Grantham Research Institute on Climate Change and the Environment

Centre for Climate Change Economics and Policy

China's 14th Plan, sustainable development and the new era

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Paper for the 20th China Development Forum

May 2019

ESRC Economic & Social Research Council

The Grantham Foundation for the Protection of the Environment

University of Leeds

LSE The London School of Economics and Political Science

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Acknowledgements

Georgina Kyriacou edited the paper. An earlier draft of this paper was presented at the China Development Forum in Beijing in March 2019. It draws on a longer paper prepared for an Asian Development Bank Symposium in November 2018, entitled *A new, high-quality and sustainable economic growth strategy for China: Reflections on issues for the next stages of reform*, by Cameron Hepburn and Nicholas Stern with Hannah McNicol and Isabella Neuweg.

This paper was first published in May 2019 by the Grantham Research Institute on Climate Change and the Environment and the Centre for Climate Change Economics and Policy.

Suggested citation: Neuweg I and Stern N (2019) *China's 14th Plan, sustainable development and the new era*. London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science.

Contents

Executive summary

Wellbeing, quality and sustainability: the new focuses of China's transformation

The 14th Five-Year Plan (covering 2021–25) will be a crucial element in shaping the new era, for China and for the world. China's transformation has seen it rise from low-income to upper-middle-income status in just over four decades. Its 20th century growth story had physical capital at its core. China will transform again in the next 30 to 40 years but this time with wellbeing, quality and sustainability at centre stage.

The 21st century growth story will be based on the accumulation of four types of capital central to human wellbeing – human, social, physical and natural. It will also be driven by structural change towards a dominance of the service sector; by higher quality outputs and inputs; and by labour and resource efficiency and productivity. Central to this transformation, the aim for China, as for the world, must be a net-zero-carbon economy within 30 to 50 years.

The new growth path can be a very attractive story, incorporating strong, sustainable and inclusive growth. It offers an opportunity for developing countries to avoid the worst problems of pollution and congestion experienced by China and the developed economies. Under the leadership of Xi Jinping, this is a lesson for China's next stage, too.

Climate change, the 14th Plan and the Belt and Road Initiative

Well-planned investments along the Belt and Road can help China's trade partners achieve the Sustainable Development Goals and in turn accelerate their realisation within China. The changing pattern of activities within China, crudely speaking 'moving up the value chain', will require changing relationships between China and its trading partners. Increasingly, China will play the role of an external partner to poorer countries.

The other countries in the Belt and Road Initiative (BRI) have income per capita and wages on average and approximately half those of China. If in two decades' time they have similar income per capita to China now, and if their economic structure of fossil fuel use looks like China's now, then the world would be headed for temperature increases well beyond 3°C and the catastrophic consequences this would involve. This indicates very strongly that the 14th Plan and the BRI have to be understood together.

As China works on its 14th Plan it must take its decisions with careful thought given to how its BRI partners will be taking theirs, and to what forms the partnerships will take. The necessary changes to investment, particularly sustainable infrastructure investment, are significant and must happen swiftly.

Two types of intervention will help create an investment climate that fosters strong and sustainable innovation and investment:

1. Integrate sustainability and the long term into government and investment planning

Governments can wield influence over financial flows through their public investments in shifting away from fossil fuels by building environmental, social and governance considerations and climate objectives into their own investment strategies. This in turn requires a rethink of planning at all levels of government to align current infrastructure project plans with long-term climate, environmental and social development objectives. It can avoid carbon lock-in and make resilience the norm in infrastructure decisions. In turn this can attract institutional investors and other sources of private capital.

China's financial system, including its development finance institutions, will play a central role here. With registered capital of more than RMB 400 billion, the China Development Bank is the largest development finance institution in the world. The decisions it makes can help redirect financial flows within China and throughout the world into sustainable infrastructure projects.

The sense of direction created by government, including its strategies, policies and institutions, will be key to the integration of long-term planning into financial decision-making. Among investors there is still too little understanding of and demand for long-term financial analysis of the potential financial risks posed by climate change. In order to avoid mispricing of assets, misallocation of capital, and stranded assets it is crucial to close this gap in information and awareness. This in turn will help smooth the transition to a zero-carbon economy.

2. Strengthen and enforce sustainable investment principles

Increasingly, investment and analytical principles are being developed that help foster a shift of finance towards sustainable projects. Notable examples are the principles proposed by the Taskforce on Climate-related Financial Disclosures and the Green Investment Principles[1] for the Belt and Road. Further, the multilateral development banks, through decades of expertise on the ground, have tested and refined standards for fiscal and environmental sustainable investments. Many now use internal shadow-carbon prices in the range of US$40–80 per tonne of carbon dioxide by 2020 and US$50–100 per tonne by 2030 for their energy investments, in line with recommendations made by the High-Level Commission on Carbon Prices.

If Chinese financial institutions helped to integrate and promulgate these principles in financial decision-making, they could have a profound influence. The Asian Infrastructure Investment Bank has already placed sustainable infrastructure at the top of its strategic priorities. It can now ensure that its investment criteria embed sustainability.

China itself can be more transparent about planned investments and also its investment criteria. This can help attract other donors who bring their expertise and tested standards, for example the multilateral development banks. Such collaboration can not only strengthen the financial sustainability of these projects, which is important for both the recipient country and China, and reduce their environmental impact, but also increase the understanding and perceived attractiveness of sustainable infrastructure investment within partner countries. This in turn can lead to strengthened energy and climate policy as well as investment frameworks for the countries of the Belt and Road.

Further reforms in seven areas to drive the transformations of China's new era

1. *Policy:* Strong and clear price and regulatory signals will be needed for rapid and efficient change towards high-quality growth that embodies advanced technology and services and sustainability. A strong carbon price and functioning carbon markets will be important here, as well as regulation and standards for redesigning cities.
2. *Policy:* Sound city planning and management are crucial – cities will be the focus of most of the new investment, particularly infrastructure, and currently contribute the large majority of output, pollution and greenhouse gas emissions.
3. *Policy:* Major change inevitably involves some dislocation – some sectors will contract, such as coal-mining, steel and some of low-cost manufacturing, and the impact might be particularly large in specific geographical locations. National and local governments must take action to mitigate the negative impacts.
4. *Finance:* Investment in all four forms of capital will require a combination of private and public finance – the nature and combination of these finances will be a vital part of systemic reform, and 'green finance' and the policies and strategies of mortgage, pension and insurance institutions will be important.
5. *Finance:* The public finance of cities is interwoven with city planning, and with sound and sustainable investments – cities will need strong revenue streams from local

[1] These were developed by the City of London's Green Finance Initiative in partnership with China's Green Finance Committee and launched in November 2018. Ma Jun of Tsinghua University and former Chief Economist of the People's Bank of the Republic of China has been a leading figure in their development.

taxation and payments for services. Transparency and efficiency of local taxation and expenditure will be crucial to the delivery of the next stages of China's development.

6. *Governance:* Private investment is at the heart of the growth model of the new era and it is very sensitive to the quality of governance, as well as the quality of infrastructure services. The quality of governance has a profound influence on the ease of getting things done and on investor confidence in the returns to investment.

7. *Governance:* China already has a key role in global governance. What happens to world trade and investment, to the global commons and to the future of international finance institutions is vitally important to China and the world. A well-functioning, rules-based and equitable world order is in everyone's interest, and China is increasingly influential in shaping that order.

Together, these systemic reforms could foster the investments in physical, human, natural and social capital that will drive forward China's new era of high-quality, sustainable and inclusive growth and development. And at the same time China can provide great support for its partner countries in the Belt and Road as they seek sustainable and inclusive development.

1. Strategic reforms for a new era

As China looks forward to reforms for a new era of sustainable development in a changing world, the country can look back at a transformation that has seen it rise from low-income to upper-middle-income status in just over four decades.[2] This extraordinary achievement is the result of sequential and structured reforms across those decades. Each set of reforms has been tailored to the next phase of China's development, taking into account lessons from the experience of earlier phases, current and likely future circumstances, and any adjustment of goals. Thus China has always charted the next stage of reforms taking careful account of past lessons, economic and technological advance, new challenges, and developments in the global economy.

China will transform itself again in the next 30 to 40 years, when it will move to high-income status, but the dimensions of transformation will not be so focused on output and income. Instead, wellbeing, quality and sustainability will be at centre stage. All of China's major transformations and sets of reforms have been of great importance, but such are the strengths of past lessons and the magnitude of global changes that this next set of reforms is of special significance, not only for China but also for the world.

Over the last 20 years the China Development Forum has played an important role in international understanding and discussion of China's reforms and it will surely continue to do so in the coming crucial years. The 14th Five-Year Plan (covering 2021–25), to be decided next year, is a distinctively crucial element in shaping the new era.

The focus of this paper lies on the broad strategic and investment framework that can bring about the process of transformation and growth for the new era, rather than on the fine detail of particular investments and policies.

2. Old approaches coming to an end

The growth story of the coming decades progresses far beyond the older standard economic models in which growth is shaped largely by physical capital. That approach was encapsulated in the Harrod-Domar idea that growth is the investment rate divided by the incremental capital-output ratio (Harrod, 1939; Domar, 1946). That was the 20th century growth story. Physical capital was at the heart of growth and planning models in the early years of Soviet, Indian and Chinese planning, in a tradition including Feldman in the Soviet Union and Mahalanobis in India.

The new approach advances beyond Deng Xiaoping's third development step,[3] builds on Jiang Zemin's three represents,[4] and encompasses elements of what Hu Jintao called a 'harmonious society'. It aligns with key elements of Xi Jinping's thought to make China not only prosperous but also strong, democratic, culturally advanced, harmonious and beautiful (Xi, 2017).

The 21st century growth story will be based on the accumulation of several types of capital (not just physical), on structural change towards a dominance of the service sector, on higher quality outputs and inputs, and on labour and resource efficiency and productivity. All of these changes and advances will in turn be driven in large measure by further institutional and market reforms.

New forms of growth can and should be sustainable

Sustainability means offering to the next generation opportunities at least as good as those available to the current generation, assuming they behave in a similar way towards those that follow. Sustainability thus depends on the quantity and quality of assets passed to the next generations. These include four types of capital central to wellbeing: human, social, physical and natural (Stern, 2015; Hamilton and Hepburn, 2017; Managi and Kumar, 2018; Lange et al., 2018).

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[2] World Bank Classifications.

[3] The third stage of Deng Xiaoping's three-step development strategy aims to increase per-capita gross national product (GNP) to the level of the medium-developed countries by 2050.

[4] Jiang Zemin proposed the Communist Party of China to stand for advanced social productive forces, advanced culture, and the interests of the majority.

Investing in and achieving high productivity from all these types of capital is crucial not only for strong and inclusive economic growth but also for making growth sustainable. Ensuring that this coming process of growth is sustainable is of fundamental importance for the future of China – and for the world as a whole.

The old era or approach to development is coming to an end as a result of fundamental environmental, social and economic change. We highlight eight factors or reasons, shown in Figure 1.

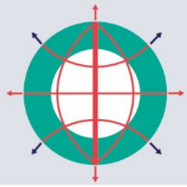
Figure 1. Factors behind the changes bringing an end to the old era of development

1. Pressures on the environment
2. Social strains, including inequality
3. Changing technologies and the need for new skills
4. Changing demography

New emphasis on natural, social and human capital

5. Rising wages
6. Shift in demand towards services
7. Changing world economic geography and interactions
8. Pressures on public finances

Development processes



Changing world economy

The first four of these factors or reasons are issues of natural, social and human capital. The last four concern processes of development which are in large measure associated with changes towards and through middle- and higher-income economies, together with a changing world economy.

The pressures on environment are both local and global. The air of cities has been severely polluted. So too have soil and water. Climate change is an immense risk. China is particularly vulnerable to climate change for several reasons, including: water stress and dependence on run-off from the Himalayas, which will change as the mountain glaciers are affected; the particular concentration of populations along coastlines, which are exposed to sea level rise and storm surges; vulnerabilities to extreme weather events; and areas likely to experience extreme temperatures beyond those of human tolerance.

Strong global climate action is needed, with China playing a central role

We know that strong global action on climate is urgently needed, and that China, because of the size of its economy and emissions, must be a central player. The world economy will double in size in the next two decades or so and within that China's economy will more than double. In the same period, global emissions will have to be cut by well over 40% and then achieve carbon neutrality by 2050 if we are to have a reasonable chance of meeting the Paris Agreement target of keeping temperature rise well below 2°C (Intergovernmental Panel on Climate Change [IPCC], 2018). The mass of infrastructure will likely double globally in around 15 years, much of it associated with urbanisation and a large part of that in China. If this new additional world economy or infrastructure looks anything like the old, then absolute emissions reduction of well over 40% would be impossible: hence the need for radical and urgent change.

Such change requires decisive action and strong leadership. And, as shown by the recent New Climate Economy report *Unlocking the Growth Story of the 21st Century*, the new path can be a very attractive story, with strong, sustainable and inclusive growth, cities in which people can move and breathe, and robust and fruitful ecosystems (New Climate Economy, 2018). This new growth story is the only sustainable path towards prosperity; any attempt at high-carbon growth would self-destruct in the very hostile environment it would create. The global and Chinese economies can grow in a way that both reduces risks for our planet and generates a wave of new innovation and investment that will create a more secure, cleaner and more attractive economy for all. And in so doing, it will become clear, particularly in the developing world, that such growth is not only possible, but that it can also be a productive and efficient route to overcoming world poverty. Developing countries now have an opportunity for a much cleaner, more inclusive and more attractive path than that followed by the rich countries.

Economic growth and climate responsibility come together and their complementarity can help drive both forward. To portray them as in conflict creates an 'artificial horse race' and misunderstands the lessons of economic development and the opportunities that have emerged in the last two to three decades. If the technologies and methods that now exist (in part, of China's own creation) had been available to China 20 or 30 years ago, surely it would not have followed the path that it did and that has created the problems of pollution and congestion we see today. That is a lesson not only for China's next stage but also for the developing world as a whole.

Understanding of all forms of capital is deepening

China has already begun to pursue an approach to growth that embodies a focus on the quality and quantity of each of the four types of capital. For example, it has already enshrined 'ecocivilisation' into its constitution, taken action against air, water and land pollution, increased forest cover, and is moving to curb greenhouse gas emissions. All of these involve taking care of, investing in and avoiding the destruction of natural capital. Indeed, in reference to the importance of an intact, resilient natural environment for development, President Xi Jinping has pointed out that natural capital "overrides and promises" material wealth (Xi, 2017). Similarly, on social capital, China has emphasised the importance of a cohesive society, has expressed concerns about inequality, and has taken action to promote good governance (Liu, 2017; Ownby and Cheek, 2018). China has long invested, through health and education, in the human capital of its people.

Thus, while physical capital and human capital have been central in the past, recent years have seen a deepening understanding of the potential dangers for the other two forms of capital, social and natural, if principles of sustainability are overlooked for investment in physical capital. Badly-designed, low-quality, or polluting physical capital can severely damage health, pollute soil and water, and harm forests: in other words, it reduces or destroys human and natural capital (Daly, 1996; Pomeranz, 2009). Damage to natural capital can itself undermine human health and result in many deaths. Such damage to natural and human capital can further create tensions that undermine social capital.

3. The reformulation of objectives

Moving sustainability and the four forms of capital to centre-stage in the 14th Five-Year Plan will be a natural evolution of the policy and planning direction that China has recognised and taken forward in recent years. But the pressures from the past emphasis on accumulating physical capital, and from inadequate attention to its quality and to the implications for the other forms of capital, have made it vital that the emphasis on sustainability and the four forms of capital is strong and central in the 14th Plan. These pressures have also motivated increased emphasis on key elements of wellbeing as economic and societal objectives, rather than the narrow goal of output or income. These are indeed, broadly speaking, the dimensions of the Sustainable Development Goals, agreed by the world in September 2015 (United Nations Development Programme, 2015). Applying to all countries, they embody sustainability much more strongly and place far greater emphasis on the environment than did their predecessors, the Millennium Development Goals (which covered targets for 1990–2015).

This new approach to investment in multiple forms of capital can be structured in ways that are inclusive and reduce inequality. For example, a strong priority for extensive, clean and efficient public transport will benefit poorer people particularly, since they are much more dependent on public transport, including for facilitating access to employment. Air and water pollution also tend to do greater harm to poorer than wealthier people. Tackling these challenges with new clean technologies creates many job opportunities (New Climate Economy, 2018).

The world economy needs to be net-zero-carbon within 30 to 50 years

In emphasising the importance of the transition to the low-carbon economy and the growth and job opportunities that come with it, we should also recognise that the target within 30 to 50 years must be a net-zero-carbon economy. A net-zero rate of emissions is necessary to stabilise concentrations of greenhouse gases in the atmosphere, and thus temperatures. The earlier it is achieved, the lower the stabilised temperatures. Net-zero is required within 30 to 50 years if we are to stabilise 'well below 2°C'. As the recent IPCC *Special Report on 1.5℃* has shown, the difference between 2°C and 1.5 °C embodies real dangers (IPCC, 2018), including those brought by extreme weather events and droughts.

We should recognise that current emissions plans drawn up by all countries as their 'Nationally Determined Contributions', or NDCs, to the Paris Agreement, taken together, would put us on a path heading for 3°C temperature rise or more (United Nations Environment Programme, 2018). Yet we now know that going beyond 2°C would be deeply dangerous, so the target of 'well below 2°C' is wise: we – the world – break it at our peril.

China is so large and populous that if the world is to be at net-zero, then so too will China need to be. To achieve net-zero requires an urgent review of all investments in long-lived fossil fuel infrastructure that might outlast a 30- to 50-year time horizon (Pfeiffer et al., 2018).

The investment climate, changing relationships and the Belt and Road Initiative

The innovations and investments of the coming decade will, in large measure, be driven by the private sector. Private firms are a crucial source of the creativity and new ideas that higher quality, high-tech and sustainable growth requires. That means that reforms should be market-oriented in ways that encourage that initiative and creativity. Sustainable infrastructure, well-functioning cities and good governance will be vital. In other words, public policy, public institutions and public investment should work to create an investment climate for the innovations and investments of the new era. Research and development, innovation and public research in institutes and universities will play a crucial role.

The changing pattern of activities within China, crudely speaking 'moving up the value chain', will require changing relationships between China and its trading partners. The other countries in the Belt and Road Initiative (BRI) have income per capita and wages, on average and approximately, half those of China. If in two decades' time they have similar income per capita to China now, and if their economic structure of fossil fuel use looks like China's now, then the world would be headed for temperature increases well beyond 3°C and the catastrophic consequences this would involve.[5]

However, if trade and infrastructure links can be established sustainably, and technologies advanced and shared, then the countries of the BRI could play a powerful and positive role in sustainable development and in a new and changing international division of labour, including in relation to China. This could be analogous with one of the key drivers of change in China from the 1970s to 1990s: China's advancement into the world economy through low-cost manufacturing and joint ventures. Now, increasingly, China, with its more advanced technologies, will play the role of an external partner to poorer countries.

All this emphasises very strongly that the 14th Plan and the BRI have to be understood together. Of course, China can and will shape the 14th Plan directly, but it does not itself determine the development strategies of the 70 or more countries who may be part of the BRI. Each country will shape and decide on its own strategy. China can be helpful and a good partner but does not decide the future of those other economies. This is an interesting and important feature of the new era. China must work on its 14th Plan and take its decisions with careful thought given to how its BRI partners will be taking theirs, and to what forms the partnerships will take.

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[5] A rise of 3°C would be extremely dangerous, taking us to a temperature we have not seen on this planet for around 3 million years. It could reshape entire regions and result in mass migration, drought, hunger, disease and conflict.

The necessary changes to investment, particularly sustainable infrastructure investment, are significant and must happen swiftly. If carried out well, the investments, innovations and reforms could yield a sustainable and inclusive growth path for China that could be very attractive. And it is growth that can last to take China to high-income status by mid-century but also, and just as importantly, offer real and major advances in other dimensions of wellbeing. And this future is available to partner countries in the BRI: indeed, they do not have to go through the severely polluting model of the rich countries and of China of the last two to three decades.

4. Investments for the new growth strategy within China and beyond

Ensuring that new investments are steered into productive, high-quality, well-managed, sustainable capital and infrastructure requires clear strategies, strong policies and the right kind of finance. The 14th Plan can provide the strategic framework that can help China find sustainable and inclusive growth and development. This will involve diversifying away from fossil fuels by committing to alternative energy sources, and rethinking some key economic directions such as city planning, infrastructure, management of land use, water resources, future revenue streams, workforce skills, and education and training institutions.

There are various policies and initiatives that can help support this transformation, including carbon regulation and pricing policies, new city designs, improving efficiency and cutting waste, funding research and development for zero-carbon technologies, and setting air pollution standards. We do not elaborate on these details here but the key objective in developing these policies will be an investment climate that fosters strong and sustainable innovation and investment.

Below we focus on the broad frameworks for investment and finance. China's Belt and Road Initiative is interwoven with the country's shift towards the growth model of the 21st century. China can also contribute to the creation of an investment climate for the innovations and investments of the new era in partner countries.

We explore two broad types of intervention:

1. Integrating sustainability and a long-term perspective into government and investment planning
2. Strengthening and enforcing sustainable investment principles for projects and programmes

Integrating sustainability and the long term into government and investment planning

Governments themselves can wield influence over financial flows through their public investments in shifting away from fossil fuels by building environmental, social and governance considerations and climate objectives into their own investment strategies. This in turn requires a rethink of planning at all levels of government to align current infrastructure project plans with long-term climate, environmental and social development objectives. It can avoid carbon lock-in and make resilience the norm in infrastructure decisions. In turn this can attract institutional investors and other sources of private capital. China's financial system, including its development finance institutions, will play a central role here. With registered capital of more than RMB 400 billion, the China Development Bank is the largest development finance institution in the world (China Development Bank, 2015). The decisions it makes can help redirect financial flows within China and throughout the world into sustainable infrastructure projects.

The sense of direction created by government, including its strategies, policies and institutions, will be key to the integration of long-term planning into financial decision-making. Among investors there is still too little understanding of and demand for long-term financial analysis of the potential financial risks posed by climate change. In order to avoid mispricing of assets, misallocation of capital, and stranded assets it is crucial to close this gap in information and awareness. This in turn will help smooth the transition to a zero-carbon economy.

Strengthening and enforcing sustainable investment principles

Increasingly, investment and analytical principles are being developed that help foster a shift of finance towards sustainable projects. Notable examples are the principles proposed by the Taskforce on Climate-related Financial Disclosures (TCFD) and the Green Investment Principles[6] for the Belt and Road. Further, the multilateral development banks, through decades of expertise on the ground, have tested and refined standards for fiscal and environmental sustainable investments. Many now use internal shadow-carbon prices in the range of US$40–80 per tonne of carbon dioxide by 2020 and US$50–100 per tonne by 2030 for their energy investments, in line with recommendations made by the High-Level Commission on Carbon Prices (2017, led by Stiglitz and Stern; see also World Bank, 2017; European Bank for Reconstruction and Development [EBRD], 2019).

If Chinese financial institutions helped to integrate and promulgate these principles in financial decision-making, it could have a profound influence. The Asian Infrastructure Investment Bank[7] has placed sustainable infrastructure at the top of its strategic priorities (Stern serves on the Bank's international advisory panel).

China itself can be more transparent about planned investments and also its investment criteria. This can help attract other donors who bring their expertise and tested standards, for example the multilateral development banks. Such collaboration can not only strengthen the financial sustainability of these projects, which is important for both the recipient country and China, and reduce their environmental impact, but also increase the understanding and perceived attractiveness of sustainable infrastructure investment within partner countries. This in turn can lead to strengthened energy and climate policy as well as investment frameworks for the countries of the Belt and Road.

5. Driving change through systemic reforms

Reforms in seven areas will drive the transformations of the new era

The principal elements of the required reforms concern policies, finance and governance. We illustrate three key aspects of policy, two of finance and two of governance.

Policies

i. Rapid and efficient change towards high-quality growth that embodies advanced technology and services and sustainability will require strong and clear price and regulatory signals. If private sector investment and innovation are to be fostered within a strong and sound investment climate, then both price signals and regulation should take account of potential market failures. An example would be a strong carbon price, and thus it is important to make sure the new carbon markets work well. This could include possible consideration of carbon price floors and carbon taxes. But carbon prices do not by themselves redesign cities, reduce congestion or promote compactness. Nor do they, alone, ensure that products, systems and buildings are designed in a way that the components can be reused or recycled.

   Thus, although crucial, changing price signals to avoid market failures needs to be supplemented with direct public action for the design and reform of cities, including regulation and standards. Reform is also likely to be required for state-owned enterprises so that they are not sites of inefficiency or kept alive artificially when their activities or methods of work are obsolete. The latter works against resource productivity and

[6] These were developed by the City of London's Green Finance Initiative in partnership with China's Green Finance Committee and launched in November 2018. Ma Jun of Tsinghua University and former Chief Economist of the People's Bank of the Republic of China has been a leading figure in their development.

[7] Nicholas Stern serves on the AIIB's international advisory panel.

sustainability and can make eventual adjustment costs more severe. China will be dependent on creativity and entrepreneurship in the new era and a clear, sound, transparent and supportive investment climate is crucial.

ii. Sound city planning and management are crucial. Cities will be the focus of most of the investments, particularly infrastructure investments, of the new era. They are home to the majority of the population and contribute the large majority of output, pollution and greenhouse gas emissions. Their relative importance will grow, so how they are managed in physical, human, social, environmental and financial terms will be critical to China's future. It is important that the design, taxation and infrastructure of cities foster compactness. At present, China's cities are sprawling, creating severe problems of congestion, pollution, and waste (New Climate Economy, 2018). City planning is crucial for the functioning of cities, as is the investment climate within cities; we therefore refer back to cities in point (v) on financial reforms below.

iii. Major change inevitably involves some dislocation. Such issues arise more strongly as China is now an established producer in many sectors. Some of these sectors will contract, such as coal-mining, steel and some of low-cost manufacturing. The impact might be particularly large in specific geographical locations. This type of change, if badly managed, can damage social cohesion and create lack of hope or a sense of injustice. There are a number of actions governments, national and local, can take. We will not go into detail here but key elements include: training and re-training; support and finance for local entrepreneurship; moving mobile government activities to the affected localities; help if people want to move away from deprived areas; and social safety nets.

Local dialogue can contribute strongly to the effective working of these policies. Much of major structural change in developed countries has been badly managed. The movement in the balance of economics towards services, labour-saving technical progress, globalisation and then the global financial crisis has led large parts of the population, and many locations, feeling understandably diminished and ignored. The political, social and economic consequences could be severe. It is very important that China learns from the mistakes of other countries.

Finance

iv. Investment in all four forms of capital will require a combination of private and public finance. The nature and combination of these finances will be a vital part of systemic reform, ranging from bank loans, to angel investments and crowd-funding for small enterprises, to capital markets for major private sector firms to raise debt and equity finance, to large-scale finance, including development banks for large-scale infrastructure projects. 'Green finance' will be an important part of the story. So too will be the policies and strategies of major mortgage, insurance and pension institutions as Chinese citizens buy houses and plan for old age.

Transparency, sound banking standards and regulation of individual institutions and the system as a whole will be of increasing importance in the financial sector. As the sophistication of the economy and financial system grows, the danger of financial crises increases. Crises cannot be wholly avoided but their probability, intensity and impact can be reduced by sound investment decisions, coherent policy, and strong institutions. Investment, and especially overinvestment, in unproductive infrastructure carries severe risks to economic and financial stability. This can be alleviated by careful assessment of infrastructure costs, their financing structure and the actual benefits they generate. Sound, sustainable investment criteria can be strengthened and their use mandated. Their widespread application could help avoid the problem of 'building more' instead of 'building right'. Wise regulation is of great importance, avoiding both the problems of excessive risk-taking and of the potential distortions and risk of directed credit. Managing systemic risk is always important but particularly so at a time where growth strategies are changing strongly.

v. **Interwoven with city planning, and with sound and sustainable investments, is the public finance of cities.** To create a stable investment climate and to carry through the infrastructure and other investments necessary to function in a clean, efficient and sustainable way, cities must manage their public finances well. To do this they will need strong revenue streams from local taxation and payments for services. Local taxation can take a number of forms, including taxation of land and property, pollution or carbon taxes, local additions to income tax and so on. It is important that these taxation powers are clear and well executed, and are not contradictory or confusing relative to taxation from national authorities.[8] Transparency and efficiency of local taxation, as well as expenditures, will be crucial to the delivery of the next stages of China's development.

Governance

vi. **Private investment is at the heart of the growth model of the new era and it is very sensitive to the quality of governance, as well as the quality of infrastructure services.** Governance, our sixth issue, is the 'manner of governing' and societies function much better if that is transparent, honest and as simple as possible. The quality of governance has a profound influence on how easy it is to get things done and the confidence of the investor in the returns to investment.

We can identify three elements of the quality of governance in relation to investment: the soundness of policies, the predictability of policies, and the functioning and behaviour of institutions. Sound policy helps markets to give better signals, by overcoming market failure. Predictability reduces government-induced policy risk. Such risk is a major deterrent to investment around the world. We do, of course, learn over time about new possibilities; new evidence appears; experience teaches lessons. Thus policy cannot be set in stone. But if investor uncertainty is to be managed, the criteria for policy change must be understood, and, as far as possible, be set out in advance. Government policy should be 'predictably flexible'.

Another source of both cost and uncertainty lies with the functioning and behaviours of institutions. Sometimes institutions and officials can be bureaucratically heavy or obstructive. And sometimes they are corrupt. The more licences and permissions that are required, the greater the likelihood that these problems or obstacles can arise. In creating a good investment climate it is important that unproductive and unnecessary intervention is reduced. Of course that does not mean abandoning regulation and standards, for example on pollution or safety: far from it. The argument here is that government should focus on the important and make the application of regulation and standards as user-friendly as possible.

vii. **Our final subject on systemic reform concerns global governance.** As the world's largest economy (in terms of purchasing power parity), China is already a major influence on the world stage, even though its per capita income is still considerably lower than that of many rich countries. Thus it not only acts on the world stage: it also, inevitably, shapes that stage. What happens to world trade and investment, to the global commons and to the future of the international financial institutions is of vital importance for China and the world. On all of these, the world as a whole, including China, will benefit greatly from a well-functioning, rules-based and equitable world order. And China is increasingly influential in shaping that order.

[8] One similar effective rule here is for local taxes either to have a completely separate base from higher level taxes or to piggy-back on them.

6. Concluding remarks: China and the world

The challenges of the global commons, particularly climate change, are of great urgency. China played a leading role in creating the Paris Agreement on climate change in 2015. China has begun to stabilise its greenhouse gas emissions. It will likely begin to reduce them under the 14th Five-Year Plan. China is now, inevitably, in the vanguard of action and international collaboration on climate change. There are great opportunities here for China, not only in terms of its own new model of growth and its technological advances but also in terms of global leadership. Investments along the Belt and Road can help China's trade partners achieve the Sustainable Development Goals and in turn accelerate their realisation within China.

The world's international institutions – the United Nations, International Monetary Fund, World Bank, regional development banks, World Trade Organisation and so on – will increasingly look to China for leadership. China's role in the G20 will be crucial – its Presidency in 2015 and the Hangzhou Summit in 2016 illustrated this. As the October 2018 report of the G20 Eminent Persons Group on Global Financial Governance argued, the IMF is in urgent need of more resources if future financial crises are to be better managed and their frequency is to be reduced. The multilateral development banks (MDBs) could be still more effective if they functioned better as a group.

This could be achieved by following three strands of action. Firstly, joint country platforms could help improve coordination of action in support of a country's development programme. China, which is increasingly important as a supporter of development in other countries, could play a crucial role here. Secondly, countries and MDBs can work together more effectively around risk management, which in turn would attain stronger multipliers for private investment. And thirdly, sustainable infrastructure could be brought to the core of all the work of the MDBs.

This brief discussion of systemic reforms has covered: policy and sustainable infrastructure to create an investment climate to foster private sector innovation and investment; strengthening the financial system for strong, productive and stable financing; better functioning cities, including their public finances; local governance and global governance. Together, these systemic reforms could foster the investments in physical, human, natural and social capital that will drive forward China's new era of high-quality, sustainable and inclusive growth and development. And at the same time China can provide great support for its partner countries in the Belt and Road as they seek sustainable and inclusive development.

References

China Development Bank (2015) *About CDB*. Available at: http://www.cdb.com.cn/English/gykh_512/khjj/

Daly H E (1996) *Beyond Growth: The Economics of Sustainable Development*. Boston, MA: Beacon Press

Domar E (1946) Capital Expansion, Rate of Growth, and Employment. *Econometrica* 14 (2): 137–147. doi:10.2307/1905364. JSTOR 1905364

European Bank for Reconstruction and Development (EBRD) (2019) Methodology for the economic assessment of EBRD projects with high greenhouse gas emissions. *Technical Note*. London: EBRD. Available at: https://www.ebrd.com/cs/Satellite?c=Content&cid=1395238732485&d=&pagename=EBRD%2FContent%2FDownloadDocument

Hamilton K and Hepburn C (2017) *National Wealth: What is Missing, Why it Matters*. Oxford: Oxford University Press

Harrod R F (1939) An Essay in Dynamic Theory. *The Economic Journal* 49 (193): 14–33

High-Level Commission on Carbon Prices (2017) *Report of the High-Level Commission on Carbon Prices*. Washington, DC: World Bank

Intergovernmental Panel on Climate Change (IPCC) (2018) *Global Warming of 1.5 °C: An IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*. Available at: http://ipcc.ch/report/sr15/

Lange G M, Wodon Q and Carey K (2018) *The Changing Wealth of Nations 2018: Building a Sustainable Future*. Washington, DC: World Bank. Available at: https://openknowledge.worldbank.org/handle/10986/29001

Liu X (2017) 'New Era for China and New Chapter of the China – UK Cooperation, House of Commons', speech by HE Ambassador Liu Xiaming at the British Parliament, 21 November 2017. Available at: http://www.chinese-embassy.org.uk/eng/tpxw/t1512703.htm

Managi S and Kumar P (2018) *Inclusive Wealth Report: Measuring Towards Sustainability*. 1st Edition. Routledge

New Climate Economy (2018) *Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times*. The Global Commission on the Economy and Climate. Available at: https://newclimateeconomy.report/2018/

Ownby D and Cheek T (2018) Jiang Shigong on 'Philosophy and History: Interpreting the "Xi Jinping Era" through Xi's Report to the Nineteenth National Congress of the CCP', The China Story, 11 May. Available at: https://www.thechinastory.org/cot/jiang-shigong-on-philosophy-and-history-interpreting-the-xi-jinping-era-through-xis-report-to-the-nineteenth-national-congress-of-the-ccp/

Pfeiffer A, Hepburn C, Vogt-Schilb A and Caldecott B (2018) Committed emissions from existing and planned power plants and asset stranding required to meet the Paris Agreement. *Environmental Research Letters 13(5)*

Pomeranz K (2009) Introduction: World History and Environmental History. In: Burke E and Pomeranz K (Eds.) *The Environment and World History*. 1st ed., University of California Press, pp. 3-32

Stern N (2015) *Why are we waiting? The logic, urgency and promise of tackling climate change*. Cambridge, MA: MIT Press.

United Nations Development Programme (2015) 'World Leaders Adopt Sustainable Development Goals', press release, September 25. Available at: http://www.undp.org/content/undp/en/home/presscenter/pressreleases/2015/09/24/undp-welcomes-adoption-of-sustainable-development-goals-by-world-leaders.html

United Nations Environment Programme (2018) *The Emissions Gap Report 2018*, Nairobi: United Nations Environment Programme

World Bank (2017) 'World Bank Group Announcements at One Planet Summit', press release, December 12. Available at: http://www.worldbank.org/en/news/press-release/2017/12/12/world-bank-group-announcements-at-one-planet-summit

Xi J (2017) *Xi Jinping's report at 19th CPC National Congress*. Xinhua. Available at: http://www.chinadaily.com.cn/china/19thcpcnationalcongress/2017-11/04/content_34115212.htm