Comparison and reference of water pollution prevention and control legal systems between China and Bangladesh

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ABSTRACT

Water pollution problem fledges its wings around the world and China and Bangladesh is also not its outreach. This study aimed to analyze the key water legal issues faced by China and Bangladesh, as well as the institutional and regulatory arrangements in place to address these challenges. This included approaches to water resources allocation and management, pollution control and water use efficiency. The study revealed that the water sources of Bangladesh particularly inland waters are polluted by municipal and industrial sources through a combination of wastewater which is considered as the main reason for water pollution. The study also found that various waste water treatment methods are being explored by industries and various treatment plants, untreated waste water is still being discharged into the water bodies by some industries which accelerate the water pollution both in China and Bangladesh. Thus, effective environmental protection policies compliance drive will bring immense benefit to the environment. Factoring these environmental protection policies into the goals and objectives of various actors involved in environmental deterioration will help policies performance. This will serve as a step forward in the direction of ameliorating water pollution. In China, government has taken rigid steps along with provincial governments to reduce the water pollution. There are still inconsistencies between different departments regarding enforcing the laws. In Bangladesh, the situation of water pollution is getting worsened day by day due to ineffective function of the existing regulatory approaches to control inland water pollution. Despite numerous laws and policies, the velocity of water pollution is out of control. Therefore, the aims of the study were to find out the legal systems of China and Bangladesh that have been using to prevent and control water pollution.

Key words: Legislations, water pollution, industrious effluents, water management, water pollutants.

INTRODUCTION

Water pollution has become a serious problem for every corner of the world. This problem has become more acute in developing countries. China and Bangladesh two densely populated Asian countries are burdened with severe water pollution problem since past years. Bangladesh is a riverine country and owns 310 rivers. Despite having a large number of water sources, Bangladesh feels water scarcity crisis due to growing water pollution. Though water pollution is seen in both urban and rural areas but, urban areas where various industries are built-up are the main reasons for water pollution. Being an agricultural country, water pollution is caused by excessive use of fertilizers and pesticides in agricultural fields that sweep into the water bodies. However, to address these growing problems, Bangladesh Government has attempted to implement a legislative and institutional system and enacts various types
of environmental laws and regulations to combat environmental pollution. Throughout China’s history water has always been an essential part of political and economic life and important to the country’s prosperity and stability.

Containing more than 1500 rivers China is also facing water pollution problem through the decades. With the rapid economic development after the reform and opening up in China beginning in the early 1970s, environmental pollution problems became prominent. The rapid economic growth has created great challenges to water resource management, owing to growing demand for water and a scarcity of available resources, coupled with severe water pollution and other water-related environmental concerns. However, China has started adopting environmental legislation to minimize the water pollution and protect water resources across the country. But there are still some insufficiencies and lack of strict enforcement of these laws both in China and Bangladesh. Therefore, updating the existing laws and effectively applying environmental laws can help from degrading environment and water pollution for present and future generation.

**SIGNIFICANCE**

Water pollution in Bangladesh is amplified by population growth, poverty, urbanization, industrialization, poor sanitation, excessive use of pesticides and fertilizers in agriculture, inefficient solid waste management and lack of consciousness. Legislation directly or indirectly related to protection of water pollution is present in Bangladesh. After the independence of newly born country Bangladesh, a number of government agencies, Non-Government Agencies (NGOs) and other private organizations either emerged or engaged in water development projects in Bangladesh. Currently, 13 different ministries along with 35 government organizations have been identified which are entrusted with the task of developing water resources management in Bangladesh. Many legislative enactments have been made to address environmental concerns. Water Pollution Control Ordinance 1973 was the first legislation in Bangladesh about water pollution. Then in 1977, Environment Pollution Control Ordinance was declared. In 1992 another Environmental Policy was declared and the Government of Bangladesh has additionally organized various supplementary arrangements such as the Forest Policy (1994), the Fisheries Policy (1998), the Water Policy (1998), the New Agriculture Extension Policy (1995), the Energy Policy (1995).

China’s economic prosperity mainly lies in effective management of water resources. In the past 50 years, China has made significant investments in water management and infrastructure, which has led to significant achievements in water supply, irrigation, flood control and hydropower generation. Despite significant investments in water management and infrastructure, more tangible innovative policies and incentives are required to strengthen and better integrate water management at both national and regional levels. However, the country is still facing acute challenges with respect to both water quantity and quality. China has implemented a series of reforms and pilots in recent years. These have been designed to address the many water-related challenges, including water scarcity, water pollution, ecological degradation and increased risks and impacts of floods and droughts. The strictest water resources management system established three major control objectives, known as the Three Red Lines and the construction of an “ecological civilization” has become one of the government’s highest policy priorities. As like Bangladesh, China itself also has faced different problems such as enacting and implementing legislations, inter-conflicts between the ministries to prevent water pollution.

China and Bangladesh may interchangeably help each other with their legal experiences in prevention of water pollution in some extent. In facing environmental challenges, the Chinese experiences will make important contributions to the global discourse especially for the developing country Bangladesh for instance. Since the 1980s, when China implemented reform and an open policy to the outside world, the country has made significant progress in developing and allocating water resources and in conservation and protection. This has contributed greatly to social and economic development and people’s well-being. A joint study held between the World Bank and the Development Research Center (DRC) of China’s State Council in 2018 stated that “The Chinese experience in managing the development of water resources also has important lessons for other transitioning economies and informing efforts to address global risks to economic progress, poverty eradication, peace and security and sustainable development” (https://www.worldbank.org 2018). China has seen its success in preventing environmental pollution in large extent though it has to be effectively work to sustain preventive measures pollution particularly water pollution. Bangladesh, in this case can get legislative experience from China since water pollution is a major concern there. Simultaneously, China also may obtain information from Bangladesh and imply its own regions. Amid of the growing global awareness of environmental issues; Bangladesh’s commitment to preservation of the environment and the achievement of sustainable development has been quietly strengthened.

**PREVIOUS STUDY**

In line with international legal developments, both China and Bangladesh have promulgated policies and enacted legislations as a framework for the protection of water resources from pollution. Various legal and policy frameworks have been developed to address the sustainable management of inland water resources focusing on water
pollution prevention. In order to control inland water pollution, several legal and policy initiatives have been undertaken at international, regional and national levels. In the last three decades, the United Nations (UN) and other international organizations devised a set of standards for protecting water from pollution. In 1972 the UN Conference on the Human Environment (UNCHE, 1972) established the UN Environment Program (UNEP) to address the water-related environmental problems of the world (Wensely, 1994). The depletion of inland water resources is considered one of the major challenges human civilizations is facing for the 21st century (Aaron, 1999). Both quality and quantity of inland water is deteriorating due to over consumption, mismanagement of resources and water pollution. Thus, proper utilization of inland water resources is an emerging issue that demands national, regional and international concerns as they are important in safeguarding quality of life and in promoting Sustainable Development (SD) (WCED, 1987). Inland water resources play a significant role for a developing country like Bangladesh.

The country is gifted in abundance with rain and river water, but is in a grave situation regarding the availability of pure and sufficient water for drinking, household purposes, agriculture and fisheries (Inamul, 2008). Rivers, wetlands and the seasonal monsoon flooding are the lifeblood of Bangladesh. Though, Bangladesh has significant inland water resources, the people are not able to appropriate the optimum benefit out of these (Murphy and Guo, 2011) because of increasing population and ever-expanding economic activities (Ahmad, 2003). To address these issues, the government of Bangladesh has developed some long term policies to control and protect inland water pollution to cope with emerging issues in the water sector. The Institute of Water Modelling (IWM) in Bangladesh made an observation that even though many more legislative provisions exist, they are lacking in the effective implementing principles for controlling inland water pollution of the country (IEPC, 2007). It is however important to note that the government of Bangladesh has taken some important steps towards meeting the challenges of inland water management. China's environmental problems are so extreme because China has condensed the West's century-long environmental struggle into a couple of decades (Zhou et al., 2014). Water crisis caused by water pollution has been shown to be a serious social problem since the late 1980s (Wu, 2009). Both industry and agriculture use massive amounts of water and create massive water pollution.

The polluted water cannot meet drinking-water standards, so it is also a quality-based water shortage country (Jiang, 2009). The establishment of environmental court is a new phenomenon in Chinese environmental law. While there were experimental environmental courts in the late 1980s, the functioning ones were established starting in 2007 and they are often divisions of the Intermediate People's Courts (Wang et al., 2010). Environmental courts came about in China as the result of pressure by local officials due to pollution of water reservoirs, lake and rivers. In April 2015, China announced an action plan titled the "Water Pollution Prevention and Control Action Plan" (Action Plan) (WPPCAP, 2015) coordinated with more than 12 ministries and government departments. The Action Plan aims gradually to improve the water quality around the country by 2020, to improve the ecological environment quality by 2030 and to complete the improvement of the quality of the ecological environment by the middle of the 21st century. The above discussion reveals that there is a gap between the planned and actual utilization of water resources in China and Bangladesh. The main objectives of various policies and legislations have to improve quality of life of the people, to alleviate poverty and to conserve environment from being polluted. These cannot be achieved without institutional strengthening and comprehensive planning within an overall development context.

**METHODOLOGY**

This study examined the law and practices as regards water pollution in China and Bangladesh and pointed out the defects and deficiencies of the legal systems and practices and also put forward some specific suggestions from the perspective of China and Bangladesh. The study is a secondary evaluation of existing environmental laws regulating water pollution in China and Bangladesh. The secondary literature and instrument, statutory and case law, relevant public records, text books, administrative and public records, magazines and policy papers, available statistical data, reports of various NGOs, government reports, opinion of experts were reviewed and incorporated to complete the study.

The analysis of the legal systems of water pollution prevention and control between China and Bangladesh

Though China is using all level of efforts to make water sources safe from being polluted but still there are unsystematic, uninformative and impractical management are seen for water resources protection. In recent years, investment in water resources protection had been low, leading to outdated monitoring equipment and outdated analytical instruments for water resources protection agencies, which has greatly affected the efficiency of water resources protection. Despite proper guidelines of the Water Pollution Prevention and Control Law, industrial pollution and its discharges are polluting water bodies heavily. More than 80% of sewage is directly discharged into waters without treatment, more than one-third of China’s rivers have been polluted, more than 90% of urban waters are seriously polluted, and nearly 50% of key towns’ water sources do not meet drinking water standards.
According to the "Water Pollution Prevention and Control Action Plan" that was issued in 2015, water treatment will extend from "point source pollution" at the terminal level such as sewage treatment and interception pipe networks to "non-point source pollution" in the whole process of source control, process interruption and end treatment, involving treatment, restoration and ecological landscape.

In 2017, detailed rules for various sub-fields of water treatment were gradually introduced and specific requirements were put forward for sub-fields such as sewage treatment, black and smelly water treatment and sponge city construction. It is required to strengthen the protection and prevention of rivers and lakes, protect water resources, protect water environment, water ecology and water landscape. Though China is using its all level of efforts to make water sources safe from being polluted but still there are unsystematic, uninformative and impractical management for water resources protection. In order to ensure the protection of inland water, conservation and management of inland water resources as well as promulgated effective laws are significantly interconnected and essential in Bangladesh. The objectives of Bangladesh Environment Conservation (ECA) Act, 1995 which was amended in 2010 are conservation, improvement of quality standards and control through mitigation of pollution of the environment.

The Environment Conservation Rules (ECR) 1997 described the declaration of ecologically critical area, procedure for issuing environmental clearance certificate, pollution under control certificate, determination of environmental standards, application relating to pollution or degradation of environment, procedure for hearing of appeal, various services and their fees etc. It sets the Environmental Quality Standards (EQS) to control quality of air, water, noise, emissions and discharge. The 1997 Environmental Conservation Rules specified waste discharge quality standards for all industrial units and projects. To minimize industrious effluents, the National Water Policy 1999 of Bangladesh, Environment Conservation Act 1995, Environment Conservation Rules 1997 have highlighted the effluent discharge problem as a critical water management issue and has set broad guidelines to prevent water pollution caused by industries. The Water Rule 2018 has performed a wide range of functions namely compliance orders, protection orders, removal orders, imprisonment and fines/compensation, the maximum amount of surface water or groundwater that can be withdrawn by individuals or organizations, clearance certificate by Executive Committee in terms of water related projects. However, in the Bangladesh Water Act 2013, there are no provisions found for punishment related to industrial discharges, establishing discharge standards and also for the establishment of ETPs. Additionally, there are no guidelines relating to non-point water pollution sources like fertilizer and pesticides.

DISCUSSION

Considering the points discussed, it can be recommended that the following measures may help to reduce the water pollution and to protect water resources for further pollution. There is need to ensure the effective and functional role of water resources protection and monitoring system. Need to effectively solve the problem of water pollution disputes on administrative boundaries and preside over the preparation of national water quality standards and protection regulations for water sources. The government is required to analyze and calculate the allowable discharge of pollutants in the main water function areas, formulate a control strategy for the total volume of pollutants in the basin, and establish an optimization model for the construction of pollutant reduction and water quality improvement projects in the basin. It is also recommended to establish a river basin water resources protection and supervision system with drinking water source functional areas as the core and study and formulate national water quality standards and protection norms for water supply source areas. Additionally, it is suggested that based on the water function zoning, establish a national water quality monitoring and control system for the main control sections of rivers and lakes, timely forecast the water quality change process of the main rivers and lakes in the country (though already it has been introduced but need further improvements), and analyze and evaluate the compliance status of the water function areas.

CONCLUSION

The environmental laws and rules for preventing and controlling water resources from being polluted in different ways in China and Bangladesh were used insufficiently in the primary stage. Both the governments have proposed the key initiatives and measures to reduce water pollution as it affects the ecosystem and other living beings that directly or indirectly depend on water. It is noticeable that there has been lacking of proper, effective and timely enforcement of the laws on preventing and controlling water pollution that is required to design a comprehensive legal framework and devise measures of the implementation of such laws. It is however observed that China has significantly improved its legal systems and policies regarding to water pollution. Bangladesh on the other hand is also improving its laws and policies to abate the water pollution. For Bangladesh, the declaration of the National Water policy is a bold step towards good governance. It is believed that this policy may reimburse the damages that have already been done to the bio-diversity and environment of the country. Since both the countries rapidly are moving to industrialization; therefore, severe water resource management challenges like water scarcity, water pollution and industrial pollution will increase unless more effective policies are properly
implemented. To meet the water resource management challenges; holistic, integrated, scientific approach with effective water prevention and control laws and policies are highly required.

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