For instance, Lin Erda from the CAAS under the Ministry of Agriculture (MOA) used to negotiate climate change adaptation-related issues (Interview 30).

5.4.1.2 Phase 2 (1998~2006): outside experts began to be invited to the climate talks

Given that the officials lacked the scientific capacity for negotiating topics such as technology transfer and market mechanisms for climate action, they began to invite individual experts from universities or research institutes to the climate talks since the early 2000s. While the delegation was relatively small (less than twenty), the workload and pressure has been quite heavy for each negotiator, as each had to take responsibility for negotiating two or three topics (Sydney Today, 2015; Interviews 05 and 34). An example of an expert-negotiator in this phase is Zou Ji (from Renmin University of China), who was invited by the officials and joined negotiations on technology transfer, capacity building, and the implementation of Article 4.8 and 4.9 of the UNFCCC since 2000 (Sydney Today, 2015).

5.4.1.3 Phase 3 (2007~2009): Tsinghua University formed an expert team to support the government

During the second half of the 2000s, Chinese political leaders increased resources to support the Chinese delegation after acknowledging the necessity and importance of China's performance in global climate politics. Since then, each of the main negotiation topics would have at least one negotiator in charge; both the quantity and quality of the Chinese delegation have improved incrementally (Liu, 2013; Interviews 06, 10, 21, 23, and 27). Experts from Tsinghua University have incrementally formed a strong team to assist the Chinese government with negotiating controversial and technical issues. For instance, Liu Bin³⁸ participated in the negotiation for the 'shared vision for long-term cooperation' (see 5.4.2.3), Wang Can joined the discussion of technology transfer, and Duan Maosheng

³⁸ Worth noting is that Liu Bin has participated in the international climate negotiations since 1992 (Interview 42).

was in the negotiation on carbon trading and market mechanisms (Tsinghua News, 2009; Interviews 06, 27, and 42).

5.4.1.4 Phase 4 (2010~2015): experts from the NCSC joined as a new force for negotiation

In phase 4, the experts from the newly-established government think tank NCSC, joined the Chinese delegation as a new force for negotiation. For instance, Wang Tian has participated in negotiating the issue of transparency and reporting since 2014 (Ideacarbon, 2019). Meanwhile, experts from Tsinghua University still play a critical role in China's participation in the climate talks. For instance, Teng Fei and Zhou Jian participated in negotiations on emission mitigation in developing countries (Tsinghua News, 2012; Interviews 27 and 42).

5.4.1.5 Phase 5 (2016 onwards): a new generation of younger experts emerges

Recently, a new generation of younger experts (many under the age of 35) have become the leading force of the Chinese delegation in the international climate talks (Ideacarbon, 2019). Specifically, experts employed at the ERI and NCSC (both government-affiliated think tanks) are the core of the negotiation team (Ideacarbon, 2019). Meanwhile, representatives from the NDRC, MEE, MOFA, MOST and other ministries and veteran expert-negotiators from Tsinghua University still actively participate in the negotiations on relevant topics.

5.4.2 Experts' division of labour when engaging with international climate talks

When taking part in the international climate talks, experts take on specific roles. This subsection explains the division of labour of experts from different research institutes. In general, there are three roles experts play in China's engagement with international climate talks; they (1) directly join the negotiations; (2) establish contact with and coordinate multilateral international cooperation; and (3) provide consultancy and technical assistance.

5.4.2.1 Directly participation (experts from universities and government-affiliated think tanks)

The experts' foremost task is to directly join the negotiations that require a specific scientific background (Wübbeke, 2010: 34; Interviews 05). Experts from either government-affiliated research institutes or universities can participate in the talks on specific issues. Tsinghua University has been the primary talent pool that provides the scientific input for negotiation (Wübbeke, 2010; Hart, Zhu, and Ying, 2015: 21; Interviews 06, 28, and 55). Led by He Jiankun, experts from the Institute of Nuclear and New Energy Technology and the Institute of Energy, Environment, and Economy form the core of expert

negotiators (Interviews 06, 21, and 23).

5.4.2.2 Contact and coordination (only experts employed at government-affiliated think tanks)

In addition to negotiating specific topics, the experts' second mission is to contact and coordinate with other countries to facilitate multilateral cooperation. Given the political salience of such work, the NDRC/MEE officials primarily assign experts employed at their think tanks (i.e., the ERI and NCSC) to undertake this responsibility (Interviews 13, 23, and 36). Hence, the ERI and NCSC experts assist the officials with routinely contacting the participants of the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA), the Ad Hoc Working Group on Kyoto Protocol (AWG-KP), and the Ad Hoc Working Group on the Durban Platform for Enhanced Action (AWG-ADP) under the UNFCCC (Zou et al., 2015: 8; Interviews 11). Additionally, the experts not only negotiate but also chair and coordinate during the negotiation processes. For instance, Yang Hongwei, an ERI researcher, used to be the coordinator for the G-77 and China on National Communications for the Annex I countries and is responsible for moderating the negotiation procedure for the participants (Interview 36).

5.4.2.3 Consultancy and technical assistance (senior experts)

In terms of consultancy and technical assistance, while the middle-aged and junior experts negotiate, senior experts provide scientific data or technical support to the Chinese delegation (Wübbeke, 2010: 35; Interviews 20, 30, and 35). For instance, He Jiankun from Tsinghua University and Pan Jiahua from the CASS-IUE, both members of the National Expert Committee on Climate Change, seldom sit in the negotiation room but organise consultation meetings outside to provide additional support (The Bund, 2009; Interviews 06, 23, 27, and 42). To sum up, *Table 5.6* presents the division of labour of experts in China's participation in the international climate talks:

Table 5.6 Division of labour of experts in China's engagement with the international climate talks

Function of experts	Negotiation topics	Responsible ministries	Engaged research institutes
Negotiation for long-term cooperative action	1. Shared vision	NDRC→MEE	ERI→Tsinghua University
	2a. Mitigation in industrialised countries	MOFA	N/A
	2b. Mitigation in developing countries	NDRC→MEE	Tsinghua University
	3. Adaption	MOST→MOA	CAAS
	4. Financial resources	MOF, MEE	N/A
	5. Technology transfer	MOST	Renmin University→Tsinghua University
	6. Carbon trading and market mechanism related issues	NDRC→MEE	Tsinghua University
	7. Transparency and reporting	MEE	ERI, NCSC
Contact and Coordination	AWG-LCA, AWK-KP, AWG-ADP	NDRC, MEE	ERI, NCSC
Consultant Council	Assist the delegation by providing technical support and scientific data during negotiations	CMA	National Expert Committee, CASS, Tsinghua University

Source: Author's compilation based on: 21st Century Business Herald (2009); Tsinghua News (2009, 2012); Sydney Today (2015); DESS Tsinghua (2018); Ideacarbon (2019); and Interviews 06, 29, and 37.

5.4.3 The operation of the Chinese delegation and the experts' perceptions of participating in the international climate talks

5.4.3.1 The collective decision-making process of China's foreign climate policy

To deal with the fragmented structure of authority among the ministries (see 4.3.1), China's foreign climate policymaking comprises two rounds of discussion, which presents a feature of collective decision-making (K. Brown, 2015; Interviews 01, 24, 32, and 33).

Before the negotiations, the National Leading Group for Addressing Climate Change holds pre-conference meetings for all the related ministries and research institutes. The meetings discuss each negotiation topic, welcoming all research results, proposals and recommendations. After discussion, the Leading Group clarifies where there is room for compromise and how they will protect their own baseline in relation to each negotiation topic (Interviews 06, 15, 20, and 35). As K. Brown (2015: 39-40) states: “so much has already been negotiated within” before the international climate negotiations take place.

During the international two-week negotiations, there is a second round of pre-conference meetings held every morning (Ideacarbon, 2019). The representatives and the negotiators double-check each negotiation topic’s position and baseline, particularly what is negotiable and under what conditions the negotiator can compromise (DESS Tsinghua, 2018; Interviews 06, 15, 20, and 35). The Chinese negotiators also prepare with the G-77 every morning.

After these pre-conference meetings, the Chinese negotiators must follow the instructions to negotiate with their counterparts, ensuring that their behaviour is “without exceeding the authorisation of the Chinese delegation” in the negotiation process (China Economic Weekly, 2014; Fieldnote 20/11/2015; Interviews 06, 15, 17, and 20).

5.4.3.2 Expert-negotiators are agents that implement some already decided decisions

Although expert-negotiators can participate in the international climate talks, they do not have the power/authority to make decisions. They are obliged to ask their supervising authorities for further instructions regarding strategic actions (China Development Institute, 2017; Interviews 13, 23, and 26).³⁹ Although expert-negotiators hold a certain degree of autonomy and room for discretion they are at best agents for implementing decisions that have already been made. In practice, few delegates have the authority to adjust the already set baseline or position, not to mention the expert-negotiators (Interviews 10 and 23). According to some experts’ observation, even the top-level officials have difficulty changing China’s policy position and baseline during the talks (Interviews 17, 20, and 23). In this respect, I disagree with some existing studies stating that some Chinese expert-negotiators can be seen as ‘policy-makers’ and can sometimes ‘guide policy during negotiations’ (Wübbeke, 2010, 34-35; 2013 (a): 727-728).

³⁹ For instance, when Lu Xuedu participated in the COP3 negotiation in Kyoto in 1997, China’s baseline was to “set substantial and quantifiable GHG emissions for industrialised countries without adding obligations for developing countries” (Globe Biweekly, 2009 (b)). When encountering the challenging situation in the negotiations, Lu and his colleague had to repeatedly “ask (the Chinese government) for instructions” (Globe Biweekly, 2009 (b)).

5.4.3.3 Experts' perceptions of participating in global climate politics: 'science without borders, but scientists have nationalities'

If it is difficult for expert-negotiators to steer policy direction and make the final decision. In most cases, the expert-negotiators take 'protecting China's national interests' (and the broad interests of developing countries) as the guiding doctrine in negotiations (Globe Biweekly, 2009 (a); Ideacarbon, 2019; Interviews 27, 36, and 42). Yet, the expert-negotiators have realised that it is usually hard to reach a balance in multilateral negotiation dynamics and guard the baseline of China's position in practice (Tsinghua News, 2009, 2012).

5.5 How do Chinese experts speak on behalf of the Chinese government? Three case studies

This section now uses three cases to examine how the experts shape China's foreign climate policy, speak to international audiences and their effect on global climate politics.

5.5.1 Case I: The notion of cumulative emissions per capita (CEPC)

Since 1990, countries have debated the sharing of GHG emissions reduction. It is an unstructured problem because when the international arena is debating the ethical principles that suit all countries, the method for allocating GHG emissions is contested (Posner and Sunstein, 2009). China first proposed 'emissions per capita' as a benchmark instead of 'total emissions' in the 1990s (Oberheitmann and Sternfeld, 2009). Since the 2000s, it focused on cumulative emissions per capita (CEPC). In terms of the science-policy interactions, the case shows how Chinese experts produced science/politics co-constituted knowledge for the Chinese policymakers to address such an unstructured problem in global climate politics.

5.5.1.1 The experts, argument, and the science-policy interaction process

In terms of the scientific input for the CEPC approach, experts from Tsinghua University generated the fundamental and discursive knowledge and played the decisive role in putting it onto China's climate policy agenda (Interviews 03, 09, and 18).

Prior to this, several approaches were debated. Among them, the difference between 'aggregate (total) emissions' and 'per capita emissions' had attracted the most attention (Posner and Sunstein, 2009). In 1997, the Brazilian Proposal presented the methodology of accounting for 'cumulative emissions' to include consideration of historical responsibilities (UNFCCC, 1997).

Soon after the Brazilian Proposal was made, two Tsinghua experts published three

articles on a fair GHG allocation scheme (Chen and Wu, 1998 (a), 1998 (b), 1999). They suggested that considering historical responsibilities has a significant impact on the long-term allocation of GHG emission allowances, which echoed the Brazilian Proposal (Chen and Wu, 1998 (b)). Further, they argued that to establish a fair global GHG allocation system, the methodologies proposed in the Brazilian Proposal should be combined with the principle of per capita emissions (Chen and Wu, 1999). Chinese experts argued that since regional disparities within a nation can sometimes be as wide as those among various nations in the world, the actual amounts of GHG emissions vary among citizens living in different regions within a country (Pan, 2003: 6). Hence, emissions rights should be allocated by reference to population rather than nations (Chen and Wu, 1999; Pan, 2003; Ding et al., 2009 (a), 2009 (b); He et al., 2009; Pan and Chen, 2010).

Not satisfied with the existing approaches proposed by the industrialised countries, the Tsinghua experts proposed the CEPC, arguing that only the CEPC approach can achieve the goal of constructing a fair GHG allocation system globally (Ding et al., 2009 (a); He et al., 2009). They defined the CEPC as “the sum of per capita emissions in a country or region for a certain period of time” (Ding et al., 2009 (a): 1450). The CEPC’s consideration of ‘historical responsibilities’ (cumulative emissions) allows countries to reach ‘international equity.’ Its consideration of ‘per capita emissions’ allows all populations to achieve ‘interpersonal equity’ (Ding et al., 2009 (b); He et al., 2009).

Through the compilation process of China’s National Assessment Report on Climate Change (NARCC), the Tsinghua experts took the opportunity to communicate with Chinese officials and put the CEPC in the Assessment Report endorsed by the central government. While the Chinese government launched the compilation committee for the Assessment Report in December 2002, He Jiankun was assigned as leading coordinator of the third part of the NARCC: climate change mitigation and its social-economic assessment (ECNARCC, 2007). In addition to Tsinghua University, experts from the CAAS, CASS, ERI, and other research institutes joined as contributors to draft the chapters. The Tsinghua experts’ idea of CEPC has been supported by experts from other research institutes (Interviews 06 and 42). Between 2004 and 2005, the compilation committee organised two rounds of experts’ review, soliciting opinions from government ministries and a discussion meeting for revising the draft NARCC (ECNARCC, 2007). Led by Li Xueyong, then-Vice-Minister of the MOST, the officials from the CMA, MOST, NDRC, MOF, and other climate change-related ministries have endorsed all the chapters and expressed admiration for the experts’ work (Interviews 06 and 42).

5.5.1.2 The result: the international community noted but did not adopt the CEPC approach

When China launched its NARCC in 2006, the CEPC approach was included in Chapter 23: Equity Principle Analysis for Global Climate Change Issues (ECNARCC, 2007). One year later, when the State Council launched China's National Climate Change Programme, the preface emphasised that "China's historical GHG emissions are very low and per capita emissions have been below the world average the cumulative emissions per capita (CEPC) are 61.7 tons over the same period, ranking the 92nd in the world" (NDRC, 2007: 6). This indicated that the Chinese government had assimilated the CEPC approach into the existing policy framework (Interviews 06 and 42). Hence, I consider the experts' impact on China's policymaking in this case as level 5 (very high).

In terms of the policymakers' assimilation of the approach, Hu Jintao, then-Chinese President, officially mentioned CEPC in his speech when attending the Leaders Meeting of Major Economies on Energy Security and Climate Change at the Group of Eight (G8) Summit in Hokkaido-Toyako, Japan, on 9 July 2008. Speaking in public, Hu pointed out that:

China's per capita emissions are low, and are even lower in terms of the historical cumulative emissions per capita. Moreover, a large proportion of the total emissions are to ensure the peoples' basic lives. Third, due to changes in the international division of labour and the transfer of manufacturing industries, China is under increasing pressure of international transfer emissions.

(The Central People's Government of the PRC, 2008: 1)

Following the top political leader's speech, the Tsinghua expert He Jiankun formally proposed that the Parties to the UNFCCC should adopt the idea of CEPC to allocate GHG emissions in a negotiation session on the 'shared vision' of addressing global climate change in COP14 in 2008 (China Climate Change Info-Net, 2008). Yet, similar to the Brazilian Proposal, the Parties did not adopt the CEPC approach (Interviews 26, 27, and 42). Hence, I consider Chinese experts' impact on global policymaking in this case as level 1 (very low).

5.5.1.3 Analysis: the co-production of science and politics

Why did the Chinese experts propose the CEPC approach? As Tsinghua experts explained, "...to provide a basis for our country's environmental diplomacy negotiations to safeguard the interests of developing countries" (Chen, Wu, and He, 2005: 85). Since China's rapidly increasing GHG emissions is in the spotlight and China's low per capita emissions may no longer be a shield to avoid blame, China needed a new discourse to engage with global

climate politics. This led the experts to develop the CEPC approach (Interviews 03, 06, 27, and 42).

Further, the experts' work on the CEPC approach was a co-production of science and politics. When Chinese experts proposed the idea of CEPC from the standpoint of 'equity' and argued that many developing countries, including China, should have more allocations of GHG emission rights in the short- and mid-term, this was based on the right to development, a legal and political argument. Wübbeke (2013 (b): 8) suggests, from the case of the CEPC that "the scientific inscriptions contain and coproduce the values in conjunction with political inscriptions." However, this is true for all science as underlying science are assumptions and these assumptions include the values of the researchers.

5.5.2 Case II: The Carbon Budget Proposal (CBP)

The second case is the carbon budget proposal (CBP), reflecting Chinese experts' efforts to address an unstructured problem as there is no explicit consensus on the principles (values) and methods (science) for distributing emissions rights to each country.

5.5.2.1 The experts, argument, and the science-policy interactions process

While negotiating for a post-Kyoto climate regime in the late 2000s, two expert teams in Beijing played the most critical role in proposing the CBP: the Research Centre for Sustainable Development (RCSD), the Chinese Academy of Social Sciences (CASS) led by Pan Jiahua, and the Development Research Centre (DRC) of the State Council led by Zhang Yongsheng (CASS/DRC Joint Project Team, 2011; Interview 4). Concerning the provision of knowledge, two types of knowledge were produced by the CASS/DRC experts: fundamental knowledge for accounting for the allocation of GHG emissions, and discursive knowledge for arguing the principle of equity.

Echoing the CEPC to account for historical responsibilities and interpersonal equity, Pan Jiahua and his colleagues at CASS developed the concept of the CBP based on his previous theories on 'human development' (Pan, 2005). He argued that if we distinguish between the luxurious/waste emissions that are unnecessary and the necessary emissions which are the primary demand for human development, the latter for human survival and basic needs satisfaction should not be compromised (Pan, 2003, 2005). Hence, the CBP aims to account for GHG emissions in terms of past, present, and future stock to achieve a fair share of emissions allowances (Pan and Chen, 2010: 10; Interview 4). Further, Pan and Chen explained the basic function of the CBP:

If every country keeps its emissions within its carbon budget, then global emissions will stay within the total global carbon budget. If some countries are in the red, they

must make up the deficit by obtaining the corresponding amount from the budget surplus of other countries. [.....] This means it is necessary to make carbon budget transfer payments between different countries.

Pan and Chen (2010: 19)

At the 'UN-China Climate Change Partnership' side event during COP14 in 2008, Pan Jiahua proposed China's first draft CBP to international audiences. He argued that instead of solely focusing on GHG emissions reduction, the allocation and allowance of future GHG emissions would be more desirable as the operational framework of the new international climate regime. Additionally, the new regime's core concern was that developing countries should receive more emission rights than industrialised countries to ensure their right to development in the future (Ding et al., 2009 (b): 165; Pan and Chen, 2010). After the presentation, Pan received a positive response from foreign participants, such as researchers employed at The Energy and Resources Institute (TERI) from India, Indonesia, the Third World Network (TWN) and other developing countries (IISD, 2008; Pan, 2010). Given that the experts from the BASIC countries (Brazil, South Africa, India, and China) share similar thoughts on carbon budgeting, they then built up a collaborative research team to further develop the CBP (Interview 04).⁴⁰

Pan and the CASS expert team further presented the draft CBP at the Harvard Kennedy School of Government and the World Resources Institute (WRI) in Washington DC in November 2008. They also jointly presented the CBP and the carbon budget account (CBA) with the DRC experts at the Australia-China Climate Change Forum in April 2009. That year, Pan met several senior experts influential in global climate governance⁴¹ to boost the idea of CBP. While most experts supported the idea of CBP in principle, Prof. Michael Grubb (UK) and Dr. Bert Metz (Netherlands) did not accept the combination of cumulated and per capita emissions adopted in the CBP (Pan, 2010). Before the 2009 Copenhagen Climate Change Conference, Pan and his colleagues presented the CBP to China's National Leading Group of Climate Change and the Central Committee of the Communist Party of China (CCCCP) separately. Following this, acknowledged by the Party leadership and related ministries, the National Leading Group arranged a special meeting to discuss the draft CBP further. Afterwards, then-Premier Wen Jiabao made comments (*批示 pi shi*) and praised

⁴⁰ The expert team is composed of experts from Brazil (Adriano Santhiago de Oliveira, José Domingos Gonzalez Miguez), South Africa (Andrew Marquard, Stephan Raubenheimer, Harald Winkler, and Thapelo Letete), India (T. Jayaraman and Girish Sant), and China (Jiahua Pan and Yongsheng Zhang) (BASIC experts, 2011).

⁴¹ The experts Pan met are all big names in the climate change-related field. For instance, Prof. Robert Stavins (Harvard University), Carlo Carraro and Ramón Pichs-Madruga, both Vice-Chair of the IPCC WG III, and Rajendra Pachauri, the IPCC's then-Chairman (Pan, 2010: 48).

the CASS experts' work in December 2009 (Pan, 2010: 46). During the Copenhagen Conference, the CASS experts presented the CBP in three side events. In addition to the 'Carbon Budget Operating Mechanism' discussion organised by the CASS, the experts attended a side event on 'Carbon Equity,' which was registered by the Chinese government, and on the 'Future of Carbon Budget,' which was organised by the German Advisory Council on Global Change (WBGU) and the Stockholm Environment Institute (SEI) (Pan, 2010; Interview 4).

BASIC country experts collaborated in many ministerial conferences and meetings between 2009 and 2010, and the joint research team presented the updated version of the CBP at the Fourth BASIC Ministerial Meeting on Climate Change in Rio de Janeiro, Brazil on 25-26 July 2010. The participating BASIC ministers appreciated the experts' collaborative work and instructed them to operationalise the Proposal (China Climate Change Info Net, 2011). Hence, the research team organised the BASIC Expert Forum six times to revise the CBP from July 2010 to October 2011. During a one and a half-year discussion, the CASS experts' CBP and the DRC experts' (2009, 2010) CBA and the 'national emissions account' (NEA) merged as the 'carbon budget account proposal' (CBAP) (CASS/DRC Joint Project Team, 2011).

Eventually, the BASIC experts jointly released their final report: *Equitable Access to Sustainable Development: Contribution to the Body of Scientific Knowledge* (BASIC experts, 2011) at the UNFCCC's 17th Conference of the Parties (COP17) in Durban 2011.

5.5.2.2 The result: the international community noted but did not adopt the CBP

Although China's CBP/CBAP has received a certain degree of attention since 2008 and several countries (e.g., Germany, India, UK, Japan, and South Africa) have proposed their own designs of CBP, none has been adopted by the international community. Rather, the concept of global carbon budget (GCB) is being more widely discussed to "set the quantity of carbon dioxide emissions that can still be released into the atmosphere while maintaining the increase in the average earth surface temperature below 2 or even 1.5 °C" (Alcaraz et al., 2018: 131; 209).

5.5.2.3 Analysis: Chinese experts were unable to persuade the audience from industrialised countries

Domestically, the experts' CBP was accepted by the Chinese government since its principles and methods were consistent with China's official discourse on climate change—asking industrialised countries to reduce more while developing countries have fewer emissions reduction duties (see 5.2). From the Chinese government's perspective, the political leaders acquired new scientific/political ammunition apart from the CEPC

approach to ask for their emissions rights in the name of fairness and justice. Hence, I consider Chinese experts' impact on China's policymaking in this case as level 5 (very high).

Yet, due to the cleavage between the developing and industrialised countries, some principles and methods proposed by China's CBP were not adopted by the industrialised countries. Experts from industrialised countries considered the CBP as encouraging rather than limiting developing countries to produce GHG emissions (Pan, 2010: 47-48) and this led to the rejection of the proposal. Hence, I consider Chinese experts' impact on global policymaking in this case as level 2 (low).

5.5.3 Case III: The negotiation for technology development and transfer (TD&T)

The third case to show how Chinese experts lobby international audiences is the negotiation for technology development and transfer (TD&T). Since the 1990s, TD&T has been a hot negotiation topic presenting the features of the moderately structured problem (ends). Although there is a consensus on transferring technology from developed to developing countries (Article 4.7 of the UNFCCC), there is a gap between the two regarding the rules, procedures, and items for transfer.

5.5.3.1 The experts and the science-policy interactions process

In the field of TD&T, the Programme of Energy & Climate economics (PECE) from Renmin University of China (RUC) (led by Zou Ji) and Tsinghua University (coordinated by Can Wan) have been the two most important expert teams that assist the Chinese officials. While Zou Ji took the lead in the backstage research and frontstage negotiations of TD&T during the 2000s, the Chinese government adjusted its strategic deployment and transferred the task to Tsinghua University in 2009 (21st Century Business Herald, 2009; Tsinghua News, 2009, 2012; Interviews 27, 34, and 39).

Since 2000, Zou Ji has undertaken three government-funded research projects to develop countermeasures for the negotiations on TD&T: (1) Capacity Building in Non-Annex I Parties (funded by the NDRC 2000~2008), (2) the Implementation of Articles 4.8 and 4.9 of the UNFCCC (funded by the NDRC, 2004~2005), and (3) China's Proposal for Technology Development and Transfer (funded by the MOST, 2007~2010) (Interviews 29 and 32). To generate China's Technology Roadmap (TRM) listing the technology needs for low-carbon and economic development, Zou's research team completed two rounds of technology needs assessment. In the first round, the experts scrutinised 388 technologies of the six major high-energy-consuming sectors—power, steel, transportation, cement, chemicals, and building sector. Then, they screened out 62 specialised and general technologies as 'core technologies' that are needed for China to achieve the goal of 40-

45% GHG mitigation target by 2020 (Zou et al., 2009: 44-45; UNDP China and RUC, 2010: 59).

Further, Zou and his colleagues pointed out that 42 of the 62 technologies make up the core items that Chinese industries lack domestically, emphasising the urgency of transferring these core technologies to China to accelerate mitigation. Otherwise, it would take much longer to acquire such core technologies through China's own research and development (Zou et al., 2009; UNDP China and RUC, 2010: 59-60). Such statements have been included in China's official documents, such as in its annual white paper—*China's Policies and Actions for Addressing Climate Change* (NDRC, 2009, 2010, 2011). Hence, the fundamental, discursive, and applied knowledge produced by the experts has been accepted by the Chinese policymakers.

In addition to domestic research, the experts also provided scientific arguments to support the political leaders during the negotiations. For example, at COP14 in Poznań in 2008, Su Wei, Director of the NDRC's DCC, elaborated the principle of common but differentiated responsibilities (CBDR) and equity, asking for more development space and carbon allocations for developing countries and promoting technology transfer from industrialised to developing countries (Wagner et al., 2009: 388). Then, Wan Can presented China's position on technology transfer, while Zou Ji proposed the institutional design for enhancing international cooperation to embody the CBDR and equity principles (IISD, 2008).

Apart from assisting the Chinese government, the experts have joined the G-77 to demand that industrialised countries provide technological support. When the G-77 and China jointly submitted their 'Proposal on Technology Mechanism' to the UNFCCC in 2008, Zou Ji was one of the authors of the Proposal, while many of the ideas from his research team were included in the proposal (Interviews 34 and 39). The G77-China Proposal requested for: (1) A new subsidiary body (the Executive Body on Technology) parallel to the UNFCCC, (2) A Multilateral Climate Technology Fund to finance technologies, by industrialised countries who should also leverage private finance, (3) An assessment system with rationale and criteria to evaluate the operation of technology transfer, and (4) The content of technology transfer should include public domain technologies and patented technologies (Su, 2008; TWN, 2008; Wagner et al., 2009: 388).

5.5.3.3 The result: experts have stimulated the institutionalisation of the TD&T rules and procedures

Domestically, the experts have a profound effect on mapping out the blueprint and identifying the core technologies that China needed (see 5.5.3.1). Although little progress

has been made in negotiations on technology transfer since 1992 (Glachant and Dechezleprêtre, 2017), the COP16 in Cancún (2010) and the COP17 in Durban (2011) witnessed some achievements about its modalities and procedures. COP16 decided to establish a Technology Mechanism (TM) to accelerate and enhance technology development and transfer as part of the Cancún Agreements (Decision 1/CP.16 – UNFCCC, 2011). The TM is composed of the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN). COP17 further completed the institutional establishment of the TEC and CTCN, including setting up a Climate Technology Centre (CTC) as part of the CTCN to support the implementation of the TM (Tanunchaiwatana, 2016). Chinese experts have stimulated the institutionalisation of the TD&T rules and procedures with other policy actors from developing countries.

5.5.3.4 Analysis: a broader support as the conditions for the Chinese experts' success

Among the three case studies of Chinese experts' proposals, only the TD&T case led to a partially satisfactory result. While the Chinese government supported all three proposals, the conditions for explaining the international community's acceptance of the experts' proposal of TD&T may be that China's proposed idea has been assimilated into the G77-China Proposal and supported by the alliance of developing countries. I consider Chinese experts' impact on China's policymaking in this case as level 5 (very high), and their impact on global policymaking is at level 4 (high).

5.6 Inferences

Chapter 5 has comprehensively examined how Chinese experts engage in the IPCC WGs and the international climate negotiations and the effect of their engagement. Concerning the Chinese experts' impact on climate science, the experts in WGI (the physical science basis) are more influential than those in WGII (impacts, adaptation, and vulnerability) and WGIII (mitigation of climate change). Regarding the experts' involvement in the climate talks, the past three decades witnessed an emergence of a national team of experts and the rise of a younger generation. When sitting at the negotiation table, the doctrine of the experts is "to protect the interests of China and the developing countries" (5.4.3.3). Due to the collective decision-making process of China's foreign climate policy and the function of the Chinese delegation, the expert negotiators implement some already decided upon decisions rather than guiding policy during negotiations. Concerning Chinese experts' impact on global climate policymaking, they successfully facilitated the institutionalisation of the TD&T rules and procedures alongside other developing countries.

In terms of the feature of SPI, there is a close connection between scientific evidence and political argument. My research suggests that the Chinese experts play a key role in

shaping China's foreign climate policy by loading science/politics co-constituted knowledge for policymakers. Concerning the principle of 'equity,' the experts have provided policymakers with science-based arguments (e.g., CEPC) and policy frameworks (e.g., CBP) to negotiate with their counterparts in global climate politics.