CHINA AS AN ENERGY, ENVIRONMENT AND CULTURAL SUPERPOWER

China’s Environmental and Climate Change Policies

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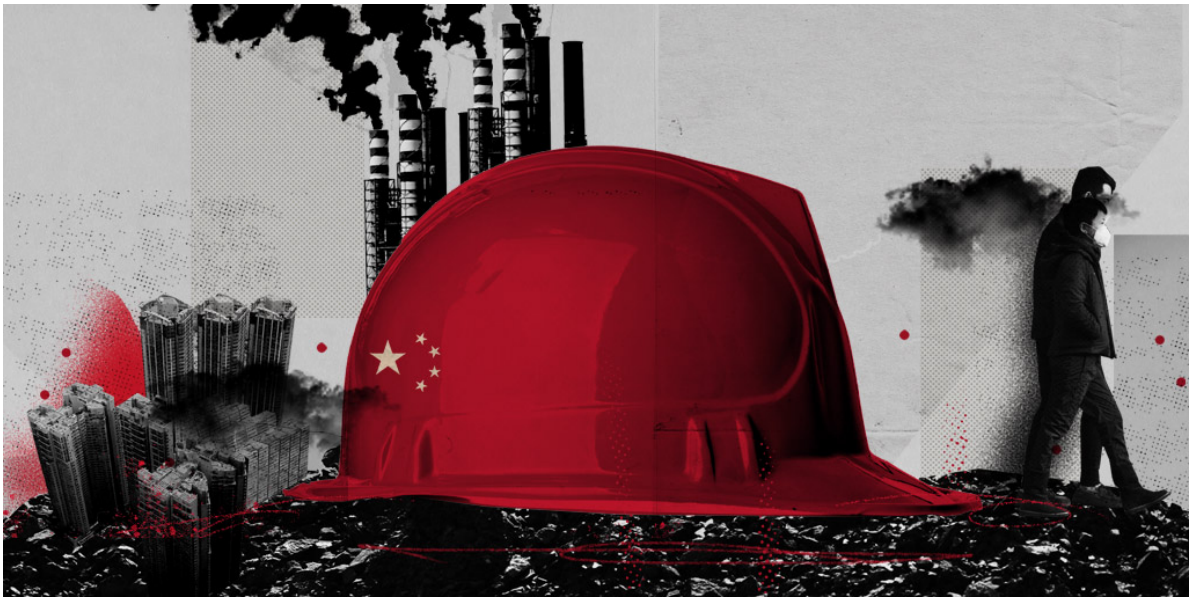

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Melanin in milk powder, cadmium in rice, malachite in seafood, lead in tea, carbamate in ginger, antibiotics in chicken meat, exploding water melons and cooking oil “recycled” from sewage – those are just some of numerous food scandals leaked out in recent years in China. They highlight various contaminations of water, air and soil equally as the weak points of political regulation.

For many years, China has become a permanent feature on international debates on environmental and climate protection. The rapid economic development caused massive deterioration of the environmental conditions and because of high emissions China is considered to be one of the world’s largest “climate sinners”. International environmental indices prove the enormous extend of deterioration of the environment in China. However environmental stress isn`t a new phenomenon in China. Apart from man-made problems difficult ecological circumstances pose a fundamental challenge.

China’s arable land has always been in unfavourable relation to the size of its population. Only about 12.5% of the territory is arable, and much agricultural land has been lost to urbanisation and industrialisation over the last decades. Another problem is the availability of water: today 6 percent of the global fresh water reserves need to supply almost 20% of the world’s population. Also the water resources are unevenly distributed from north to

south, so the south is characterised by an abundance of water, whereas the north suffers from dryness and recurring droughts.

Environmental management as a tradition

China can look back on century-old experience in public environmental management, which served to use and maintain the fertile heartland for agricultural purposes. Often development, decline or restoration of cultural landscapes corresponded to rise and fall of dynasties.

The long-term transformation of nature by terracing and irrigation systems, the drainage of land, the deforestation and reforestation, the construction of dykes and coastal fortification and, the development of new grain types and sowing techniques indicate that China's political destiny was closely linked to a successful management of agricultural production. While taxes based on agricultural yields ensured the continuity of the state, the latter guaranteed the functioning of agriculture and organised the development or utilisation of nature as a transformation into "nourishing landscapes" [1]. Increasing population pressure encouraged attempts to optimise nature. In addition, there were early forms of state disaster management, which, for example, date back to the 18th century as the construction of granaries by the imperial bureaucracy in preparation for times of need, among other things, or the organisation of relief shelters and donations, and served both to legitimise and stabilise existing structures [2].

Despite these numerous efforts to achieve high-yield agricultural production, the Chinese greeting "Nǐ chī le ma?" (Have you eaten yet?) reflects the long collective threat of hunger to date. Chinese historiography lists a total of 1,828 famines between the year 108 BCE and 1911, and between 1470 and 1990, 40 years of severe floods and 134 years of severe droughts are mentioned [3]. The early phase of the PRC was also marked by disasters, including the severe famine associated with the "Great Leap Forward". In addition to socio-political and economic causes, environmental factors such as deforestation, irregular rainfall, floods, plagues of locusts, earthquakes and storms can also be used to explain these emergencies.

The actual transformation of nature for centuries contrasts with its idealised representation in Chinese poetry, literature and landscape painting, which led to an overemphasis on the natural philosophy and environmental ethics of Daoism, Buddhism and Confucianism in the "Western" discussion on China. This supported interpretations that saw the destruction of the alleged "harmonious accord" of humankind and nature in China biased as result of imperialism or as capitalist or socialist ideas of the control of nature imported from abroad.

In fact, the second half of the 20th century is particularly shaped by new environmental pollution as a result of an industrialisation strategy aimed towards rapid catch-up growth. The Mao era, characterised by Shapiro as "war against nature" [4] was marked by utopian aims and dogmatic-centralist measures that equally showed their ignorance towards the environment and the people. Attempts at rapid resource exploitation, forced resettlement,

changes in agricultural cultivation structures and the transformation of the environment by means of campaigns were intended to valorise nature “for the benefit of the people”. In a long tradition of environmental change and exploitation of nature, the 1950s to 1970s can thus be described as a period of forced environmental degradation in China, in which the environment was fought as hostile, mostly without achieving the desired economic benefits, but with severe ecological consequences.

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With the entry into the reform and opening-up period, the mode changed, but not the tenor of subordinating nature to socio-economic objectives. Urbanisation, large-scale infrastructure projects, resource extraction, industrialisation and intensification of agriculture, growing mobility and internal migration, the rising demand for energy and growing prosperity accompanied by changes in the lifestyle of large parts of the society are trends of increasing environmental pollution that run parallel to forced economic development [5]. Overall, China’s current environmental problems should thus not only be seen as the result of today’s economic dynamics and policies, but are closely related to social attitudes and state policies that have evolved over centuries.

Current environmental problems

Air pollution, depleted or polluted soils and poor water quality characterise China nationwide nowadays. The old industrial regions in the northeast and the industrial centres on the Yangzi and Pearl River deltas are particularly affected by emissions from acid rain, chemicals from agriculture, industrial and mining activities, and unregulated waste disposal. In the mid-2000s, China’s national environmental authority first pointed out that positive developments in the economy were used up by environmental degradation because the costs of environmental degradation were equal to the value of annual economic growth. A recent study of the World Bank draws a similar conclusion. Environmental diseases are one of the cost factors. Many people are also experiencing financial hardship because they can no longer sell the yields from their contaminated soils. Almost 300 Chinese cities, whose previous economic basis was the extraction of raw materials (coal, minerals, forestry), are now officially considered to be “resource depleted”. For many inhabitants, this means the loss of their jobs, and so several million people are dependent on basic state services.

Especially the “thick air” in China’s cities as well as lacking food safety fuels the discontent of the population. The number of environmental protests has steadily increased over the last two decades. The internet and new possibilities of digital networking are proving to be

important information and mobilisation tools. In surveys on the concerns of the Chinese population, environmental problems always rank among the top issues. People expect solutions from politics. This is not surprising in a state that leaves society little room for debate and self-organisation and claims responsibility for all relevant issues. But China's leadership now has a vital interest in improving the environment, not only for reasons of political stability and legitimacy. Innovation and the production of high-quality goods are essential for further positive economic development. New environmental technologies and, for example, electro mobility are possible ways to escape the dead end of cheap mass production and fit into high potential international markets.

Environmental policy in a multi-level system

The economic and social dynamics from 1978 onwards with the transition from plan to market have changed the political structure in China. Liberalisation and decentralisation – that is the transfer of responsibilities to subordinate levels of government – have given the provinces, cities and counties room to negotiate with the central government in Beijing. China's political system is thus characterised by a multitude of actors with diverse vested interests that operate within a complicated matrix of vertical and horizontal official competences. This makes it difficult to manage and enforce policies, laws and minimum standards nationwide. Many legal texts only express general principles, are not very detailed, and remain unspecific with regard to explicit responsibilities. This results in major enforcement deficits in the implementation of environmental standards. Unclear responsibilities, often inadequate equipment and qualifications of local administrations, as well as a weak legal system that is unable to ensure enforcement of laws and claims thwart efforts for more environmental protection. In addition, there is local protectionism, corruptive behaviour and double reporting, in the context of which results that vary in content are reported upwards. Local authorities often pursue their own political goals in such a context.

Fieldwork shows that testing areas and model regions are mechanisms by which the central government encourages compliance and diffusion of environmental standards through incentives. Sometimes, however, problems are merely shifted when cities relocate polluting factories to neighbouring rural areas in order to improve the local environmental conditions. In other cases, new methods are first tested on a manageable scale before being adopted in nationwide policy standards. This enables institutional learning as well as the "import" of ideas and approaches that have proven successful in other regions or abroad.

"Ecological civilisation" as a catchword of recent Chinese environmental discourse has become part of the fixed ideological repertoire of terms since the 18th Party Congress in 2012. While the first component "ecology" (shēngtài) is linked to the idea of preserving and saving resources, the second component "civilisation" (wénmíng) is related to a broader concept of civilisation with which Chinese governments have been responding to current problems since the 1980s. For example, a "spiritual" civilisation in earlier times has been differentiated from the "material" civilisation in order to ideologically distinguish acceptable prosperity from greed and to be able to guide the morals of the population

accordingly. Consequently “civilization” describes an exemplary life to strive for. There is hardly a place in China today where there are no signs urging people to behave in a “civilised” manner. The term “ecological civilisation” attempts to overcome the frontline position of growth and environmental protection and at the same time remains vague enough in terms of content that it can be used flexibly politically. Especially in recent years, the political leadership has taken more vigorous action against environmental violations with renewed emphasis and on the basis of a new environmental protection law.

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For the Chinese central government, however, environmental issues do not rank high on the list of priorities primarily because of social discontent and the potentially associated protests that could develop into a threat to political stability. Economic calculations are by far more relevant: Environmentally friendly processes and innovation suit with the urgently needed shift from heavy industry and overcapacity mass production to high-tech and quality products “Made in China 2025”. Innovation and the production of high-quality goods are essential for further positive economic development. Electro mobility, for example, is therefore considered to be one of the sectors that can point the way out of the impasse of cheap and low-value goods production. Capacity building in this sector could turn out to be another pillar of growth and create urgently needed jobs.

China and climate change

China itself contributes significantly to climate change through greenhouse gas emissions. However, it is itself also affected by climate changes due to temperature increases, an increase in extreme weather events, glacier melt, changes in the amounts of rainfall and thus changes in the already fragile water balance. According to the Ministry of Science and Technology, the sea level along the coastal areas rose by 2.9 millimetres per year between 1980 and 2012. The average temperature in China rose by 1.5 degrees Celsius in the hundred years since 1909, and from the 1970s to the beginning of the 21st century, glaciers have receded by 10%. As many river systems in Asia depend on Tibet as a “third pole”, the melting of glaciers and the change in water storage through snow and ice affect the seasonal river water levels of the Yangzi and the Yellow River and pose a challenge for the management of water flows.

Falling river levels and rising sea levels, as well as the increase in natural disasters, call for adaptation or mitigation in many ways. A further rise in sea level could hit China’s prosperous coastal areas in particular, which could shrink China’s economic output significantly. Erosion of the coastal areas in combination with land reclamation activities

have therefore led to the construction of a new “Great Wall” in the form of dikes and protective walls. The most frequent events in China in the last 15 years are floods and inundations, as well as storms, which regularly cause severe economic damage and are increasingly associated with climate change.

China has become increasingly involved in the global climate negotiations and is taking a variety of steps to reduce CO2 emissions, including building up renewable energy and regulating the domestic coal industry. Nevertheless, China remains one of the world’s largest coal consumers. The government has adopted numerous measures to curb coal consumption. For example, the 13th Five-Year Plan (2016-2020) provided for stricter limits and efficiency standards for power plants; furthermore, import duties on coal and a cap on coal capacities at 55% in the energy mix are planned; this is to be achieved by expanding the share of renewable energies.

The coal industry was and still is one of the main employers in China and enabled the countries rapid industrialisation. But a large share of the Chinese coal resources is of substandard quality and mining is difficult. Mining by the Chinese coal industry saw a relatively continuous increase in production volumes since the 1970s, but since 2014 production volumes have stagnated. While the coal industry was dominated by state-owned enterprises in the first phase of the PRC, the importance of locally owned mines grew with the onset of the reform and opening-up policy after 1978. This made it possible to cover the energy demand more flexibly, and the smaller companies operated more profitably, although often at the price of severe environmental damage. From the 1990s, the coal industry directly employed between 6 and 10 million people, according to different estimates. Due to the large number of actors involved, including powerful state-owned corporations, as well as wrong incentives in the transition from plan to market, regulation of this industry is difficult. Small mines in particular, which have been criticised for two decades due to dangerous working conditions, their negative ecological balance and competition with large companies, have been closed in recent years. But this has socio-political consequences especially in regions that are one-sidedly dependent on coal.

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Interventions in the industry also have an impact on electricity and consumer prices, so that regulatory measures meet with a wide range of resistance. Mines are therefore often “formally” closed but continue to operate de facto, as can be concluded from subsequently corrected data on coal production. This shows a basic pattern of Chinese politics, which can be described as the relative independence of the provinces, cities and counties, which often

disregard central guidelines in the interest of their own economic development. At the central government level, purchase quotas for coal-fired power plants, a lack of grid connections for solar and wind energy suppliers and a regulated electricity price make it difficult to expand alternative energies. A reform of the sector with changes to pricing mechanisms, the electricity trading process and electricity distribution was announced in 2015 (document no. 9). Overall, the shift from fossil to renewable energy sources in China, which makes sense for ecological reasons, comes with a multitude of socio-economic challenges that can only be implemented slowly in regulatory terms.

China’s role in international climate policy

China will strengthen its 2030 climate targets, reach the peak of emissions before 2030 and aim for carbon neutrality by 2060, current President Xi Jinping announced in September 2020. China’s measures during the pandemic also contain many elements for a “green recovery”, but the policy still lacks a clear direction for a low-carbon economic course. Overall, however, the country has undergone an interesting transformation in international perception in recent years. Long considered a “climate sinner”, it has recently been perceived as a constructive actor. Not only has China achieved some success at the national policy level with regard to reducing greenhouse gas emissions, but there are also numerous efforts at the subnational level. In 2016, for example, a total of 23 metropolitan regions, responsible for approx. 16 percent of CO2 emissions, committed themselves in an international initiative to significantly reduce their respective CO2 emissions by 2030 (APPC initiative).

Such initiatives attempt to conceptually link environmental protection, energy policy and regional development under the umbrella of climate protection and to align local policies with this. Many other local policies aim to improve the quality of the environment and thereby solve tangible problems. So high health costs or social discontent can be reduced and tourism can be promoted as a new source of income [6]. Accordingly, cities that are green and worth living are associated with new economic opportunities. As Chinese urban dwellers increasingly “vote with their feet” and take jobs in regions with less pollution, this puts pressure on local leaders. Although this hardly applies to major cities like Beijing and Shanghai, in a country whose society is ageing rapidly due to the one-child policy, a clean environment can be an important locational advantage in the urban competition for qualified workers. This aspect could also lead China further towards a “green society”.

Not least in response to the COVID-19 pandemic, the government has taken support measures to lead industry and the workforce into a modernised digital economy and to accelerate the expansion of renewable energy systems and electric vehicles. At the same time, however, China continues to rely on the coal industry and is considered to be the world’s largest financier and builder of infrastructure for fossil and renewable fuel. Of all the coal-fired power plants under development outside China, a quarter is financed by Chinese financial institutions or companies.

In this respect, COVID-19 has increased the uncertainty about the development of Chinese

emissions until 2030. Many sectors have returned to pre-pandemic production levels with corresponding emissions. It remains to be seen to what extent China will provide impulses in the new five-year plan to curb the coal boom and focus on low-emission infrastructure projects and clean energy concepts.

REFERENCES

1 — Bray, F. (2013): *Technology, Gender and History in Imperial China: Great Transformations reconsidered*. London / New York: Routledge, 57.
2 — Kuhn, P. (2002): *Origins of the Modern Chinese State*. Stanford: Stanford University Press, 7.
3 — Mallory, W. (1926): *China: Land of Famine*. New York: American Geographic Society.
4 — Shapiro, J. (2002): *Mao's War against Nature: Politics and the Environment in Revolutionary China*. Cambridge: Cambridge University Press.
5 — Naughton, B. (2007): *The Chinese Economy: Transitions and Growth*. Cambridge: *MIT Press*, 488.
6 — Kahn, M.; Zheng, S. (2016): *Blue Skies over Beijing: Economic Growth and the Environment in China*. Princeton/Oxford: Princeton University Press, 186.

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