



China's water pollution control policy: views from two sides

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More than two years ago, in February 2015, the State Council of China issued an Action Plan for Water Pollution Prevention and Control¹ (named below “[Water] Action Plan”).

The Chinese Academy for Environmental Planning (CAEP), from the Ministry of Environmental Protection (MEP), supported the design of this Action Plan with a devoted taskforce. In the perspective to contribute to the policy dialogue on environmental protection policies between China and European countries, the CAEP and IDDRI cooperate for the production of joint analyses of environmental policies in China and in Europe. Water policy is a critical component of both EU and China environmental policies. This issue brief provides an assessment of critical points for the implementation of the Chinese Water Action Plan. It aims at contributing to a better understanding of China's new water pollution policy, using the comparison with the European water policy as an entry point to identify critical implementation issues. It is twofold: Part 1 depicts the situation of water resources in China and explains the main provisions of the 2015 Water Action Plan. Part 2 then draws insights from a comparison of the Action Plan with the European water policy and governance.

1. Authors' translation from “水污染防治行动计划” in Chinese

KEY MESSAGES

- The 2015 Chinese Water Action Plan is expected to play an important role in the transition of the Chinese society and economy to a new era, dubbed the “New Normal”.
- The Action Plan is mostly based on a command-and-control approach and a long and detailed list of abatement rates, pollution thresholds and technical targets to be implemented no later than 2020.
- It resembles the European Urban Waste Water Directive, although this cornerstone of European environmental regulation took more than two decades to implement.
- The Chinese Action Plan introduces a type of “sunshine regulation” by requiring local authorities to provide for performance indicators and be evaluated based on these. If stringently implemented, this might prove at least as effective as the European public participation approach in creating a policymaking momentum—strongly needed in both contexts.
- Shifting from an “authoritative-technical” focused policy to a “new governance” land-use-based policy is an honourable and ambitious task, but it requires mainstreaming water objectives in the general economic and urban policymaking, which would mean reorienting these sectors and urban plans towards a new type of economy.

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1. INTRODUCING THE CHINESE WATER ACTION PLAN

Water issues, a rising concern for China

The double-digit Chinese economic growth rate of the past two decades was accompanied by rapid environmental degradation and damages.² According to different assessments, total environmental loss could reduce up to 10% of total Chinese GDP.³ Now facing both an economic slow-down and increasing threats of climate change and local pollution, the Chinese authorities claim they lead a transition toward a green economy, based on reducing the share of energy intensive and polluting sectors in the Chinese economy, and enhancing high value-added and technology intensive industries.

To reflect the need of improved governance to ensure such a transition, this endeavor was dubbed “New Normality” (usually called “New Normal”) in the 2015 Government Work Report of China.

As a result of the past expansion of polluting heavy industries on the one hand, and increasing water demand from agricultural and household sectors whose life standard improved on the other hand, China has experienced severe problems of water pollution and overexploitation. For instance, total emissions of Chemical Oxygen Demand (COD) went up to 23.5 million tons, and ammonia nitrogen to 2.46 million tons,⁴ thus far overpassing rivers capacity to absorb such pollution loads. Roughly 60% of underground water has inferior standards of water quality, and, as it is the case worldwide, more than 80% of petrochemical and chemical installations are located within close range of rivers and water tables. The utilization ratios of water resource of Hai, Yellow and Liao rivers (as major water supply in Northern China) are respectively 106%, 82% and 76%, notably due to agricultural activities. Per unit of GDP, water utilization in China is still 2-3 times higher than advanced world average levels. Consequently, aquatic ecosystems are severely depleted in many regions.

The policy response: a Water Action Plan

Facing such an increasing pollution and important threats to the general water system (ecosystem and delivery), the Chinese government drafted an “Action Plan for Water Pollution Prevention and Control” (AP thereafter). This plan was examined and discussed at the Politburo of the Party, approved by the President and then issued by the State Council (presided by the Premier) in April 2015. Together with a previous AP for air in 2014 and a forthcoming AP for solid waste, these plans were the first ever environmental policies being approved by the Politburo. This process and this status tend to demonstrate a political willingness to control water pollution in China. Although this AP is not exactly a law, its approbation by the Politburo provides this text with a certain authority (somehow stronger than a law), alongside the “New Normality” national project. In the Chinese context, this gives a very strong impulse to local stakeholders in implementation and compliance. The AP aims primarily at improving water quality and water use efficiency, in addition to providing a general governance framework. It sets up a national strategy and governance for water pollution control, with “end of the pipe” measures as well as preventive action, and promotes water-related green industries (as well as green urban planning). The AP therefore does not ambition solely to tackle water pollution, but also to make water policy a part of the New Normal transition of China.

According to CAEP’s estimation, implementation of the AP could entail up to 5.7 trillion Yuan (roughly € 800 billion; public and private expenses), which is a little less than 10 % of the country’s GDP (China’s GDP in 2014 is 63.6 trillion Yuan), of which 13% are direct budgetary expenses and 87% are indirect expenses (economic effects of budgetary expenses, calculated based on a computable equilibrium model). Implementing such a plan would represent 3.9 million jobs. The value of environmental benefits derived from implementing the AP was estimated at 1.9 trillion Yuan (€ 247 billion), of which 1.4 trillion Yuan (€ 182 billion) are direct benefits (i.e. derived from the economic use of improved environmental resources).

At the institutional level, the AP is supposed to further improve water governance in China by clarifying responsibilities, introducing more market-based instruments and implementing water quality target management mechanisms. It also aims at enhancing public participation in water pollution and quality control.

2. See <http://theory.people.com.cn/n/2015/0515/c40531-27003994.html>

3. China’s environmental suicide: a government minister speaks. Interview of PAN Yue, vice minister of China’s Ministry of Environmental Protection. http://www.opendemocracy.net/democracy-climate_change_debate/article_2407.jsp

4. See Environmental Statistics Communiqué (Annual), Ministry of Environmental Protection of China, <http://zls.mep.gov.cn/hjtj/qghjtjgb/>

Main provisions of the Water Action Plan

Concerning water quantity management, the AP is based on a previously defined cap on total water abstraction, but it defines more precisely efficiency rates to be targeted in water utilizing sectors.

Measures targeting industry include shutting down obsolete plants, increasing environmental requirements for new industrial settlements, improving requirements for new investments and publishing the list of installations that achieve environmental standards in order to encourage clean production. Previous pollution discharge standards (the level of polluting fees in particular) proved insufficiently stringent to achieve a decent water quality. Renovated standards are issued. They are adapted both to regional development conditions and to the degree of water pollution.

Regarding urban water treatment infrastructures, the AP stresses the need to properly manage sludge and decides that the rate of safe treatment of sludge should be no lower than 90% by 2020.

The AP promotes farm extension and upscaling of agricultural businesses, in order to improve the pollution control systems, and identifies protected areas linked to major water resources, where polluting activities are banned. The AP also intends to promote the use of bio-fertilizers with fiscal incentives and reinforcing advanced management of fertilizer use. Objectives are defined with 2020 as time horizon: total coverage rate of advanced management of fertilizers should attain at least 90%; fertilizer use efficiency should increase up to at least 40% and crops disease prevention management system should cover at least 40%.

The AP requires establishing detailed environmental standards for vessels and port facilities and improving waste treatment capacity in ports with 2017 and 2020 as deadlines for coastal and inland ports, respectively.

To reach these objectives and implement these standards, the AP puts forward market-based instruments, referred to as means to allow for achieving water pollution targets with higher economic efficiency: progressive water tariffs, pollution fees and a call for the implementation of a pollution emission permits system at national level, based on previous experiences from pilot projects in China.

2. COMMENTS AND COMPARISON WITH THE EU CONTEXT

Insights from the European former water policy

The Chinese Water Action Plan can be related to a series of EU water directives that were adopted

during the 1990's, and have been driving water policy up to very recently. The flagship of European water regulations has long been the Council directive 91/271/EEC concerning urban wastewater treatment, generally mentioned as the "Urban wastewater treatment directive".⁵ As the Chinese AP does, this directive sets a series of specifications regarding how wastewater is to be collected and treated by European urban agglomerations and industries, with graduation in severity and deadlines according to the size of urban areas. During more than 20 years, this directive has been the backbone of European water policy. Its philosophy was to reduce the major fluxes of pollutions in rivers and estuaries, by targeting organic pollution and nutrients that were affecting the quality of surface water and of rivers ecosystems, and were sometimes even limiting the very possibility of life in water environment. This directive was an "authoritative-technical" one: its transposition in Member States regulation meant imposing new stringent standards of de-pollution, as it is the case with the Chinese AP. It also resulted in a sharp increase of water investment needs by municipalities or water utilities, which were reluctantly accepted by Member-States. In France, it took a significant increase of political pressure from the ministry and the prefects, and a special increase of funds allotments to bring the last agglomerations in breach with the directive requirement to fulfill them and catch up a disgraceful delay.

It is therefore noticeable that the Chinese AP, which resembles an even reinforced wastewater treatment directive, leaves only five years for implementation. The comparison with European implementation of the same type of policy would suggest either a need for skyrocketing Chinese water investments, everywhere in the country, in domestic as well as industrial installations (which is accounted for in the calculation of CAEP on the increase in public expenses and associated expenses; its impact on local public and private financing systems will be very important), or, if not, the risk of a long delay in implementation, or a combination of both.

The challenge ahead: shifting to governance by objectives

European water policymaking is now structured by a "second generation" directive, typical of the "new governance" model (Eberlein & Kerwer, 2004), the 2000/60/EC "directive establishing a framework for Community action in the field of water policy".

5. <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31991L0271>

The “Water Framework Directive” (WFD) relayed and included the Urban wastewater directive as well as a Nitrate directive that was imposing thresholds levels of nitrate concentration in waters. But the WFD also completely changed the formulation of the European water policy. Instead of top-down authorities imposing a series of pollution treatment standards or norms of water quality, it left the definition of measures and standards up to the Member-States to design. It however created a procedure to determine quality objectives for all types of water “bodies”, and made reaching these objectives before 2015 mandatory, while allowing postponing this achievement to 2021 and ultimately 2027.

Assessments available today⁶ suggest that European waters fall short of meeting this standard, although their overall condition had been noticeably improved after the completion of the previous urban wastewater directive. The remaining gap is especially wide for groundwater (polluted by pesticides and nitrates), and for wetlands, intermediate and small rivers, the habitat of which are often too severely altered to allow for a proper ecological functioning. Since measures to be undertaken are much less “technical” and concentrated in point-sources (industry or city discharge points), and would therefore require land-use changes in agricultural lands as well as in urban sealed soils, all Member States experience significant difficulties in meeting these objectives. It is indeed more difficult for a local authority to impose a change in agricultural and urbanistic policies (as is also put as a priority in the AP) than to require upgrading a wastewater treatment plant (even though we saw that fulfilling the latter was generally achieved after long delays). Shifting from an “authoritative-technical” focused policy to a “new governance” land-use-based policy is an honourable and ambitious task, but it requires mainstreaming water objectives in the general economic and urban policymaking, which would mean reorienting these sectors and urban plans towards a new type of economy. This is particularly true when economic growth and competitiveness are prioritised over environmental objectives necessitating a change of model with long-term benefits but short-term transition costs. This could also be a challenge in China, and the stress put in the AP on the “new normal”, favouring less polluting sectors of the economy over polluting ones will be critical to ensure not only end-of-the pipe solutions are functioning.

6. <https://www.eea.europa.eu/themes/water/european-waters>

Sunshine regulation versus public participation

The rationale of the Chinese AP rests on some kind of “sunshine regulation”: the AP indeed requires, from the regional authorities, the displaying of a significant amount of information regarding the resource (quality and quantity of water) and the relative situation of actors. Rather than a public participation system, it provides for a system by which leaders and laggards will be signalled to the attention of the public. In contrast, the European WFD requires a public participation process at all major stages of the management cycle, and an extensive displaying of information regarding the quality of waters, but its requirements regarding water users, and their performance in addressing pollution issues, appear much less ambitious than those of the Chinese AP. The WFD requires only that general data is provided regarding how households, industry and agriculture—in each river basin—have to cover the costs they induce. However, designating more specifically the main actors responsible for water quality issues in a given water body was strongly opposed by representatives from governments in the negotiation process that produced the WFD.

Basin scale and economic instruments

Both approaches, Chinese AP and European WFD, have acknowledged the importance of organising action at river basin scale, although this is more central in the WFD’s organisation. The importance of ecosystems and the biodiversity of water milieus is key in the WFD, where it is the overarching criterion for defining objectives, evaluating the water condition and progress made. It is present as well in the Chinese AP, which introduces this criterion in important river basins of the country.

Lastly, both the Chinese AP and the European WFD require that economic instruments be increasingly used as means to regulate water use, with a reinforced system of taxes and fees. The Chinese AP seems to go a little further in this direction, in that it encourages the exchange of pollution permits. However, in Europe as well as in China, the actual implementation of the polluters-pay principle remains challenging, since it potentially contradicts other strong economic policy objectives such as the competitiveness of national industry and, singularly, of the agro-food sector. ■