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The Allocation of Water Resources to Competing Interests: The Case of Thailand

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Water is not just a scarce resource but one which is essential to life and human civilization. In conditions of increasing uncertainty regarding the supply of water resulting from global climate change and its effects, as well as continuously intensifying demand for water from industrial, agricultural, tourist and residential interests, the means and effectiveness of allocation decisions has become one of the most important decisions that governmental agencies are required to make. This issue is examined through a case study of Thailand, which is a country in a tropical, monsoon region receiving considerable rainfall during the rainy season but now with enormously elevated levels of demand for water because of industrialization, population increase and the creation of a mass tourism industry. Historically, water allocation has taken place as the result of political contestation between government agencies at the provincial and national levels and private sector organizations and individuals. This system is critically analysed within the context of the potential partial privatization of the water supply system on a functional or geographic basis. Since the existing system is shown to be sub-optimal, suggestions for future directions are reviewed.

Keywords: industry, resource allocation, scarce resources, tourism, water

Introduction

Natural resources are the bases for livelihoods which have been classified in different ways: some are essential for our survival, while most are used for satisfying various needs. Natural resources include land, animals (flora and fauna), energy, the atmosphere and water. Natural resource management deals with managing the way in which people and natural resources interact with each other. It brings together water management, land use planning, biodiversity conservation and the future sustainability of agriculture, mining, tourism, fisheries and forestry in order to maintain people's health, as well as economic productivity. However, in any classification, the use of natural resources creates both positive and negative effect not only for the resources themselves but also for society as a whole this is because attempts to control resources and their distribution seem inevitably to rely on top-down command and control systems which provoke all kinds of unintended consequences in dealing with very complex and interlocking ecological systems (Holling & Meffe, 1996). Understanding the extent and interaction of the various natural resources will be, important in determining how to manage them so as to reach sustainable goals for social and economic harmonization and for future generations.

Water is one of the most important of the natural resources. It is essential for household water supply and community health, agriculture, industry, electrical supply system, transportation, aquaculture, recreation and ecosystem survival. Owing to the existing often unprofessional management regime, fast growing socio-cultural and economic activities, as well as climate change, the water allocation system in Thailand has been inefficient and is possibly unsustainable. This paper aims to examine the nature of the water management system in Thailand with a view to understanding how water resource allocations are made and how they might be better made in the future.

Water Resource Management in Thailand

Thailand has an enormous amount of water resources; annual rainfall is 800,000 mm and this becomes both surface and groundwater. The country has had different experiences in flood and drought conditions over the course of time but such incidents are increasing in recent years, in line with extensive deforestation and climate change issues. The main reason for flooding problems is that most

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of the population lives in low-lying areas (DWR, 2009). In terms of management, Thailand has, in general, prioritized market mechanisms, albeit state-led market mechanisms, as the principal means of economic growth. As a result, water has come to be seen as one more resource which should be managed with respect to providing maximum efficiency for those processes contributing to economic growth (Santasombat, 2011:7). Also, along with an impact from other human activities, such as deforestation, changing patterns of land use and cultivation, recent manifestations of climate change and the incidence of the El Niño and La Niña phenomena have resulted in changing run-off patterns and increasingly violent flooding and prolonged droughts, sea level rises, decreased agricultural and fishery yields as well as other natural disasters such as landslides, land subsidence, forest fires and health-related issues (Marks, 2011).

Thailand is an emerging economy (OECD, 2009) in which social and economic activities are in the process of rapid growth and industrialization. The country is heavily export-dependent, with exports accounting for more than two thirds of gross domestic product (GDP). Accordingly, the country needs a reliable and well-developed infrastructure system and a set of public utilities, for which water is perhaps the most important, which are required to make Thailand a leading performer in Southeast Asia. The form of water resources management in Thailand has been changed over the last decade, in order to reach sustainable natural resources management. One factor to consider in the implementation of new natural management policies in Thailand is the pressure from the new democracy movement and the 1997 Constitution. These new legislations place a great emphasis on decentralization of environmental policy implementation, including water and allow public participation in the policy-making process in order to try to achieve the goal of effective sustainable development. However, management of water has become centralized And managed on behalf of market activities and for large urban centres, notably Bangkok which have great demand for water and which, for political reasons, represent important constituents for recent political administrations. Consequently, local and rural municipalities still lag behind the Bangkok metropolitan and adjacent areas for most water management issues.

The agencies responsible for water resource in Thailand are so many including the Office of the Prime Minister, the Royal Irrigation Department (RID) under the Ministry of Agriculture and Cooperatives, which deals with water for agriculture; the Metropolitan Waterworks Authority (MWA) and Provincial Waterworks Authorities (PWA) are state enterprise under the Ministry of the Interior who deal with water supply and prices (the MWA is responsible for water services in Bangkok, Nonthaburi Province, and Samut Prakan Province, with water from Cho Praya and Mae Klong rivers to produce tap water reaching World Health Organization (WHO) quality, while PWAs are responsible for water supply in the other 74 provinces). The Department of Water Resources (DWR) and the Department of Groundwater Resources (DGR), under the Ministry of Natural Resources and Environment (MNRE), deal with water development, conservation and restoration, while the Pollution Control Department (PCD) under the MNRE deals with water pollution. The Department of Disaster Prevention and Mitigation (DDPM), under the Ministry of the Interior, deals with natural disasters and the Thai Meteorological Department (TMD), under the Ministry of Information and Communication Technology (MICT) deals with the weather and rain forecasting. The Department of Industrial Works (DIW), under the Ministry of Industry and the Ministry of Education also have roles. The National Water Resources Committee (NWRC) was created in 1989 to be the agency that coordinates plans among agencies as well as conducting monitoring and evaluation activities. The Basin Committee was also created to coordinate local plans and implementation among national agencies and the 25 basins of Thailand (DWR, 2009).

There are quite a number of factors that have prevented an effective policy implementation from taking place, including

1. the existence of a gap between rhetoric and the reality,
2. problems of the enforcement of law that are themselves unclear and unenforced
3. the lack of integration among various government units
4. slow policy implementation process

5. the lack of true decentralization in decision making
6. frequent changes of government and government policies
7. the lack of transparency in rural areas
8. corruption within the government
9. the lack of expertise and governmental support for technology and knowledge in environmental problem and water management
10. government's bias in policy implementation towards certain areas
11. the lack of public participation
12. the lack of government's engagement with industry
13. pressure from the highly competitive international market, which causes Thailand rapidly to increase its exports with high consideration for the need of water but little for environmental damage caused
14. inequality between the rich and poor within Thailand's social structure, resulting inequitable access to water between social , groups and
15. Thai people perceive water as 'public good' (WEPA, 2010) and expect the state to provide water supply facilities and infrastructure in order to achieve equitable water distribution.

All the above factors have contributed to failure in the translation of water policies into action, making effective policy implementation a far-away goal that is yet to be achieved. Finding other possible choices for improving water management procedures should be addressed. Accordingly, water privatization might be an alternative way of management for Thai people to achieve a higher level of water service that might also provide a new source of revenue and deploy more expertise and innovation as part of a proactive and solution based market. Since the flexibility of private systems lead to a reduction of time in taking action, compared to governmental system that can suffer from excessive regulation, some of which can be considered to be redundant, as well as ponderous bureaucracy that hinders both action and decision making.

Consequently ,an understanding of the Context of privatization is important and could be of benefit to decision making. This would include the different forms of privatization, reasons for privatization and other issues associated with privatization; Water privatization continues to gain attention at national and local government levels.

The principal reason supporting the idea for privatizating services is to reduce the size and cost of government. Private companies also have a huge profit incentive to privatize water, depending upon the nature of contract. However, many people doubt whether the results of privatizing a particular service will always be positive, especially in the case of water. Traditionally, governments have provided water to people as a public service, although practice has been changed recently to follow the public-private participation scheme. Climate change could be one of the reasons to rush towards privatizing water in the country. The 2007 IPPC report on Climate Change claims that the result of likely climate change will include extreme weather events around the world including droughts. These extreme weather events are expected to worsen as human activities causing carbon dioxide emissions continue to increase, thereby contributing to global warming and climate change.

Privatization is the process of transferring property from public ownership to private ownership and sometimes involves transferring the management of a service or activity from the government to the private sector and it is mostly seen in the countries that are moving towards becoming free market economies. The types of privatization possible include complete privatization, privatization of operations, privatization through contracts, franchising and open competition (Richards, 2004). Privatization of water services has occurred at all levels of government in other countries, including water services, wastewater utilities and waste collection and disposal. The reasons for privatization include cost reduction, risk transfer, a source of revenue, a higher level of service, a need for greater expertise and flexibility. It is argued that the private sector can provide the same services as the public sector but at a lower price, since private contractors are not constrained by the restrictions of the civil service system and public employee collective bargaining agreements. Private contractors might also have greater flexibility in personnel assignments with compensation packages which can increase the efficiency of

operations. Privatization can also help governments to transfer the risks of projects to the private sector, which is compensated by the opportunity to keep profits ultimately made. East Water is the first privatizated water company in Thailand; it was established in 1992 as an implementation of the cabinet resolution. The company was created with the Provincial Water Authority (PWA) as the only shareholder. Later, in 1997, it became an example of share issue privatization (Richard, 2004) when the government sold the shares held by the PWA and transferred the government asset and related responsibility to East Water, which was subsequently listed on the Stock Exchange of Thailand (SET). Currently, the main shareholders are the PWA, the Industrial Estate Authority of Thailand, Electricity Generating Public Co, Ltd. (EGCO Group), as well as some public holdings.

One objective when East Water was first created was to integrate water resources management in the Eastern part of Thailand in order to serve Map Tha Put industrial estate. Map Tha Put is a large industrial estate with an area of some 20,000 rai (1 rai = 1600 m2) and its major industries include petrochemical, chemical product, iron, metal and refinery facilities. As a consequence, Map Tha Put needs a proper water and environmental management system. However, the area involved suffered from a serious drought in the 1990s which the government could not overcome and so decided to privatize the water supply system so that it could be managed via large pipe system to both Map Tha Put industrial estate and households in the adjacent areas. A Water Grid supply system was created with water supply coming from various reservoirs, namely: Nong-Plalai, Dok krai, Klong Yai and Prasae in Rayong province; Nong-Koh and Bang-Pra reservoirs in Chonburi; and Bang Pakong River in Chachensao, in order to supply industrial sectors, households and tourist industries in those three provinces.

Recently, East Water Group's share price has significantly increased in the stock market, which indicates effective management and profits have been made with positive management outcomes and moreover it has been easily able to raise funds for further investment and has been able to reach excellent water management with high levels of customer satisfaction. East Water created another subsidiary company in 1998, Universal Utility (UU), which is responsible for providing clean tap water, maintenance and building a reliable water treatment and distribution system, as well as promoting the quality of life for communities in service areas with high accessibility to clean tap water (with WHO standards of drinking water). Research has indicated that the project has been successful in that it has increased access to piped water services to urban residents who previously had no access and that it had fulfilled its brief to use a differential pricing system that means industry is subsidizing householders and general residents (Zaki & Amin, 2009).

There are other instances of water privatization at the local level under provincial and local authorities, for instance in Phuket. Phuket developed a rich city as the result of tin mining and, after that business declined as stocks of tin were depleted, business owners turn the mine pits into reservoirs and sold the raw (i.e. unprocessed) water to the local authorities to treat and sell back to industries, for domestic use and for the tourist industry. However, such management is not fully effective since the government has always claimed that the problem of water supply in Phuket is that there is an insufficient supply. However, many of Phuket's water users claim that the province does not have sufficient water supply and require the government to look for more water resources from both the local area and adjacent provinces, instead of integrating existing water resources that are spread all over the island. In such a case, privatization might be applied in order to create a pipe water supply system from every reservoir.

The East Water Group has indicated that water privatization in Thailand can be successful. However, it should be noted that the success came from corporations among industrial agencies and people in the area of their water supply, as they have experienced a serious drought in the Eastern part of Thailand. This could be applied to Phuket since Phuket is an island and can also gain the same support for water privatization as long as the private company can supply the island with clean and unlimited water supply at a reasonable price. However, East Water is an example of only partial privatization since the government (PWA) is still the majority shareholder. A complete water privatization project should be considered for application at both the national and local levels for

more efficient water management. It can also be a constructive way to change people's perceptions from water as a public goods to water as an economic good. Noticeably, with economic goods, people tend to be more aware of using water and so are more aware of sustainability and environmental concerns.

Comparative Case Studies in Water Privatization

The cases below act as comparators for Thailand to help determine whether the country should be involved in complete privatization of its water services.

Korea started to promote privatization in 1998 and the first water privatization project started in 2001 (Korean Government Employees' Union, 2012). As a result of economic crisis, with the business sector dissatisfied over the slow management of waterworks in Korea and, also, since the government had to obey the rules of the IMF and implement privatization processes within the government's sphere of activities. However this does not guarantee that management will always be positive. Korean society has become polarized with respect to access to clean water. There is a big gap between urban and rural areas since the Korean Water Resources Corporation (KOWACO) is not willing to take on the management of rural waterworks because they are not considered profitable since there are not a big number of household in such areas and those there are may not have ability to pay.

Consequently, it is often the case that KOWACO excludes rural water facilities from contracts and leaves them for local government (Korean Government Employees' Union, 2012). Moreover, the lack of regular maintenance given to water infrastructure in some small and mid-sized cities has meant that people cannot rely on the quality of tap water.

In addition, the level of water leakage is high and unfortunately the local government has lost interest in these issues. There are some who claim that this monopoly over the service has led to a lack of competition and inefficient water management.

The biggest current problem in the UK's water supply is similar to that in Korea. Water privatization led to the creation the Thames Water in 1989, with the expectation from the residents of London that this would lead to a great water system, including a huge sewage tunnel under the river to conduct the sewage out to the sea in order to maintain a clean water supply.

However, people claim that Thames Water has been behaving unfairly in that they have generated profits from the government's budget and they were able to borrow money for free but, instead of using the capital to improve water supply services and management, instead the company distributed profits to shareholders (Hutton, 2012).

Further, since 1993, Jakarta has also experienced an unimpressive water concession in terms of water supply, water production, water sale and non revenue water services. This is because the Palyja and Thames Water were not willing to service rural areas with low incentive water tariffs (Lanti, et al, 2009). Significant improvement were only achieved in 2001 after the creation of the Jakarta Water Supply Regulatory Body (JWSRB) as an independent regulator to monitor and supervise the concession services to enhance efficiency and to avoid conflicts of interest. It has been observed that those private companies involved had concessions only for water services and still have to buy raw water from the government.

However, as can be seen from the above, water privatization may not be the best option to achieve efficient and sustainable water management. Sometimes the contract between the nation's government and the privatizing company does not legitimately and effectively care for the people in remote areas. Often, the privatization of water has caused an unfair situation when the companies are plainly motivated by the expectation of profits and charge people more for water than they can afford. Consequently, poor people are obliged to find water from other sources, to use water which is not safe or else to go without, with serious public health results.

Water is life. We need efficient management of is collection and distribution in order to reach the goal of sustainable development. However, apart from finding other management options, the government and stakeholders should focus on integrated approaches and achieving public consensus in the process of making policy and when taking those management polices into action. With the impact of climate change, the government sector, private

sector and individuals should all prepare for water security to secure the future together as well as becoming aware of its economic value; this can be achieved by transforming the public utility so that it is managed by private sector at national and local scales-although it is necessary for the private sector to be properly regulated and policed.

Water Allocation Issues

Water is a scarce resource with universal demand: although it was historically treated as a natural monopoly for state or regional governments, the movement towards the New Public Management approach resulted in the desire in many governments to create water privatization schemes. In some cases, privatization was enforced upon states by external sources such as the World Bank or IMF as part of a Structural Adjustment Programme or other form of conditionality (cf. Larbi, 1999). This has been problematic for a variety of reasons, not just related to the issues of equity. As Howe, Schurmeier & Shaw (1986) observed:

> "Water resources are a case ... in which the sale of water nearly always has positive and/or negative direct effects on third parties. Yet, fairly extensive markets have developed for water, and these markets, while sometimes involving rather high transaction costs, appear to have been successful in transferring water from lower-valued to higher-valued use over time (ibid.)."

Water privatization has been problematic, as pointed out, because of the externalities associated with it and the essential allocation problem that pits different and competing interests against each other on a financial basis. The principal constituencies involved, in the context of Thailand, are industry, tourism and residential. As a developing state pursuing a version of the East Asian Economic Model, the Thai state has made extensive use of industry, notably manufacturing, to supplement the basis of agriculture in economic growth. Much of the industry involved has been concentrated, deliberately, in areas of industrial estates which have used water intensively and, quite often, without much genuine oversight with regards to pollution. Tourism has become an extremely important industrial sector in the country's overall economy over the past four decades and, although there has always been an important backpacker tradition, the majority of tourists stay in upscale accommodation for which the water use has always been extensive. When water allocation decisions are to be made, therefore, both industry and tourism have loud and compelling claims to preferential treatment because of their role in contributing to overall economic development and income generation for the whole population of course, the bulk of the profits go to the capital-owning elite but, nevertheless, jobs are provided. The situation is inherently undemocratic, therefore, since decisions are made on the basis of money rather than numbers of people. However, given the poor distributional decisions involving water in the past, it is possible that money-based systems are a more rational approach than has previously applied.

Conclusion

In a world in which the elasticity of demand for water appears to be almost infinite, given increasing populations and use of water in industry and tourism as well as at the household level, there is clearly a need to determine the allocation of water to competing interests. Historically, this was approached by governments who assumed that water was a public good and one which government had a natural monopoly to provide. However, as demand has intensified and the means of cleaning and processing and recovering water has become more complex, many countries have begun to experiment with (or have experimentation forced upon them) using market mechanisms to allocate water. This is a process that has had mixed levels of success depending on where and how it has been tried. It is certainly apparent that careful and close regulation and monitoring by an appropriate body is required before privatization can be countenanced. Even so, through careful management, it seems likely that experimentation will continue. Its progress in Thailand has to date been satisfactory, although more research is required to determine the exact level of customer satisfaction and the extent to which the existing privatization experience is transferable to different parts of the country and transferable in terms of scale.

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