

Panel III: Sustainable urbanization in Europe and China



From left to right: Scott Lash, David Feng, Pierre Calame, Chris Hamnett, FAN Lizhu.



Professor FAN Lizhu: We will continue the last session for today. This session is going to discuss sustainable urbanization in Europe and China. Urbanization and sustainable development are very important issues for sociologists in China; we noticed in the past 30 years that urbanization has really developed fast. In the early 1980s, about 85% of the population was living in the countryside. Now, more than 50% of people are living in urban areas. So, the population movement [reflects] urbanization in China.

We have to think of how to make this urbanization sustainable, for example, how to use resources efficiently, and re-evaluate the early years, when the slogan was that development was the essential measure. But now, from the central government to the local government, we emphasize sustainable development... So today, for this session, we have three speakers. One is talking about the urban community to make this sustainable society; the second is talking about the Internet, how the Internet is changing the cities, since social society depends on the Internet; and last is the new ruralism, a new construction which is really important. So let's welcome the first speaker, Professor Pierre Calame. He is going to talk about how cities and regions can live up to their role as chief drivers of the transition towards sustainable societies.



Mr Pierre Calame: Thank you. Compared to this morning, this seems to be a very different topic: we move from the global to the rural, but you will see the continuity between the two. The cooperation between Europe and China is about the transition towards sustainable cities, which should be a goal of our cooperation for the next 20 years.

1. Network of cities, an alternative transcultural globalization

Over the last 40 years, a series of international networks of cities and territories have emerged: in many respects, they are an alternative to the hierarchical conception, Russian dolls fashion, that the states have of globalization, offering what could be called a horizontal globalization, linking peers all over the world. This potentiality has not yet been fulfilled and, more often than not, international meetings among 'cities' are in fact meetings between local authorities. However, the more multi-stakeholders strategies are considered, the more the meetings will turn into dialogue between local societies considered in their diversity of actors. Therefore, as all the cities and territories are confronted with the transition towards sustainable models – the common structure that makes them brothers – this horizontal exchange may become the very symbol of the fairest way to build transcultural dialogue for a true human globalization. In particular, it is a priority for Chinese and European territories and cities.

2. Dialogue on the transition towards sustainable territories and cities places Europe and China on an equal footing

Cities in Europe and China account for a large majority of those countries' populations. They are also at the core of international supply chains. The conception and management of cities, as well as the lifestyles and consumption patterns of their inhabitants, are the main factors in climate change. The present European and Chinese cities are not sustainable in the long term, either socially or ecologically.

Although the urbanization process in Europe has been completed while it is still ongoing in China, Europe and China are on an equal footing when it comes to the need to undertake the difficult transition to sustainable cities and territories.

3. Cities and regions are becoming the chief drivers of the transition towards sustainable societies

From the Earth Summit in Rio in 1992 to the Rio+20 anniversary summit in 2012: what a way we've come! In 1992, states still appeared to be the great public players: those able to think, regulate and manage, those able to assume long-term responsibility. The popular slogan of the time, 'Think globally, act locally', reduced local authorities to the status of executants, who were expected to implement strategies defined at a higher level.

Twenty years later, the scene has changed radically. The final declaration of the Rio+20 summit, pompously and inaccurately entitled 'The Future We Want', which was quickly renamed by the public as 'The Future We Do Not Want', insists on the role of local authorities. And with good reason! Over the last 20 years, states have proved themselves generally incapable of conducting the necessary transition to sustainable societies; the so-called 'international community' has become bogged down in unanimity rules that are the best recipe for inaction; and, as we see with the climate crisis, the global common good continues to be managed through balancing power-based intergovernmental relations that have more to do with the redistribution of power in Europe and the Treaty of Vienna in 1815 than with the need to safeguard the integrity of our planet and the survival of humanity.

Cities and regions were invited in 1992 to develop a 'local Agenda 21'. In the beginning, this was merely contextualized transpositions of the national-level Agenda 21. But over two decades, cities and regions have become increasingly aware of their unique role. Indeed, it is at the local scale, and only at this scale, that it is possible to jointly consider economic, social and environmental issues. Cities and regions have, almost against their will, come to the realization that complexity, i.e., the relationships between things and people, requires thinking with the feet rather than with the head. This has gradually led to the emergence of truly multidimensional transition strategies, although they are still few and far between.

Cities and regions have also proved better than states in initiating partnerships between different local players around a common vision and strategy. Let's not be naive: in many cases, these strategies are still just more sector-based policies; 'pilot projects' sometimes conceal a reality that overall remains unchanged (it's all very well to design eco-neighbourhoods while urban sprawl and relentless dependence on individual cars continue...). But the movement exists.

4. Can cities and regions go a step forward in the near future?

The big question for COP21 is therefore whether it presents an opportunity for cities and regions to take a new step forward, or not. There are two conflicting visions. According to the first vision, local authorities need to ensure that the governments that meet in Paris in December reassert their importance.

The other vision, which I favour, is that cities and regions seek greater freedom from the tutelage of states – a psychological tutelage that is the legacy of centuries of diminishment of the role and autonomy of regions and has led to the emergence, in the last 20 years, of what I call 'the revenge of territories'. More and more people understand that we cannot save the climate without a quota system, and that the only system that would be sufficiently fair and effective is – with apologies to the Americans and Russians, who would be disadvantaged – one based on equal quotas per inhabitant. These quotas could easily

be distributed into territorial quotas, and the creation of such an ‘energy currency’ at local level would constitute a decisive lever for transition strategies to achieve a breakthrough.

5. Turning the approach upside-down: demands from the cities to national authorities

Even if cities and regions are becoming increasingly autonomous in defining their own transition strategies, they nevertheless remain dependent on states, which are both the only subjects of international law – and, as such, have a monopoly on the representation of alleged national interests in international negotiations and the signing of international treaties, including trade-related treaties – and responsible for devising legal and judicial systems.

Consequently, if the new role of cities and territories is to be taken seriously, we need to turn the approach upside-down: it is not the states that ask cities to develop local Agenda 21, it is the cities and territories that demand that the states undertake reforms in order to give effect to territorial strategies. This demand should focus on four points:

- the possibility for cities and territories to freely and comprehensively manage territorial quotas of fossil energy – this idea of global territorial quotas is on the table in China;
- a commitment to promote sustainable production chains, including through the WTO and bilateral treaties on trade and the protection of foreign investments;
- promoting responsibility and co-responsibility;
- the generalization of multilevel governance.

I’m not convinced that, by the time of COP21, networks of cities will already be able to initiate such a change of attitude, from begging to challenging. But I’m certain that the day will eventually come. The more cities and regions that demonstrate their willingness and their ability to fulfil their own responsibilities, the better they will be able to demand that states fulfil theirs.

6. The need for long-term multiple-stakeholder strategies: a priority for EU–China dialogue

Since 1992, we have learned that transition is a comprehensive and multidimensional process, ranging from the transformation of mindsets and governance to technological and cultural developments. It implies the cooperation of a large number of stakeholders – local authorities, civic organizations, public and private companies, investors, scientists and trainers – and the affirmation of their co-responsibility with regard to the transition. I can still see in China an overdue confidence in science and technology and the illusion, which a part of the scientific community and the transnational companies maintain for their own sake, that problems created by science and technology will be solved by more science and technology – forgetting Einstein’s recommendation that we should not expect to solve a problem with the mindset that has created it. Therefore, we should be cautious about putting too much confidence in smart cities and technological transfers.

This situation also calls for a radical transformation of global supply chains so that they themselves become sustainable.

Acknowledging their responsibilities and the urgency of innovative large scale initiatives, Chinese and European leaders of local authorities, civic society, public and private companies, investors, scientists and trainers wanting to play an active role in a multi-stakeholder partnership in favour of sustainable cities and territories have to work together to devise these multi-stakeholder strategies.

The China–Europa Forum, at the invitation of the European Commission, the European Regions Committee and the European Economic and Social Committee, organized a first dialogue of this kind on 29 June 2015 in Brussels. The global objective was to establish and implement, for each city and territory of the partnership, a multiplayer strategy aiming within the next 30 years to reach carbon neutrality and socially sustain and benefit from strong social cohesion, according to a specific route for each city but

with the aim that total emissions of greenhouse gas in each will respect the intergovernmental objective of a maximum global warming of two degrees Celsius.

This is a perfect case for unity and diversity.

7. The main dimensions of a comprehensive multistakeholder strategy: the new agenda for the transition

Taking stock of the different international networks of cities over two decades, we can identify four major dimensions for such comprehensive strategies.

7.1. Understanding of cities and territories and the establishment of territorial structures that ensure that understanding

Cities and territories today are ignorant of their own functioning, of the flow of matter and energy that enters, circulates, transforms and stands out, especially the hidden flows incorporated in the manufacturing and distribution of goods consumed. The partners are committed to supporting the creation of methods by which we can understand the metabolism of cities and territories.

7.2. Sharing of experience and expertise

Knowledge of the experience of others and the transmission of that experience are essential to global progress. This involves active participation in a bilingual website, Chinese and English, bringing together these experiences, and an extensive exchange programme for young professionals between the different stakeholders and between Chinese and European ones.

7.3. Moving from a set of sectoral policies to a comprehensive approach

Systemic transition calls for a shared vision of its different dimensions. Two decades of experience have led to a common understanding of these dimensions:

- Global management of energy (including ‘grey’ energy, incorporated in the consumption of goods and services), with aim of fixing territorial quotas corresponding to progress towards carbon-neutral cities and regions, of defining mechanisms for measuring the quantities consumed by each stakeholder and each business sector and of defining mechanisms for a fair reapportionment of these territorial quotas;
- A new vision of cities and territories considered as ecosystems, instead of the compartmentalized view that prevails today;
- The integration of modern technologies in the regulation and operation of ‘smart cities’;
- The design of governance regimes fit for the management of goods and services, especially those that are limited in quantity, in order to ensure both the efficient and fair management of resources;
- City planning and a long-term development strategy to preserve scarce space and natural resources and to implement effective and efficient public services;
- The mobilization of the creativity resources of all, particularly through youth education, the development of academic programmes and the creation of priority programmes for interdisciplinary research geared towards transition;
- The establishment of local and external funding for the transition, with a particular emphasis on the mobilization of local savings;
- Negotiating with companies in the production and distribution of goods and services in order to promote sustainable global supply chains, with particular emphasis on: optimal use of local resources; renewable energy; a circular economy; a functional economy (substitution of services for material goods); local currencies enabling a direct local link between supply and demand for

goods and services; a social and solidarity economy, combining economic efficiency and social objectives; healthy and sustainable food supply chains, including limitations on waste.

7.4. Inclusive and multilevel governance

- Governance involving all public and civic organizations for the diagnosis, design and implementation of the strategy;
- Multilevel governance, recognizing that none of the challenges of the transition can be tackled at only one level and that it is essential both to define common guidelines for the strategy and to enforce these guidelines according to the specifics of each city, district and neighbourhood;
- Comprehensive governance able to manage the relationships between various public services for the common good;
- Multi-stakeholder governance, with clear co-responsibility shared by all stakeholders;
- Inclusive governance, ensuring that the most disadvantaged social groups benefit from essential goods and services, and play an active role in the transition.

I have run out of time, so... Thank you.

(applause)

Fan: The next speaker is Dr David Feng. He is going to talk about urbanization and the fabric of China's Internet.



Dr David Feng: Good afternoon, ladies and gentlemen. It is a great pleasure to be with you at this Forum. I will be talking about urbanization and the fabric of China's Internet. I am from the University of Westminster's China Centre and also from the Communication University of China. Right before I start, I want to look at cities in the UK and in China; they do have the Internet aspect, and they do have the smart aspect. How many of you, by the way, have gone to China?

OK. So, you might notice from the two pictures over here – this is Milton Keynes, and this is Beijing – that there really isn't much of a difference any more, but once you have the Internet factor, for example the

WeChat factor, there is a bit of a difference.

I decided to look at these issues from four different aspects, starting from urbanization. If we go back to London, this is the 1950s, London had

8,000,000 people, it had a dip in the 1980s, and then it went back again. Shanghai has grown on a completely different scale. Shanghai overtook London in terms of population in 1964, and since the new millennium it went from 16 million to 23 million. As for urbanization in China, only 15% of the population lived in the cities in 1953, but by 2014, we were close to 55%. The transition from rural China to modern China. If we look at the statistics in detail, you will see that the growth has been slightly toned down in recent years, but we are still able to have a growth of about 1-2% in urbanization every single year. Starting from 26% in 2000, all the way to over 50% in 2011. The new 13th Five-year Plan is setting the target for 60%. But there are issues. According to official government statements, the key issue is that of farmers entering the cities. This is the key issue that the Chinese government knows exists, and it's going to solve it. The number of farmers in China is about 400 million, and in many aspects China remains a place which is mostly farmland, mostly agricultural. So the goal is to reduce the number of people who are still in the countryside. In terms of specific cities in China, most of you might know just the Tier 1 cities; for those of you who are not based in China, you might just know Beijing, Tianjin, Shanghai, Guangzhou and Shenzhen. But there are increasingly more cities which you should be more familiar with, Tier 2 cities like Nanjing, Hangzhou, which will host the G20 summit next year, Chengdu, Chongqing, Shenyang – never mind if it gets to minus 30 degrees, there are still lots of people there! So in China we tend to unofficially, or semi-officially, divide cities into tiers. So, there are Tier 1 cities, with

populations of around 20 million; there are only five of these. Then we have 23 cities nationwide with a population of at least 3 million, and then Tier 3 cities, which are pretty much all over the place.

Now, in the UK, cities with one million people are basically London, Manchester, Birmingham. Look at the dots to see how this is different in China. The red dots are Tier 1 cities, which are also provincial capitals. The blue dots are provincial capitals, which are Tier 2 cities. And then the green dots are Tier 3 cities with a lot of people, which are also provincial capitals. You will notice that there is the sole exception of Lhasa in Tibet: that is the only provincial capital in mainland China with a population of less than 1 million. We are building networks between cities, we are linking the cities and provinces. In northern China we have the cities around Tianjin, Beijing and Hebei. In central China we have the Yangzi river delta, around Shanghai; in southern China we have the Pearl River delta. One difference with the rest of the world is that we provide the people with ways of getting into and out of cities; the urbanization in China, as I observed, is increasingly infrastructure-friendly. We have the world's largest motorway network, about 70,000 miles. We keep on growing every month, every year. And the high-speed railway has the world's largest network.

Let's look at the Internet fabric in cities in China. A lot of people in China use the Internet. We have seen stats from June this year, 668 million. The user base, from some time back, around mid-2005, had only about 8% of people in China online. This has grown a lot, although we are still not over 50%. It is increasingly hard to predict when this will happen; they predicted it would happen last year, but it didn't. There are a lot of people who use mobiles: 88.5% of the people who use the Internet use it on mobile devices only, and 72.5% of people who use the Internet will be based in city centres, like Beijing, Shanghai and also Hangzhou, and other Tier 2 and 3 cities. 24.6% of Internet users are students, and you will see the importance of this as I go further on. 22.3% are freelancers. 13.5% are regular employees. So, not so many use the net in their workplace, although this is picking up. 7.9% are farmers. This is the key figure: 55.1% of net users are male, so, for every male user there is a female user, and, importantly, 78.4% were born between the 1970s and 1999. Those interested in Chinese sociology will notice that the generation of people born in the 1970s, 1980s and 1990s make up the bulk of the population, and they are increasingly important. 11.8% of netizens in China have at least a bachelor's degree, with some having MAs and PhDs, but we are slowly getting there. That is the Internet fabric in Chinese cities.

I would like to add something else, which is closely related to Chinese cities and the Internet, what I call smart cities. You have a city, you have the Internet, you have a smart city: that is what it's supposed to be like. In reality, smart cities are defined by complex governance and policies... I have taken a look at those blueprints, and outlined five factors. For example, improved infrastructure and telecommunications. Smart cities involve waste sorting and others. We have perfect examples of it in Beijing and Hong Kong. Smart transport, energy and environmental protection, and upgrades and improvements, and better city management. That last one might throw people off. It really is a question of whether we are using the Internet in a way that helps the city and helps governance. When you think inside the box it's all about big data. So, what makes a city smart is how it makes sense of all this data.

The Internet will become more and more important. We have a few cases of smart cities in China that already exist, for example in Beijing we are increasingly seeing more smart screens; they have invented mobile locations on iPhone and Android devices, where you pick a specific location, and you get information on traffic, you know which roads to avoid, things like that. For the city of Hong Kong, they are taking the transport smart card, the Octopus card, and they are adding money on it. So now when you go, for example, to get a cappuccino or a bottle of water, you don't have to pay with cash, you top up your card with 100 dollars or 200 dollars and you just tap and go. I have used this system; it is a little bit like contactless here in London. With regard to the new telecommunication systems: about three years ago, Hangzhou got its first metro line. What people didn't know is that it also got the first line in China with 4G connectivity, which was big. Recently, the government announced an initiative called 'Internet+'. It is a concept with tangible parts. On the Internet you can go shopping, but there are also other ideas. It improves logistics. The government has given increased attention to logistics. Internet+ will be playing an important part in the smart cities.

Before I conclude, I want to take a look at the benefits and the disadvantages of China urbanizing. There is a mix of opportunities and challenges. The opportunities are to make cities more efficient and to

use data the right way. Recently, the government has thrown up two key phrases for the Internet in China, ‘making faster’ and ‘making cheaper’. Looking at Beijing, we are now extending the connection to the nearby areas. A greater Internet user base eventually will break that 50% mark. And localized online intervention, for example WeChat, comes with the increased use of the Internet; in Chinese cities, you can now actually report car accidents via WeChat. This works in Beijing and Shanghai, and the government encourages people to do that, instead of calling only the police. These are the opportunities; these are the challenges. Privacy and surveillance somehow seem to be less of an issue in China, but it is still an issue. Open data, information security. Slowdown in the path of urbanization, something we cannot avoid. Resources and the worrying issue of smog in Beijing. There is a huge pressure for the family issue. We have to take care of four grandparents, the parents and the children – in the future two children, thanks to the change of the family planning policy. Beijing already knows that China has urbanization issues, and that it is not sustainable. What they are going to do is strictly enforce the green belt; they will not allow cities to expand into the countryside out of control; they will crack down on unlicensed building. Some farmers say they are going to build a new railway here; let me build an unlicensed house and they will give me a million yuan. This is not going to happen any more. This is what the government is trying to do. Lastly, there is resilience. In fact, you want to be as smart as possible and make cities walkable, much like London. Travel in smarter ways, allow the Tube to take over. Avoid the Westernization of cities, as happened in London in the 1970s. We know that elevated ring roads might not be the ultimate task. We are planning cities more sensibly, we are also protecting a heritage of cities, and we are transitioning over to building them to be smart. So this is a quick overview of China with regard to urbanization and the Internet fabric. Thank you very much.

(applause)

Fan: The next speaker is Professor Scott Lash, and he is going to talk about ‘China’s new ruralism’.



Professor Scott Lash: So I will talk about China’s new rural construction, *xinnongcun jianshe*. We have talked about urban change and urbanization, but I am going to talk about rural change and rural planning, because rural China is still very important, it’s still about 45% of the population. Xi Jinping was interested in rural and agricultural issues, and he studied economics, but we are not going to talk about that, although he’s probably sympathetic, I think, in a way.

Rural reconstruction was, as it were, founded and named by Wen Tiejun, a senior government rural policy maker, subsequently professor at Renmin University, and Li Chanping. There are still 45% of the people living in small farms, and the farms aren’t getting much bigger, just the distribution is different. A Fudan Daxue friend of ours is from media studies, the big media department at Fudan. There are a group of the new left, and there is a debate between different people with different views on how things should go at the rural level. Chinese farms, unlike elsewhere, remain very small in size, some 1/80th the size of the average English farm, but that is not going to change; what is going to change is distribution. So the new rural construction, I think, is a cooperative action. It is not a shareable cooperative... As you were saying, Professor Feng, the extension of Guangzhou and other places is happening, but they are sort of dispossessed. People own 10% of their own land, and they develop commercial and residential [sites]. Real estate law is getting massive in China, as we know. There has been huge decentralization, and a lot of it has been unplanned; the *gaige kaifang*, the opening reform, wasn’t completely planned. It’s partly the unintended consequences of what’s going on. So much infrastructure is not funded by the counties, but instead by the townships: by townships in cooperation with villages. They are funded by villages. And the townships sometimes have to build illegally, often in competition with the cities. Township planning arguments can win sometimes in the courts, and it’s a *fait accompli*. On the other hand, there is a big improvement in the environment. Why? Because rural industry is dying, and it’s probably a good thing, for the *kongqi*, the air.

So what is going on? I think that rural reconstruction is partly initiating a commons mode of economic governance. Not a state mode of governance, nor a market mode of governance, but a commons mode. This is very much on a local level. It is in a sense grass roots, but villages always need support

from someone in county or prefecture government. ... There is de-scaling going on. Even townships fund infrastructure, and villages can't do much without townships. It is interesting because, with privatization, there are also township enterprises. The Great Leap Forward was a disaster... but... 15 years later, just after the Cultural Revolution, you see successful communal enterprises. People didn't know, but they were successful, still, for the *gaige kaifang*. In a lot of the villages in China, about 60%, there is a lot of collective ownership. So, there was this de-scaling, or localization, which was going on unattended, and taking very different [forms]. These things also pay for welfare services. If you go to a village, you have to have access to an urban level of welfare spending, but a lot of that stuff is also locally financed, so you have to raise the money. Now, sometimes that is funded through TVEs, sometimes it is financed through real estate. But agricultural taxes were hated by everybody; peasants don't want to pay taxes. At the beginning of reform and opening, the household responsibility system was initiated, partly to meet grain quotas. Subsequently there were no more grain quotas and households and villages began to contract with large distributors and processors such as 'dragon head enterprises' (DHEs). These DHEs do not contract with individual households. Some rural reconstruction units are NPOs, others are private companies. In neither case are they incentivized by the profit motive. A lot of people are going to the villages, from the city, from Beijing and Shanghai. A large number of architects, and students, work with the peasants in this new rural reconstruction...

Talking about real estate, what's going on is that tourism in China has mass consumption. Before they never had mass consumption, but it's happening now. Chinese people love to travel; it's happening faster than people imagine, and basically people want good air quality – there is no country in the world where air is more part of conversation than in China. They are obsessed with the air; people will do what they can to get clean air. It's incredible. They are building eco-hotels, and ordinary peasants are doing their part. The township and village enterprises (TVEs) were mostly closed down because they weren't profitable enough. Once TVEs made up about 40–50% of Chinese industry, now it's, what, 5%? Chinese peasants are converting their big houses into B&Bs. So tourism in China is changing, from big cities, tourists go out [to other areas]. There is microfinance: you make applications, you work with the rural infrastructure, and you decide who gets the money, and the officials sit there, with every individual, every peasant, and work out a plan of their house. It costs about £40,000 to renovate a 250 square metre house. The other thing that is happening on a larger scale is that people in Shanghai and Beijing are getting into eco-tourism. Real estate wins. There is a sort of re stratification that is happening, including a lot of rural re stratification. I think that, in some cases, a sort of cooperative setup is happening: there are four or five types of cooperation, farming cooperation, retirement cooperation. A lot of people who move come back, and they invest in the village. This is rural reconstruction, which has an environmental aspect to it. Also, the question of rent is very important: *fangzu*, which some people pay every month, some people pay annually. In farming, this is what you have to do: you need 50 or 60 mu, so you get them from the village, you negotiate with the village, they pay the firm, you get the land. China is changing ridiculously fast. It's pretty close to Western levels now. It used to be 80% [ownership] 40 years ago. Now it's 40% rent. With specialized consumption, everybody is converting their farming to specialized crops. In Guangzhou, for example, some peasants are getting really rich, working with cooperatives. The real estate model of the economy is taking over, as well, possibly, as various aspects of agriculture. Or will there be a much more decentralized possibility, partly cooperative, very environmental? There is coordination of certain aspects of rural reconstruction. A lot of the stuff is very grassroots, very decentralized.

One tendency is big real estate... some agents hide themselves, they don't say they are real estate, they say they are going to produce, they are going to build, develop more agriculture... Thank you very much.

(applause)

Fan: OK, now we have Professor Chris Hamnett, who is going to make a comment on the discussion.



Professor Chris Hamnett: Thank you very much. This is a great opportunity, with three very interesting presentations. It's very different with the three of them linked together; they all touch on different aspects of urban sustainability. Let's be honest; I think that the focus is on sustainability in China, rather than in Europe, that is important, but... The key thing is that the process of urbanization in China has been so huge and so rapid that it is really the largest in the history of the world, compressed into a period of about 30 years. So if you have an interest in urbanization, you have to be looking at China. My colleagues ask me, 'Why would you go to China?'

Well, you are watching the future being made, literally from year to year, at a rapid pace. There are huge achievements and huge problems, and major mistakes, which are harming the environment. Look at the development of the high-speed train, all of that taking place in just nine years. I think largely since the financial crisis, when basically the Americans got together with the Chinese and said, 'What are we going to do?', Western demand was suddenly reduced. China said, 'Don't worry... we'll simply tell local governments to build, and the banks to lend.' So, consequently there has been this huge real estate growth in the last seven or eight years. We have seen that spectacular motorway project, and also the high-speed rail, so the infrastructure of China is being transformed in a short time. When one looks at the issues of sustainability, you can divide it into a series of [aspects]: you have the environmental, which contains pollution, heavy metals, etc., entailing many problems, particularly in terms of water and air. Think about Scott [Lash]'s comment of how people go to the rural areas surrounding the cities to look for clean air: that is quite fascinating.

For the social aspect, you can look at the social environment in terms of houses, education, health and also transport. In terms of transport, the pace of modernization has been just so spectacular in China over a short period of time. The first time I visited China, 25 years ago, in Guangzhou, everybody rode bicycles; today, you can't move in Shanghai and Beijing because of the traffic jams. Now, in Beijing the city government is reducing the number of car registrations. For me, one of the great problems is the low density of urbanization. It looks high density, but the problem is, because of the division of local government and the key role of the local government revenue model, they need to transfer land to gain money, etc. I saw vividly a couple of weeks ago, around Ningbo, there is a new, out-of-town business area, and the local government has just developed the Ningbo new town to the east, which is even bigger. The thing is that you have a lot of agricultural land between these urban areas. Now, one of the good things in Ningbo is that they at least connected the eastern new town to the centre, with the subway system. I think the rate of subway construction is simply miraculous. If we look at Beijing, I think it has 15 subway lines... 16? The key point is that all of this happened very quickly. Chengdu has just completed the second subway line. Ningbo, Wuhan and other cities are going the same way. The big problem is local government debt – nobody is sure of the scale of the problem yet, but there is this huge local government indebtedness. Linda Wu said that there is no doubt that China will have a financial crisis – it is a matter of when and how, what triggers it. It is probably going to be a real estate-triggered crisis, or a local government debt-triggered crisis. You wonder where the money is coming from.

This year I made two trips to Chengdu, and there is a huge new urban centre north-west of the city centre. This is where the high-tech factories are, where the Foxconn factories are placed. They built this new system of transport... My worry about sustainability in China is that by this rapid over-urbanization and suburbanization, eventually there will be huge levels of energy consumption... I will stop here, but the fascinating thing, Professor Feng – you stressed the key role of smart cities – is the series of technical issues that smart cities have. What they can solve, I think, is the question of social and political distribution, and I think, Pierre, you said we have to be careful of being over-reliant on technological and smart cities. So this is where I stop.

Professor Xiangqun Chang: I'm afraid there is another event scheduled here at 6 o'clock, so we have to cancel the question and answer session. Thank you for the wonderful discussion and thoughts. Thank you so much.

(applause)