NEW ZEALAND CHINA FRIENDSHIP SOCIETY

ENVIRONMENTAL DELEGATION TO CHINA 2016

Trip Report to Sponsors




Date: 17th November 2016

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INTRODUCTION

Purpose of delegation

The purpose of the delegation was to:
a) Build relationships with Chinese counterparts and better understand Chinese culture and worldviews.
b) Learn about China's natural environment and the pressures it faces.
c) Exchange knowledge about environmental challenges and successes in terms of policy, management, innovation, community action.
d) Identify further opportunities for ongoing relationships, knowledge exchange, consulting, technology, trade etc.
e) Share the knowledge and experience gained on return to NZ.

Members of the delegation

	**Deborah Robertson** Qualifications: Master of Marine Conservation, Master of Environmental Planning Current position: Environment Specialist (Manila) Skills: Impact assessment, environmental policy, environmental planning, marine conservation Interests: sustainable development, safeguards, wildlife conservation, international co-operation, women and environmental decision-making
	**Emma Hill** Qualifications: Master of Marine Conservation Current position: Climate Change Analyst (Wellington) Skills: Marine conservation, environmental data, science communication Interests: sustainable development, conservation, climate change mitigation, climate and social justice, indigenous knowledge
	**Kirk McDowall** Qualifications: Master of Development Studies Current Position: Strategy & Risk Advisor (Wellington) Skills: Strategic planning, monitoring and reporting, international development, intermediate Mandarin Interests: International development, social implications of environmental issues, local initiatives and strategic planning

	**Marc Schallenberg** Qualifications: PhD in limnology (freshwater science) Current Position: Research Fellow, University of Otago (Dunedin) Skills: Freshwater research including ecology, biogeochemistry, palaeolimnology, modelling Interests: Human impacts, science communication, freshwater policy, indigenous environmental knowledge systems, ecosystem services, permaculture agricultural systems
	**Leana Barriball** Qualifications: Master of Marine Conservation Current Position: Manager, Resource Management & Communications, Te Rūnanga o Toa Rangatira (Wellington) Skills: Cultural impact assessments, mātauranga Māori integration with science, relationship building, iwi project management. Interests: sustainable development, indigenous ecological knowledge systems, wildlife conservation
	**Shreejan Pandey** Qualifications: Master of Electrical Engineering Current Position: Manager - Electric Power Engineering Centre, University of Canterbury (Christchurch) Skills: Electric power and renewable energy systems engineering, business management Interests: Climate change mitigation, renewable energy policy, energy business

In addition, Rebecca Mawson, First Secretary, Trade and Economics at the New Zealand Embassy joined the delegation for the two days in Beijing.

Activities undertaken

Oct 2016	**Location**	**Activity**
Sat 8	Kunming	Flight from Shanghai to Kunming.

Sun 9	Kunming	Visited Dianxi Lake and Green Lake Park. Met with the Yunnan Centre for Biodiversity and Indigenous Knowledge (CBIK) and learned about their conservation and traditional knowledge projects with ethnic minorities,, focusing on a project to identify and restore sacred sites. Presented on NZ biodiversity.
10	Kunming	Visited two projects in Yangmou County with CBIK. The first was Tian Xi Agricultural Plant Corporation, a 'green agriculture' initiative that has links with Plant and Food in NZ. The second was a Yuanmou Local Government project to relocate villages at risk of landslides and water shortages. Visited the Yuanmou Man Museum and the Earth Forest. Marc spent day with Yunnan Institute for Environmental Sciences and presented on NZ freshwater biodiversity and palaeolimnology research. Overnight train to Dali.
11	Dali	Visited Dali ancient town and traditional Bai villages in Xizhou. Cycled around Erhai Lake and presented at Dali University on NZ biodiversity, Maori culture and palaeolimnology research. Dinner with colleagues from Dali University.
12	Dali	Visited Xicaohai Wetland and White Dragon Pool (a freshwater spring benefitting from the wetland restoration project) with The Nature Conservancy. Overnight train back to Kunming.
13	Dongchuan	Free afternoon in Dongchuan - enjoyed rural scenery and village.
14	Kunming	Presented to Yunnan Normal University at 3pm on NZ biodiversity and palaeolimnology research. Leana held further discussions with CBIK and then met with the Kunming Institute for Botany and toured their facilities.
Sat 15	Beijing	Traveled to Beijing. Met the Secretary General of Centre for Biodiversity Conservation and Green Development Fund (CBCGDF) over dinner and discussed a range of topics including NGOs in China, the protection of endangered species, and the new Environmental Protection Act.
Sun 16	Beijing	Visited Great Wall (Jinshanling section).
17	Beijing	Morning: visited Beijing Municipal Environmental Protection Bureau and discussed Beijing's air pollution management and future priorities. Noon: Met with BPAFFC. Afternoon: met with the Secretary of the Chinese Renewable Energy Industries Association and discussed China's energy sector and Government policies (at the site of the ICBE 2016). Dinner with BPAFFC.
18	Beijing	Morning: visited Beijing Goldenway Bio-Tech co. to learn about their food waste fertiliser initiative and technology. Afternoon: visited the Institute of Environment and Sustainable Development in Agriculture (a non-profit affiliated to the Chinese Academy of Agricultural Sciences) and learned about their research programmes. Visited the associated National Agricultural Science and Technology Demonstration Park.

19	Baoding	Traveled to the Baoding High-tech Industrial Development Zone (China's Solar and Wind Energy manufacturing industry). Met with, and toured the manufacturing facilities, of Yingli Solar - the largest solar panel manufacturing plant in the world.
20	Tianjin	Toured the Sino-Singapore Tianjin Eco-City and met with city officials and waste management staff to learn about their innovative pilot programmes.
21	Nanjing	Met with Nanjing Institute of Geography and Limnology (NIGLAS) and Hohai University. Presented to both on NZ, Maori culture, biodiversity and palaeolimnology research. Marc travelled to Wuxi. The rest of the group traveled to Shanghai.
S a t 22	Shanghai	Visited the Chongming Dongtan Nature Reserve with Shanghai Youxie. Marc joined a tour of Chinese and overseas lake researchers of Lake Taihu Lake Ecosystem Research Centre and other sites of interest on Lake Taihu.
S u n 23	Shanghai	Departed Shanghai.

A big thank you to our sponsors and supporters

The Environmental Delegation was an exciting, eye-opening and fruitful experience. It gave us unique insights into China's environment, their innovation culture, and both the enormous challenges they face and efforts they are making. We aim to continue building and strengthening the relationships we made in China, and hope to help organise future environmental delegations.

We are very thankful for the number of organisations that supported and assisted the Environmental Delegation. It would not have been possible without the generous funding and support of our sponsors:

- New Zealand China Friendship Society and the Simon Deng Li Fund
- Beijing People's Association for Friendship with Foreign Countries
- New Zealand China Council

And the sponsors of our participants:

- Asia New Zealand Foundation
- Otago University
- Te Puni Kokiri
- Te Rūnanga o Toa Rangatira

SOME KEY LEARNINGS AND INSIGHTS

China's environmental challenges and efforts

There is no denying that the variety and scale of environmental challenges facing China are immense. The country's large population, rapid economic development, and demand for natural resources have put huge pressure on the environment. We personally experienced serious air pollution in a number of cities, saw water bodies that were very polluted by New Zealand standards, and learnt from our Chinese colleagues about problems with soil degradation and contamination. We observed a lack of understanding of the respect that should be placed on traditional ecological knowledge and the holders of that knowledge, and discussed international issues like climate change (China is the world's largest emitter of greenhouse gases) and the problem of illegal wildlife trade (China is a key market fuelling demand).

But, what we also discovered was a country transforming to one more focused on sustainability and exciting environmental technology and innovation, and many people who are passionate about the environment and who are working hard to make a difference. This was demonstrated through:

- Yunnan Heqing County government working jointly with the NGOs Paradise International Foundation and The Nature Conservancy to restore Xicaohai Wetland as a nature reserve for birds.
- The Chongming Dongtan National Nature Reserve, a 24,000 hectare wetland reserve located on Chongming Island next to Shanghai. The reserve helps protect approximately one million migratory birds of 290 species, including waterbirds such as cranes, herons, geese, ducks, gulls and shorebirds, which use the island as a destination for resting and wintering while traveling along Asia's north-south migratory route from as far away as Alaska, Russia, Australia and New Zealand.
- The Centre for Biodiversity and Indigenous Knowledge (CBIK) helping to support and advocate for ethnic minorities and their sacred sites, including protecting and monitoring these sites by developing baseline environmental indicators and understanding the cultural context from the local community. CBIK also works with and helps to train local communities to monitor any damage to these sites.
- China leading the world in renewable energy technology investment - in 2012 alone, China's renewable energy investment totaled $67.7 billion – the highest in the world and double the amount it invested in 2009. Over 15 GW of Yingli Solar modules are also deployed worldwide. Given in context, one GW can meet the electrical demand of more than 300,000 households, and can reduce more than 700,000 tonnes of carbon dioxide emissions a year, equivalent to removing approximately 150,000 cars off the roads.
- The China Biodiversity Conservation and Green Development Fund (CBCGDF) working to raise public awareness of the effects of the illegal wildlife trade and to have endangered species removed from restaurant menus in the Guangdong Province; and to utilise the Environment Protection Law that was reformed in 2014 to allow stronger legal action to be taken against those that cause environmental harm.
- The Beijing Municipal Bureau of Environmental Protection working to combat air pollution through a number of initiatives: the conversion of coal power plants to gas power plants (electricity only); stricter vehicle emission controls, financial incentives to phase out older cars

and a car lottery to limit the number of new cars in Beijing each year; industrial pollution control; land reforestation; and regional cooperation on emission standards.

- Just prior to our visit, China ratifying the historic Paris Agreement on 3 September 2016, and committing to reduce coal use and increase renewable and low-carbon energy.
- And, from harvesting cyanobacterial blooms to produce plastics, converting restaurant food waste into soil conditioner, and building whole eco-cities on top of former wastelands, projects that display the spirit of enterprise and experimentation alive and working to solve environmental problems in China in a way that we do not often see here in New Zealand.

A changing public environmental awareness?

For the past few decades, China's focus has been on poverty alleviation and economic development, which has come at the expense of the environment. But like New Zealanders, Chinese people have a range of values and attitudes towards the environment. Positively, the people we met from China's environmental sector feel that public awareness and knowledge of environmental issues is rising. More people are being affected by environmental problems, and there is more environmental education. They see people desiring change, and making individual changes to their behaviour (e.g. cycling rather than driving).

Studies have also found that environmental awareness is rising, particularly in urban areas and among the highly educated and young people, and that it is lower in rural areas (He et al., 2011). Environmental awareness being high among young Chinese is no surprise to us, as during our visit we were especially impressed by the informed and enthusiastic students we met at various universities. But research showing that environmental awareness is lower among rural people is somewhat unexpected, given the connection to, and reliance on, the land that we observed in the countryside (seeing people farm the land, and visiting water springs that people could drink from). Conversely, in the cities we felt a disconnect from the environment and we saw this in people's attitudes to water and its value (as we perceived) as a medium for getting rid of waste, more so than a lifesource. Perhaps this disconnect is compounded by the everyday consumption of bottled water. However, there was a high level of awareness for environmental issues relating to health, for example people around the city, such as taxi drivers, knew the health risks of living in cities such as Beijing.

But further, in relation to the air pollution problem, it was interesting to see evidence of 'shifting baselines syndrome' - an environmental theory that refers to the incremental lowering of standards - in effect through often heard statements like "We don't have a smog problem here...well it's not as bad as in Beijing or Shanghai" in the smaller cities, and in Beijing people only wearing a facemask when the pollution is most severe.

The attitude to waste also appeared very different to the New Zealand "tidy kiwi" and "keep NZ beautiful" culture. This was noticeable in the presence of plastics and other waste in the places we visited. We learnt that there is an increasing emphasis on managing waste and encouraging behaviour change. There are innovative city-wide initiatives to collect restaurant food waste for conversion to

fertiliser, and increasing numbers of recycling bins around the main cities, although apparently little care is taken by people to place litter in the correct bin. Behaviour change takes time.

What can we learn from each other?

A number of factors make it challenging to imagine how New Zealand and China can learn from each other and co-operate to address environmental challenges. These factors include very different cultures and levels of environmental awareness; population and country sizes; scales and intensities of environmental problems; governance systems, national priorities and levels of development.
Because some issues are totally incomparable in terms of scale and intensity - population growth, rural poverty and urban migration, traffic problems and air pollution in cities like Beijing - China faces a number of challenges where NZ has little relevant experience to offer. In a discussion with the China Renewable Energy Industries Association (CREIA), both sides found the enormously different scales of our energy production amusing, when one of our delegation members pointed out that although wind energy accounts for only 1 % of electricity generated in China, this equates to about 50 GW per year, which is about 10 GW more than New Zealand total energy production!

But New Zealand environmental professionals do have valuable experience and solutions to offer their counterparts in China, especially where New Zealand leads the world. This includes fisheries management, protected areas management, species recovery, biosecurity and valuing and incorporating cultural values into environmental management and conservation. So, the challenge here would be being able to effectively scale up our policies, tools and solutions, and to apply them in China in a way that is appropriate to the cultural context and different governance system without losing those fundamental principles that make them successful.

There are also many things that we can learn from China. Perhaps the most interesting approach we witnessed repeatedly in China was the willingness of governments to fund environmental technological solutions, even though the business and environmental cases for some of these start-ups appeared to be questionable. This shows willingness by the Chinese government to invest in real world experimentation on small scales. This contrasts with the situation in NZ, where there would be little support or encouragement for investing in the development of such financially risky and environmentally challenging projects. One advantage of the Chinese approach could be that it encourages experimentation and building of a practical knowledge base, which could eventually lead to breakthrough technologies that could be financially viable and up scalable to provide real environmental benefits. This included piloting new technologies with the Singaporean Government in the Sino Singapore-Tianjin Eco City, which can then be implemented further within the two countries. Although it seems that a lot of these outcomes are more development focused, we could potentially utilise a similar model in NZ to push the government to fund research on innovative ways of combating our environmental issues.

Through our visit we gained a much better understanding of the scale and complexity of the challenges that our Chinese colleagues are facing. For example we learned that from 1998 to 2016, there was a 75

percent increase in the population of Beijing, which reached an unofficial population of 26-30 million people this year. The rapid growth, which was largely fuelled by rural to urban migration, would also result in serious environmental and livability issues if it occurred at this rate in New Zealand.

Our time spent in China was indeed unique, and being part of the delegation gave us brief insights into life in China, including the challenges faced and their successes over the past few years. An understanding of each other and our environments is essential for the two countries to work together, and this can assist in building a foundation for genuine professional relationships to combat the various environmental issues we face. By continuing to build and maintain these links between New Zealand and China, within the environmental area, but also more widely across different sectors, we can come together more closely and help combat the environmental challenges that impact the globe.

OUTCOMES AND ONGOING OPPORTUNITIES

- New relationships have been formed between delegation members and organisations within China's environmental sector, particularly universities, institutes and NGOs.

- Presentations for, and meetings with, researchers at Dali University, Kunming Normal University, Kunming Institute of Botany, Yunnan Institute for Environmental Science, NIGLAS and Hohai University are continuing and six researchers from NIGLAS and Hohai will be attending the New Zealand Freshwater Sciences Society annual conference in Invercargill, 4th-8th December 2016. At this conference, Marc, David Hamilton and Brendon Hicks (University of Waikato), and Guangwei Zhu and Liancong Luo (NIGLAS) will present on "NZ-China freshwater science collaborations: past successes and future opportunities". Marc is also investigating joint NZ-China lake research funding opportunities to allow for future collaborations.

- Further discussions about the value of indigenous knowledge, and the potential for joint research projects, will continue between Leana and CBIK as we were only able to scratch the surface of this kaupapa.

- During the visit we connected a New Zealand company with expertise in masterplanning to 'Agri-garden' (a subsidiary company of the Chinese Academy of Environmental Sciences) who are seeking to collaborate with international companies on upcoming master planning projects in China, and they have continued discussions.

- The NZCFS has a number of aid projects within rural China, and there is the possibility of linking these projects with some of the organisations we met with, and to support professionals or students in China to assist in this work. Kirk will investigate this further.

- Shreejan is investigating the possibility of bringing the Secretary of the Chinese Renewable Energy Industries Association to New Zealand to speak at the Electricity Engineers' Conference 2017, and is considering further any opportunities for New Zealand engineers to share their geothermal expertise with Chinese counterparts.

- Marc will explore (with the University of Otago) the possibility of developing undergraduate and/or graduate student exchanges in environmental science between University of Otago students and those from the Chinese universities that were visited. And, Deborah and Kirk will explore opportunities for New Zealand students or researchers to work with CBCGDF.

- As a result of the Environmental Delegation, there is the possibility of organising similar professional delegations in the future through the NZCFS (in different sectors such as engineering and law), as well as organise future Environmental Delegations to maintain the connections made. Kirk and Deborah will investigate further.

KNOWLEDGE SHARING AND MEDIA RECORD

DESCRIPTION	TYPE	DELEGATION MEMBER	DATE
NZCFS Environment Delegation Tour of China 2016: Report by Marc Schallenberg	Article	Marc	Nov 16
NZCFS Environment Delegation Update	Article	Kirk	Nov 7
NZCFS Environment Delegation Write Ups	Facebook / Website articles	Kirk	Oct-Dec
Update to NZCFS National Executive	Presentation	Kirk	12 Nov
Presentation to the Ministry for the Environment	Presentation	Emma, Deborah	Dec 16
Joint presentation with Chinese lake researchers at the New Zealand Freshwater Sciences Society conference in Invercargill	Conference presentation	Marc	Dec. 4-8
Presentation at the University of Otago on environmental impressions and research opportunities in China	Presentation	Marc	Feb 2017
Joint presentation to NZCFS Wellington Branch, New Zealand China Council, Asia New Zealand Foundation and New Zealand Planning Institute Wellington Branch	Presentation	Kirk, Deborah, Emma, Leana	Mar 17
Trip video for sponsor's websites and social media pages	Video	Shreejan	Dec 17
Presentation to the 2017 Electricity Engineers' Association conference on China's renewable energy policy and industry	Conference Presentation	Shreejan	Feb 17
Asia New Zealand Foundation website article	Article	Shreejan, Kirk	Dec 17
Presentation to Porirua City Council focussing on the relationship between local government and ethnic minorities and some of the policies that may be effective here	Presentation	Leana	Mar 17

FINANCIAL REPORTING

Income

Source	Contribution
NZCFS Simon Deng Li Fund	$11,250
Beijing People's Association for Friendships with Foreign Countries	$6,200
New Zealand China Council	$1,150
Personal contributions	$9,650
Total	$28,250

Expenditure

Item	Cost
International flights	$9,494
Yunnan province itinerary + domestic flights Shanghai – Kunming - Beijing	$8,238
Beijing, Baoding and Tianjin portion of tour	BPAFFC ($6,200)
Land transport (airport transfers, trains, taxis, subway)	$433
Accommodation x 4 nights	$750
Activities (Earth Forest)	$200
Food	$1500
Gifts	$446
Tips	$400
CBIK fee + lunch with Government	$305
Dongtan Nature Reserve visit	$200
Miscellaneous	$84
Total	$28,250

FEEDBACK AND LESSONS LEARNED

Delegation objectives

Delegation members have rated how well they feel we met our objectives, using the Likert scale of 1 = strongly disagree, 2 = disagree, 3 = not sure / neutral, 4 = agree, 5 = strongly agree.

a. Because of the visit, I have built/am building new relationships with my Chinese counterparts.

Rating	**Number of delegation members**
Not sure/neutral	2
Agree	2
Strongly agree	2

b. I now have a better understanding Chinese culture and worldview.

Rating	**Number of delegation members**
Agree	3
Strongly agree	3

c. I now have a better understanding of China's natural environment and the pressures it faces.

Rating	**Number of delegation members**
Agree	4
Strongly agree	2

d. I feel I've exchanged knowledge about environmental challenges and successes with Chinese counterparts.

Rating	**Number of delegation members**
Not sure/neutral	2
Agree	2
Strongly agree	2

e. I've identified opportunities for ongoing relationships, knowledge exchange, consulting, technology, trade etc.

Rating	**Number of delegation members**
Not sure/neutral	1
Agree	3
Strongly agree	2

Highlights

- Site visits in Yuanmou County to the green agriculture farm and local government migration project
- Meeting with the Beijing Municipal Bureau of Environmental Protection, CREIA, CBCGDF and Goldenway Bio-Tech co. in Beijing
- For Marc, his visit with Chinese and overseas lake researchers to Lake Taihu Lake Ecosystem Research Centre
- Dinner in Beijing with BPAFFC, and traveling with Chen Yi in Northern China
- Developing new relationships with interesting, experienced and dedicated environmental professionals, from a range of organisations – everyone we met was very warm and generous!
- Presenting at the universities and engaging with students
- Learning about Chinese culture and the opportunity to practice Mandarin
- Visiting rural areas as well as the big cities – this was hugely valuable for our understanding
- Cycling around Lake Erhai
- The Great Wall

Lowlights

- Dongchuan, although this was because we were unlucky with the weather (the fog meant we couldn't see the famous views we had travelled there to see)
- Every member of the delegation suffered food poisoning, mostly during our week in Yunnan – but this is quite difficult to avoid when traveling
- Having very few breaks / alone time, coupled with the extensive travel and food poisoning, made people feel a bit exhausted for a day or two of the tour
- Experiencing the smog in Beijing and Baoding

Advice for future delegations

1. This type of visit works well for people that have high level / broad interests (rather than, or in additional to, very specific interests), especially if the visit is being planned by the delegation members. It is good to have a mix of people in the delegation – those who are in positions to create opportunities with Chinese counterparts, but also people earlier in their career, and a mix of ages, backgrounds and a gender balance.
2. There are upsides and downsides to planning the itinerary as a group from scratch, like we did. It provides the greatest flexibility, but with six people to coordinate it's also a lot of work for the organisers. Another option would be to set a basic itinerary that appeals to various interests

prior to seeking applications, and go from there to fill in the spaces in the itinerary based on specific interests of the chosen group.

3. It's important that all members of the tour are relaxed and considerate people.
4. Having a guide is extremely useful, but it is also nice to have free time in the evenings and to make your own choices for dinner sometimes. A member of our delegation spoke intermediate Mandarin and he was invaluable to our group. If you don't have someone with language skills it will be very difficult to manage without a guide.
5. In terms of dress code, smart casual was mostly fine (i.e. ties and jackets not usually needed).
6. Allow some time for cultural activities, especially in Beijing – it felt a shame to visit Beijing and not have time to visit any of the important cultural sites. Perhaps have a free day in Beijing or an optional day at the start/end of the tour in Beijing.
7. Generally, our group felt that one week for the visit would have been too short but that our 17 days may have been just a little bit too long for some people.
8. Invest more of the budget in accommodation, especially for the big cities like Shanghai - we booked accommodation in Shanghai ourselves and went so low cost it was not pleasant.
9. We had a 19-seat bus for a delegation of six. This sounds too big, but it was great – it meant there was enough space for luggage, and for each person to be comfortable, and for our hosts to travel with us to sites (rather than in a separate car).
10. Allow much more time for travel than it says on google maps, in both rural areas and big cities.
11. Make your Chinese travel agency and guides aware of the fluidity of the visit, as ours seemed very uncomfortable each time we wanted to change plans e.g. to accommodate another stop or a hosted dinner etc. that developed at the last minute.
12. We spent a lot of time traveling and covered a lot of ground. Although this allowed us to see and experience different parts of China, which was very valuable, sometimes it didn't feel so productive. If possible, we would recommend visiting fewer places, or scheduling a rest day to recover (e.g. after an overnight train). It is also important for the leader/organizer to have some downtime, as there is lot of administration and communication that needs to be done in China.
13. Remind people of the travel basics – get visas early, check everyone knows their flight details, check everyone has their passports and tickets etc.
14. If you are visiting an area where you need clear weather, check the weather forecast and advise the guide on whether you still want to go (as the guide may not provide this advice).
15. In terms of communications we recommend that everyone get a local simcard and download WeChat. Allow time (a couple of hours) at the start of the tour to sort out the simcards.
16. Contact the NZ Embassy in Beijing before you go to let them know of the delegation – they may like to participate or to meet with you. We have a contact.
17. Try to learn a little Mandarin before you go – your efforts will be appreciated - and read up on cultural etiquette.
18. We can provide you with planning spreadsheets, budgets, template emails, a travel agent and guides for Yunnan, contacts for organisations etc. We have other tips, so please just ask.