

Regional Forum:

**Regulatory Systems and Networking of Water Utilities
and Regulatory Bodies**

REVIEW OF REGULATORY FRAMEWORKS

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EXECUTIVE SUMMARY

The papers contained in this report were compiled to provide a perspective on the need for economic regulation in the water and sanitation sectors around the world, the progress that is being made to set up regulatory frameworks, and the principles that are guiding this work. Examples are drawn from developed and developing countries and their experience is compared with the challenges expressed by the Asian nations who are participating in this regional technical assistance (RETA) project.

The review makes the following key points:

- Economic regulation is an enabling activity. It is applicable to both public and private sector service providers but its growth in recent years has been stimulated by the growing influence of private sector management in service provision.
- Economic regulation has two primary objectives. They are, to provide a viable commercial climate for the effective management of public utility services and to protect the interests of all consumers and potential consumers in the community.
- There are fundamental 'good practice' principles that new economic regulatory frameworks should incorporate. Independence and transparency are perhaps the key criteria for effective regulation.
- There is no universal model regulatory framework to be recommended. Each nation must develop its own approach to suit its own institutional and cultural circumstances.

The case studies demonstrate that a variety of institutional approaches are possible. They illustrate the extent to which the basic principles have been applied and, in some cases, they identify the potential problems which their absence may lead to.

Water is a vital natural resource for human life. Its management and use is too precious to be left to chance or abuse.

WATER

*Send it cascading over waterfalls,
Wash in it, cool with it, drink it, heat with it,
Swim in it, wade in it, dive in it, splash in it, open your eyes in it,
Or just make cement and build with it.*

*Let it pour from the sky in tiny droplets,
Let it flow in rivers, make electricity from it,
Water flowers with it, wash cars with it, make fountains of it,
Or just leave it shimmering in a river or pool.*

*But watch, and watch carefully or it will go,
And never return.*

(Adapted from the poem 'Water' by Jonathon Kingsman)

REVIEW OF REGULATORY FRAMEWORKS

The Nature of Regulation

The English Oxford Dictionary defines regulation as "*prescribed rule*", being "*control by rules, subject to restrictions, adapt to requirements*". This implies a negative restraint which is not entirely valid in the context that we shall examine it. The application of an effective regulatory framework is an essential enabling activity in the management of water services. As such, it constitutes a vital institutional element in Third World development.

Regulatory powers have been used in most countries for many years to prescribe minimum standards for public service provisions. A good example is the use of World Health Organization (WHO) potable water quality standards for ensuring basic public health needs. Increasing wealth and aspirations have seen these safeguards spread to embrace environmental and social objectives, for example, effluent discharge controls and water availability standards.

Over recent years the role of regulation has grown to embrace economic and commercial objectives. In this role regulation has complemented and facilitated the considerable growth of private participation in the management of water and sanitation services throughout the world. Most observers are familiar with the arguments for placing public services within the private sector with the objective of providing a more focused, commercial- and customer-oriented management of those activities. In order to achieve this, many countries have had to fundamentally restructure their institutional, industrial, and financial frameworks. The introduction of commercial practices and reduction of financial risks for investors have been key issues. Economic regulation encourages and supports this process by creating market conditions suitable for forward investment and service management.

Equally, governments the world over are concerned to ensure that commercial operators do not take undue advantage of their monopoly public service position, to take too much and give too little in return. In some countries it has been possible to reduce this pressure by fragmenting and decentralizing the previous utility operations, introducing some competitive pressures, if not a proper market economy. Providing proper safeguards for water consumers is the second primary purpose of economic regulation. The regulator must have the powers to protect all members of the community, both in terms of the quality of service provided and the price to be paid for it. His ultimate measure of success is to ensure that an excellent standard of service is made available and affordable to all members of the community, on a financially self-sustaining basis.

Some countries restrict private participation to management or service contracts, particularly where unstable political or economic conditions deter more extensive private sector commitments. Regulatory control over this situation is generally achieved through short-term commercial contracts. This arrangement limits the risk to the contractor and achieves a benefit for the community concerned but the approach, by its nature, targets specific areas and rarely addresses the wider issues of effective and productive service provision.

The use of build-operate-transfer (BOT) schemes or similar arrangements can also be managed through contractual agreements but the need for a watchdog role to protect wider environmental and consumer interests becomes more apparent, particularly as the number and diversity of such schemes grows. A series of contract-based agreements can also become a time-consuming and expensive system to administer.

In the years 1990-1997 almost 100 water and sewerage contracts were placed with the private sector internationally. Fifty percent of these were concession contracts, accounting for 80% of the total capital investment in the sector. Once private enterprise management of vital services is regarded as a viable option for a country, there is a need for a strong regulation function, preferably one that is independent of direct political influence.

The transition from a centralized public service ethos to a diffused structure of operating companies under private management can be a difficult and complex process and is not achieved overnight. In several countries private management of public services has been encouraged and then controlled through individual concession contracts, without an appreciation of the benefits to be derived from a wider regulation framework. Many of the Eastern European countries are actively encouraging private investment and management of their services, but their regulatory controls are still evolving and seem barely adequate to achieve their aspirations. By contrast, Chile has evolved both its company structures and its institutions over several years and the development of the regulatory function has been a central part of that process.

The regulator must stimulate and encourage the process of development but, at the same time, he has the task of ensuring that the overall package is affordable for the community in general, and for the poorer members of that community in particular. Government subsidies may continue to play an important part in financing the services but, with long-term viability in mind, the transition to a self-financing, self-sustaining service is a key objective for many of the growing Third World economies.

Last year, when setting out its evolving role in the water sector, ADB made the following statement:

Lack of effective water policies and institutional arrangements is a pressing issue in most of ADB's developing member countries (DMCs). In the absence of reforms, private investments and increased community involvement will remain severely constrained, and potentially wasteful and destructive projects will be embarked upon. ADB's policy recognizes this problem and sets out a process for implementing water sector reforms as a prerequisite to new investments. To avail of ADB assistance, governments will need to adopt national water policies, laws, institutional reform, sector coordination mechanisms, and a national water action agenda.

This report and the Regional Forum in Manila which complements it is primarily concerned with the development of economic regulation to provide a viable commercial environment within which water and sanitation services can be provided on a self-sustaining basis and at proper standards for the population as a whole. In order to be successful in meeting this complex objective a suitable framework must take account of the particular circumstances of each individual country. There is no 'off the peg' solution to regulation and our case studies illustrate that.

The Regulator's Role

It can be argued that in a perfect competitive market economy there would be no need for a regulator. Companies would compete to provide services of the right quality and at the lowest economic price. It is generally accepted, though not universally, that this situation is not a viable one for the provision of water and sanitation services. These utilities, with their extensive distribution systems, tend to be natural monopolies. There is a gap between satisfying customers and meeting basic public health parameters. It is also necessary to have safeguards for the natural environment on which water abstraction and sewage disposal impact. Locked in to companies' networks consumers are unable to favor the better companies or influence price through choice. Thus, the economic regulator's task is to act as a surrogate for the market place.

In order to set up a new regulatory regime the first requirement is political commitment to the process. Adequate powers must be vested in the regulator and some of these may have been viewed hitherto as the province of the politicians. Establishing an independent role for the regulator will cut across existing institutional and cultural norms and create new tensions.

An independent regulator must be able to maintain an arms length relationship with both politicians and also with the service companies, consumers, and other interested groups. In so far as he is making decisions that affect these groups he needs to be able to demonstrate consistency within a prescribed and accepted framework. Although there must ultimately be a political reporting line the regulator should desirably stand aside from the civil service in terms of conditions and funding and he needs a clear legal mandate to conduct his responsibilities.

In England and Wales, the regulator is an individual appointed for several years to give continuity and he is supported by a team of professional specialists. In some countries a commission is appointed to oversee the regulator and his team. In such circumstances great care must be given to its terms of reference and to the individual affiliations of the commissioners. Decisions based on partisan lines would soon undermine the integrity of the regulator. Economic regulators cannot be sheltered from political processes but they must be given a realistic platform in order to achieve their objectives.

Klaus Tilmes of the World Bank made the following perceptive statement at a conference in London in 1996.

In recent years, resistance to the creation of independent agencies has given way to a greater willingness to experiment and innovate. Politicians have recognized the link between competent regulatory decision-making and the establishment of a more favorable environment for private investment. They are also seeing the benefits of having someone else take responsibility for frequently unpopular decisions.

Duties and Powers

The following duties and powers are required in a regulated water and sanitation sector where an economic regulator, in consultation with the quality regulators (public health, environmental protection, etc.) and other key stakeholders, is charged with ensuring viable commercial conditions for investors and operators and with fully safeguarding consumers' interests.

Meet government aspirations for the services by:

- providing a viable commercial environment for the sector
- safeguarding the interests of all consumers and prospective consumers

For this purpose he can specify, monitor, and enforce:

- minimum standards of public health and environmental controls
- minimum standards of customer service (water availability, pressure, etc.)
- service performance targets
- tariff schemes and levels of consumer charges
- asset condition and investment levels

and he can:

- audit companies' performance and gather information
- monitor customer satisfaction
- arbitrate on disputes
- advise government on sectoral issues

Regulation needs to be particularly attentive to the needs of domestic consumers. Private companies are generally more powerful than consumer bodies and the regulator often has to take positive steps in order to redress this balance, particularly in societies where extremes of wealth distribution lead to important issues of affordability and access to services. Denmark explicitly builds consumer consultation into the regulatory process and all countries should build enforceable consumer safeguards into their regulatory powers.

Criteria for Success

At a presentation to the 1998 Annual Meeting of ADB in Geneva the British consultant, NERA, identified six characteristics (they called them governance criteria) required for a successful regulatory regime. They were:

- *Clarity of role:* Regulators have a particularly sensitive position sitting between the traditional powerful influencing role of the politicians and their administrators and the strong vested interests of the operating companies and their customers. The regulator is a new player in the political scene and is regarded by many as non-democratic. It is essential in the interest of all parties that there is a clear statement of the regulator's functions and his objectives in carrying out those functions.
- *Autonomy:* The regulator should be seen as a professional who is able to stand aside from both political and commercial intervention. The norms of the local culture and ways of doing business may erode this in practice. Potential overseas investors will scrutinize this aspect closely because of the regulator's influence on risks inherent in the local economy.
- *Participation:* This is present when all relevant parties contribute effectively to the regulatory process, improving the quality of regulatory decisions and increasing the likelihood of the regulator receiving both support and co-operation from firms, consumers, and others.
- *Transparency:* Regulators should maintain an open operation, publishing regular reports on their activities, and explaining reasons for decisions they have made. This should reduce the likelihood of unfairness or incompetence and it is most important that fairness should be seen to prevail. Transparency of information and process is a fundamental justification for moving regulation away from the political arena.
- *Accountability:* It is essential that regulators' decisions, which are thought to be unreasonable, can be challenged in an effective way. There should be an ultimate right of appeal, preferably into the legal system, rather than the political one. Equally, the regime must avoid the possibility of continual litigation to a degree which renders regulation ineffective.
- *Predictability:* Companies need to be confident that the 'rules of the game' will not suddenly change, either through a change in the overall legal and regulatory framework, or through a change in the way that regulators behave within this framework. Appointing regulators for a fixed term, not at the whim of the current political party, the avoidance of ad hoc decision making and being able to maintain a consistent approach, all build credibility into the regulatory process and breed confidence in its decision making.

In order to carry out his duties effectively and adhere to these criteria the regulator needs the status to stand on his own feet, set his own agenda, and resist undue influence from any partisan group or lobby (known as 'regulatory capture'). The regulatory duties and powers should be clearly specified in law and the following aspects should be given detailed attention:

- The regulator should be a strong, non-partisan person widely recognised as trustworthy. He should be appointed for a fixed period and his report to government should be at the highest level possible. Direct political influence should be minimal.
- The regulator should be supported by a well-paid and respected professional unit, not necessarily large; the use of reputable consultants for specific jobs would be beneficial.
- The regulatory unit should have management autonomy and be financed independently of government, possibly by a charge on operating companies.

- The regulator should publish annual reports and ensure that all regulatory decisions are fully documented and open.
- The regulator should have close and explicit working arrangements with the quality regulators, with water consumers, and with the service operators.
- The regulator should have extensive information gathering powers.
- Appeals against the regulator's decisions should be dealt with by judicial process rather than political judgement.

The Regulatory Package

The job of the economic regulator is both a complex and a sensitive one. Three key means by which he can achieve his objectives are setting standards and prices, measuring performance, and enforcement and sanctions.

Setting standards and prices: The regulatory package can take many forms but essentially it is a contractual obligation on the company which sets out minimum standards for the services and performance targets to be achieved, for example, for service growth and quality improvements. This specification should be based on government aspirations and perceived customer needs. Inevitably, there will be a process of prioritization depending on the pace of change that is considered to be viable. The condition of long life fixed assets employed in the water and sanitation services should also be specified in an asset management plan, with future investment plans designed to prevent their gradual deterioration through under investment.

The physical requirement will be balanced by a financial agreement, which will include assumptions about costs and the levels of investment required and will specify appropriate tariff levels. The income should be designed to recover all costs and place the service on a financially self-sustaining basis. Commonly, tariffs are calculated to give a rate of return according to the value of the assets employed in providing the services. This method provides a reliable income for the company, giving comfort to investors, but may distort the levels of capital investment according to the regulator's assumptions about rates of return and thus does not necessarily encourage greater productivity.

A fixed-price cap system is sometimes used whereby companies have the incentive to make higher levels of profit through innovation and by maximizing their efficiency. An important benefit for customers is that the benefits of greater productivity can be carried forward to give lower water charges at subsequent tariff reviews. The danger is that if the price is set too high, the level of profits may be unacceptable to the community in the short term. Conversely, if the price is set too low, the level and quality of services may fall as the utility struggles to earn a reasonable rate of return; investors are then placed at risk, and the cost of capital may increase accordingly. To be successful this method requires the availability of good information and knowledge about the operation of the system and sufficient safeguards to ensure that companies do not take short cuts in pursuit of profits.

Whichever approach is adopted the regulator has to make a judgement based on the best information and knowledge available to him. At the same time as making the economic assessment he must also consider the issue of affordability. If the community cannot afford the service then either government subsidy is required or a more modest package of service improvements will be necessary. It is an important part of an effective regulatory process that issues of this nature are brought into the open by the regulator, with the community able to contribute to the final decision.

In England and Wales, a package of this type is adopted with periodic reviews at five-year intervals. Many safeguards, both for the regulator and for the companies, are built into the system. The recent five-year tariff review identified the cost of a number of desirable environmental improvements and customers were invited to give their opinions on the tariff

implications. A debate on the affordability of environmental improvements was brought into the open. The issue was controversial, but the regulator was seen to take his decision with all the facts in the public domain.

In situations where price controls are based primarily on individual contractual agreements then many of the aspects outlined above will need to be covered by those specific contracts. In many cases the level of consumer charges will be set through a process of competitive tendering.

Information gathering: The issue of monitoring is fundamental to the regulator's role. By whatever means the standards of service / price package is established it is essential for the regulator to be able to measure company performance in order to ensure that commitments are met and that the interests of customers are protected. Over a period of time the accumulated information also provides the regulator with a better knowledge of the market place and a more informed basis for subsequent reviews.

In order to monitor effectively regulators require extensive information gathering powers. In order to review the regulatory package this needs to include returns on service performance, progress against targets, asset condition, and customer issues. It is also essential that the regulator should be able to audit any aspect of the company's operations that he sees fit. The use of expert consultants for these purposes can add credibility to the process. If companies are able to avoid giving accurate and timely information, thus leading to deficiencies about the knowledge of the systems, the quality of regulation will inevitably be reduced.

Enforcement and sanctions: The third essential tool for the regulator is the power to take sanctions against a poorly performing company. This will normally take the form of a financial penalty but it could extend to removing part of a company's business or, ultimately, to the withdrawal of his license or contract. In this event the regulator needs default powers to place operational responsibility for these vital services elsewhere, at least in the short term.

The regulator should also exercise powers of arbitration and settle disputes between the company and its customers. This is an essential aspect of the regulator's wider responsibility to protect the interests of consumers.

Since 'absolute power corrupts' there has to be an ultimate appeal for both companies and customers beyond the influence of the regulator. Technical issues may require ministerial direction, but it is strongly recommended that matters affecting human rights should be routed to the country's judiciary and not into the political arena.

Institutional Factors

Regulatory influence exists in some form in all economies but very often it is not readily identifiable as a separate entity. The different roles of 'government' can become confused and their identification and clarification is a prerequisite of institutional reform. In the typical public sector economy government bodies often carry out all of the following activities in relation to the provision of public utility services:

- set policy, strategy, goals based mainly on political and social motivation
- set minimum standards, for quality, health and safety, etc.
- set targets, in five-year plans, etc.
- own the service infrastructure
- undertake investment by setting priorities
- manage the services day to day
- set charges, often driven by political and social objectives
- audit their own activities

- arbitrate where there are problems
- look after consumers' interests

The involvement of different arms of the public sector in the provision of water and sanitation services can lead to confusion and compromise and, very often, a loss of accountability. In some situations it can lead on to favor and corruption. Many of the activities listed above are clearly the province of political decision-making but others, such as arbitration, could benefit from an independent position. The management of service operations benefits from more focused commercial skills.

In evaluating its institutional arrangements each country needs to consider carefully where specific responsibilities lie and whether this arrangement gives the most effective use of talents and resources.

Few would argue that 'the public sector', with its ultimate accountability to the population, should determine overall aspiration and policies, and through technical advisory bodies (quality regulators) that it should determine basic health and safety standards. Most would agree that it should retain ownership of the nation's basic infrastructure to ensure control in times of crisis. It can also be argued that social policy should specify basic requirements and safeguards for the poorer members of the community. These roles relate to setting overall priorities and retaining ultimate control.

Beyond this point, the traditional 'hands on' role of government in the provision of water and sanitation services is increasingly being challenged. Is the government with its resource limitations and many competing financial priorities best placed to invest in the infrastructure? Is the public sector best equipped with the managerial and commercial skills required for managing services on the ground? Should the 'government' be arbitrating on its own activities?

Increasingly, service management on the one hand and regulatory functions on the other are being stripped away from their traditional public sector positions. Economic regulation is being established to take on the roles of setting service standards and economic tariffs, performance audit, consumer protection, and arbitration. Long-term licenses and contracts are important to encourage forward investment and foster confidence in the sector. A measure of independence from political influence is required to be impartial and objective in this role and this aspect needs to be addressed explicitly when establishing new institutional structures.

The detailed regulatory framework must be designed for the political, social, commercial and industrial circumstances in which it is to operate. No reform process is likely to succeed if it ignores the wider institutional picture. Regulation can be driven at the national level, as by Ofwat in England and Wales, or it may be conducted at a more regional level in a federal structure such as exists in Australia. Alternatively, as is frequently the case, it may be undertaken by the local municipality, possibly based on a standard contractual approach. Whichever method is adopted, the monopolistic nature of water and sanitation services acts against consumer interests. It is important that the regulator has explicit duties and powers to manage this situation. In doing so it is advantageous for the regulator to be responsible for several companies, allowing him to derive the benefits of comparative competition.

The impact of utility ownership, industrial structure, and political risk are discussed below:

Public or Private Management.

Typically, public services such as water and sanitation have developed within the umbrella of government. In some countries municipal ownership and management of the services have been very successful; in many, it has failed to deliver universal services of sufficient quality. In response to this the participation of private companies in water sector management is increasingly being sought, in both developed and developing countries.

An economy based exclusively on the public management of its services still requires a measure of regulation but that role is often diffused within a number of government departments and bodies. The regulatory activity is generally politically motivated and more successful at setting standards than at implementing or enforcing them. Poor service delivery is often excused and there is a general presumption that the state is doing the best it can in the light of other priorities and the resources available to it. The ultimate solution for poor services is seen to be a change in political control.

Once private sector participation is introduced the need to regulate becomes more explicit. There are two main reasons for this. Firstly, there is now a general presumption that the management's priorities are concerned primarily with profit and the interests of the water consumer need explicit safeguards. Secondly, the state has to provide conditions suitable for commercial investment and risk taking. A securely regulated tariff system reflecting the costs of service provision is likely to be a key aspect of this.

In a liberated market economy the monopolistic nature of water and sanitation provision requires that water consumers receive specific regulatory attention. The regulator should balance consumer charges with service targets and standards. He should regularly monitor companies' performance against them and he should have powers to enforce compliance and ultimately to remove licenses. Consistent with this approach, the regulator should have some discretion to modify companies' commitments or price constraints arising, for example, from a fundamental change of circumstances impacting on a long-term license or concession contract. As long as this scope for discretion is specified in the legal framework and is seen to be open and fair it can be viewed as facilitating the conditions of a fully competitive market place.

Industrial Structure

Public sector service provision, particularly in urban areas, has typically been based on large service areas (often municipality or region based) including all management functions from resource development to metering. Such organizations constitute absolute monopolies which, because they are within the public sector, are not necessarily regarded as undesirable in any sense for the consumers. If private management is introduced into this structure it is necessary for regulation to be very firm in the interests of those customers.

The involvement of the private sector in such organizations is often restricted to service or management contracts. They specify standards and fees with little room for maneuver. The benefits of using private sector expertise on this basis are limited and once some experience is gained there will be pressure to develop into build-own-operate-transfer (BOOT) contracts or full concessions. There is a danger in these situations that tight, inflexible regulation can become too prescriptive as well as restrictive. A regulatory framework that permits only a steady return for a standard job may be self-defeating in the longer term. It has the disadvantage of rendering the sector less able to react to changing circumstances and may discourage innovation.

Large municipality-based utility companies can often lead to a one-to-one situation between the regulator (which may be a unit within the municipality) and the operating company. This is not a desirable situation since the regulating activity can become a continual negotiation process in which the company probably has the stronger position in terms of knowledge of the system, for example. Regulatory capture also becomes a significant risk. The possibility of strengthening the standing and wider community influence of the regulator by combining his office with other public service regulators (e.g. for energy or telecommunications) might be helpful in such a situation.

If major service concessions are under consideration it is advisable to break up the structure, either by separating resource and supply from distribution or by creating smaller company service areas. Some countries have fragmented their former state utilities in order

to provide new companies more suitable for private sector operations and more effective regulation. Where a diverse company structure exists the regulator is able to give the companies greater freedom to meet their obligations and then to measure and compare their performance. He can use this information to identify the good and poor performers and set more realistic service targets. This approach is equally effective where some of the companies remain operating within the public sector.

Political Risk

If an economy is thought to be politically unstable, or one where politicians or major customers are able to exert undue influence on a private service company, then the role of the regulator is vital in providing a commercial climate in which the company can have confidence. Once again, tightly prescribed service contracts are recommended for this situation. Tariffs should guarantee rates of return that reflect the risks involved. The regulator will need to be strong and seen to be independent of the political machine. His powers of discretion should be kept to a minimum with regulatory decisions based on a procedural approach. Evolution to a more flexible regulatory arrangement should be a longer-term aim associated with wider political and institutional reforms.

A prosperous and stable market economy will be less reliant on the regulator to create the conditions for investment and commercial management. The regulator will be able to concentrate on maximizing productivity in the industry through the use of benchmark standards and comparative competition. He will also be in a stronger position to protect the interests of consumers by pressing for high service standards at minimum economic cost. The skills of the regulator in terms of balancing tariffs with service performance, promoting innovation, and providing customer protection within a commercially viable industry can be optimized.

A Model Framework?

The regulatory framework is only one aspect of the overall institutional and legal framework within any particular country. It is not possible to prescribe a suitable regulatory regime without close regard to the wider administrative and commercial arrangements that already exist or are being put in place. The most appropriate arrangements for a highly centralized state will be different from those where power and responsibilities are more diffused, and possibly where the market economy is more developed. Countries carrying greater political risk and less stability should benefit from a tighter, narrower regulatory regime, strongly supported by legal process, and with less room for discretion and maneuver. Of equal importance is the propensity of a given country for coping with change, for many countries in the Asian region, social, political and economic conditions are dynamic and developing.

In smaller countries, or where appropriate expertise is limited, it may be sensible to set up one regulatory body to oversee all public utility services (including energy, telecommunications, etc.). This can provide a unit of stronger standing in the community and better equipped to deal with the range of situations involved. Another option is to establish umbrella regulatory bodies providing research, training, and advisory services to the local regulators and perhaps arbitration powers over local disputes. This could be helpful in federal states or even in regions embracing a number of smaller countries.

The establishment of multi-sector regulators may also be suitable where the industrial structure is dominated by international combines and multi-service companies, where issues of cross subsidization between the services and other commercial interests would be relevant.

The following statement quoted from a World Bank publication (1998) illustrates the importance of introducing a regulatory framework in empathy with the economic and political

character of the country and also the pace of change taking place within it. The imposition of an ideal static model for economic regulation, whether for water, sanitation or any other service is not realistic.

“In order to attract significant private investment into provision of infrastructure, a country must offer a credible regulatory environment. In part this depends on the general legal and judicial systems affecting business: laws governing property, contracts, security interests, etc., and the reliability of judicial procedures for their enforcement. But it also depends on specific regulatory arrangements for sectors that have elements of natural monopoly. Because development of regulatory skills and procedures takes time, and because track-record is the most convincing way of demonstrating credibility, it is wise to initiate the effort early, when infrastructure agencies are first delinked from direct government administration, rather than to wait until bids are to be solicited from potential investors/concessionaires.

The regulatory function must be protected from changing political winds and generate confidence that issues will be handled strictly and objectively on their merits. How this is best done depends on a country's traditions and political/administrative structure. Most of the developing countries are following the Anglo-Saxon example of establishing regulatory commissions outside line ministries of government, with debate now tending to favor multi-sectoral bodies, at least initially. Some of the transition economies, with their young democratic institutions and traditions, have considered it safer to place the responsibility with the relevant sectoral ministry, but experience indicates real dangers of favoritism and disregard of rules/contracts as a result so that it is likely to be appropriate at best as an interim arrangement. In the Commonwealth of Independent States (CIS) countries there are some indications that the Anti-Monopoly or Economy Ministries may prove the best incubators of an independent regulatory function, which may then, after a few years of experience, be formally separated.

Initially, when the main need is to build regulatory skills and credibility, it will usually be desirable to tie down the key parameters for the first several years for an infrastructure provider with monopolistic powers as clearly as possible in a standard contract: prices and price adjustment provisions, service obligations, and arrangements. It is normally wise also to identify in the contract the specific areas in which exogenous change of conditions would necessitate contract adjustment. Specification of administrative procedures... and provision for appeal to the courts ...are other features that can enhance the confidence of private investors in countries where private activity in infrastructure has long been absent. Once capacity and confidence have grown, the regulatory body can use greater discretion and introduce more refined regulatory mechanisms. Very important for that stage will be the interim accumulation, by the regulator and the provider, of reliable information about costs, prices and performance quality in accordance with the accounting system (and auditing arrangements) specified by the regulator.”

International Experience

In 1997 the Centre for Regulated Industry (CRI), based in the UK, identified just 13 countries around the world that had a regulatory system for private utilities (not necessarily including water and sanitation services) in operation. Six of these countries were located in Western Europe and the Philippines was the sole representative in the Asian region. Five other countries, including Malaysia and Thailand, were recorded as in the process of setting up such systems associated with increased private participation and liberalization. Finally, 13 countries were identified as having their regulatory functions integrated with the ownership of public-owned utilities. They included the People's Republic of China, Japan, Korea, and Pakistan, and also six countries in Eastern Europe.

Using more recently published information from the CRI (and others) I have established that of 36 countries for whom comparable data could be found 20 have their water and wastewater services provided by public-owned and managed utilities. Only three countries, namely England and Wales, Chile, and Argentina have their services managed predominantly from the private sector. Of the remainder, a number are moving towards that objective.

Using the tariff setting process as a key indicator of regulation, four of these countries have an independent national regulator responsible for the process. They are England and Wales, Chile, Peru, and the United Arab Emirates. At least two others, Brazil and Malaysia, are reputedly moving towards a similar system. Nine other countries (from Eastern Europe and Africa) control tariff setting directly from central Government but more as an ownership/management function than a regulatory one. The majority of countries set their tariffs at the local municipality level, generally from within the political process. However, in many of these countries the national governments prescribe tight rules and procedures, examples include Poland and South Africa.

Finally, I examined the main principle used for determining tariff levels. In only 12 countries are the full economic costs of the service, including a return on capital employed, explicitly used. Sixteen further countries are reputedly cost-based; the remaining eight countries do not appear to use costs of service provision as their main criteria for setting tariffs. There are problems in obtaining comparable and reliable data in these areas. Nevertheless, it is clear that even where cost-based calculations are adopted, the final decisions are generally taken according to the political priorities of the country concerned. This includes strong central controls as instanced by the former socialist republics of Eastern Europe and a number of the African republics, and local municipal decision-making, common in Europe.

The pressure for more explicit and transparent regulatory systems in the water and wastewater sector is undoubtedly linked to the growing involvement of private companies and the need to attract private investment. Between 1984 and 1990, developing countries awarded contracts for only eight water and sewerage projects to private companies. Since 1990 private participation in the water sector in developing countries has increased more than tenfold, though it is still small relative to private participation in other infrastructure sectors, particularly energy. Nevertheless, it is estimated that since 1988 about 270 million people have seen the management of their water and wastewater services taken into some form of private management. About 5% of the world's population (some 335 million) are currently served by the private sector and forecasts suggest that this could rise to around 35% by 2015. That is not far away!

There is little doubt that this pressure will drive regulatory reform. The case studies that follow in this report illustrate that several countries are currently in a state of transition as they strive to cope with the issues involved.

Case Studies

We have undertaken 10 country case studies as part of this appraisal. The chosen countries represent a considerable range in terms of wealth and existing quality of service provision, social and economic philosophy, and political approach. However, each country faces common problems in relation to the need to fund and manage effective water and sanitation services while improving and protecting environmental standards and customer interests. The range of approaches adopted in these countries provide an interesting and revealing picture and illustrate the importance of existing social and institutional factors in determining their chosen approach. For ease of reference the key aspects identified in each study are tabulated in the Summary Analysis of Case Studies.

At one extreme are England and Wales and Chile where strong national regulators take direct responsibility for establishing and enforcing service standards and tariff levels. They are

both responsible for a relatively small number of regional based companies. In England these are fully privatized companies, operating under 25 year licenses. In Chile a transition from corporatized utilities to private concession companies is in progress.

These countries provide an example of a very objective and pragmatic approach towards public service regulation based on an 'independent' national regulatory body. The benefits associated with consistency and comparative competition derived from this approach have much to commend them. These benefits are reinforced by the fact that the regulators conduct their decision making in the open, regularly publishing accounts of their findings, and maintaining close contacts with consumer opinions. The regulators are also independent of local politics and are able to keep at arms length from operating companies, while having strong powers of information collection and control over them. The problem they can face is remoteness from local circumstances and issues of scale in overseeing large and very active service sectors.

In countries where there is a tradition of strong provincial or regional government, political and administrative powers at this level carry considerable power, generally being carried out within a national policy framework. The United States of America, Australia, and Italy each fall into this category. The tradition of provincial government extends, not surprisingly, into their regulatory frameworks. In each of these countries there is a framework of national guidance but the manner and diligence with which they are applied can vary considerably from region to region. In Italy, the attempt to be over prescriptive at the center has encountered widespread resistance that is hindering regulatory reform.

There is no reason why the 'regional' approach should not work as effectively as the 'national' one, given the scale involved in the United States it is surely more practicable. There are two main issues. Firstly, there is likely to be less consistency within the country concerned. If the objective is to attract investment from international firms, this can lead to confusion and reduce confidence in the sector framework; there are certainly problems of this type in Italy at the present time.

Secondly, different regimes across the country can lead to information blocks, a lack of awareness in one area of what is being achieved elsewhere, a different view taken on issues such as productivity and innovation. Australia provides an example, where adjacent operating companies may be subject to quite different regulatory regimes. In order to obviate such problems the option of a national 'regulator', a professional not a political body, which collects and disseminates information and interprets national guidelines is worth consideration.

Indonesia is a country that needs to consider this approach closely. The country is in the process of unwinding a cumbersome bureaucracy based on national control and decentralizing its regulatory and management functions to a more regional based structure. In addition to the above considerations Indonesia will have to consider the availability of skills, expertise and local capacity in order to undertake these responsibilities. A 'regulator of regulators' who could provide training and advice as part of its remit should be considered.

The majority of the countries that we examined place their regulatory controls with the local municipalities. In many cases this reflects a situation where ownership and administration of the water and sanitation services have grown up at the local level and the local authorities naturally take more explicit regulatory powers as utility company structures develop. The regulatory role is derived, effectively, from the ownership of the service infrastructure and manifests itself in the management of local concession agreements. The progression from owner and manager to owner and regulator can lead to problems. It is very difficult for municipalities to take their regulatory role out of the political arena and thus be sufficiently objective and commercial in their judgements. Also, very often, the municipalities only have responsibility for one or two operating companies. Thus, they are denied the benefits that undoubtedly arise from comparing company performance and using the intelligence that arises from this to encourage greater productivity and higher standards. As

discussed in the case of Indonesia, the support of a national regulatory standards and training body should be considered to compensate for this.

In some countries, such as Poland and South Africa strong guidelines, almost rules, are being set down to govern the nature of the regulation process. They should allow for some consistency of approach across their respective authorities although it is too early to say whether this will be effective in providing a more stable commercial environment for potential private operators. In South Africa a move to the national regulator option is under discussion as a possible new way forward.

In Germany and Bulgaria the municipalities are the responsible regulatory bodies, consistent with their wider service provision responsibilities. National laws provide a framework of law and guidance within which they operate in the interests of their electors. This includes attracting private management to run their community services and ensuring appropriate commercial and political conditions for this to happen. Local politics and regulation are very closely related in this framework. Although excellent concessions agreements can be put together it seems doubtful that there can be sufficient objectivity and independence in the process to achieve the full benefits of private management on a countrywide basis. The German approach is still very much geared to public sector controls rather than private sector initiatives.

The case study reports that follow have, as far as possible, been prepared to the same format and to comparable levels of detail. Each one contains a summary of the key points and a broad structure diagram illustrating the main organizational links in the regulatory framework. The objective has been to identify the broad regulatory features and issues and to provide relatively easy access to them.

In all cases, Thames Water International country managers have provided the core of the information and this has been supplemented from a variety of other sources and personal opinions. It must be stressed that in many cases it has not been easy to ascertain a clear picture and we are aware that theory and practice do not always concur. Very often this reflects a confusion as to responsibilities, which undoubtedly exists in some countries. This, in part, is because many countries are actively reshaping their institutional arrangements and are in a transitional phase as we speak.

Summary Analysis of Case Studies

COUNTRY	POPULATION / GDP/capita (US\$)	SERVICES		UTILITIES		
		Quality/ Coverage	Problems/ Issues	Ownership	Structure	Issues
Australia	19 million/ \$20,100	good/ high	water resource management/ efficiency & sustainability	Public (2 private companies)	384 utilities/ 2 serve 20% of population	moves to privatization
Bulgaria	8 million/ \$1,400	poor/ water 89% sewerage low	leakage 60% & sanitation. pollution/ investment	State/ municipality	13 State Companies, 19 municipal, 16 co-owned	moves to private concessions
Chile	14 million/ \$4,700	generally good/ water 99% sew'rage 91%	sewage treatment cover 17%	State and Private companies (17%)	53 regional based companies	private concessions proceeding
England & Wales	52 million/ \$22,600	good/ full services	environmental improvements	Private companies PLCs	10 regional water & sew'rage companies/ 18 water only	mergers/ diversification
Germany	82 million/ \$25,400	good/ full services	environmental improvements	Mixed public, private & joint owned	Over 15,000 utilities	high costs/ growing private concessions
Indonesia	210 million/ \$600	poor/ low coverage	all services/ water resources/ pollution	Public/ few private concessions	307 district water companies	insolvent/ massive investment needs, etc.
Italy	58 million/ \$19,700	problems/ good coverage	water quality/ sewage treatment/ environmental	Municipal/ some JVs & private contracts	over 8,000 municipal utilities	move to private concessions/ investment
Poland	40 million/ \$4,000	serious problems/ reasonable coverage	water quality sewage trmt. environment & pollution	Municipal	300 utilities (mostly commer- cial code companies)	investment to meet environment problems
South Africa	43 million/ \$3,200	problems/ poor coverage & unequal distribution	water resource management/ new services conservation	Municipal	local authority departments	investment needs/reforms private management
United States of America	281 million/ \$30,600	good/ high	high cost/ investment needs	Municipal (90%) & private companies	55,000 units 5% serve 75% of population	productivity/ growth of private sector

GDP = gross domestic product, PLCs = public limited companies, JVs = joint ventures

Summary Analysis of Case Studies

COUNTRY	REGULATION FRAMEWORK					LEGISLATION
	Level	Nature	Tariff Basis	Customer Protection	Issues	
Australia	States (within national framework)	Varies / independent regulators & political arena	Full cost recovery	Cheap block tariffs/ no cut offs/ ombudsman	Political influence	National Competition Policy - 1995
Bulgaria	Municipalities nat'l framework (control body proposed)	Ownership/ concessions	Full costs (1997 legislation)	social security /concessions have some obligations	In state of transition, a lack of clarity	Water Law, Ordinance 9.
Chile	National regulator (SISS)	Comprehensive through concessions	Full cost recovery	Targeted subsidies/ installments	Process becoming established	Sanitation Reforms 1988-1989
England & Wales	National regulator (Ofwat)	Comprehensive through licenses	Full cost recovery (price cap)	Consultation & complaints procedures/ no cut offs	Cost of environmental improvements	Water Acts 1989 & 1991
Germany	Municipalities (State & Federal Guidelines)	Political arena	Cost recovery	Limited	Environmental costs/ political influence	Water Management Act 1957, etc.
Indonesia	Unclear/ political decisions	Proposed* independent sector regulators	Political decisions	Proposed* community involvement procedures	Proposals to implement* political will/ regulat'ry skills	Current reforming legislation*
Italy	ATOs catchments - groups of municipalities	Varies/ independent regulators & political arena	Full cost recovery/ political	Little	Slow pace of reforms/ vested interests	Galli Law 1994
Poland	Municipalities (national standards)	Ownership/ political	Political (new criteria for cost recovery)	National standards may help	National standards driving reform	Reforming Act being drafted
South Africa	Municipalities (independent regulation under review)	Ownership/ concessions	Cover cost/ political	Very aware/ lifeline tariffs & cross-subsidies	Local skills & capacity	Nat'l Services & Nat'l Water Acts of 1997 & 1998
United States of America	State Commissions Municipal -	Judicial Review/ - ownership	Full cost recovery (rate of return)	Judicial via rate payer advocate	Established process/ cost plus culture	Safe Drinking Water Act & state laws

SISS = Superintendence of Sanitary Services, Ofwat = Office of Water Services, ATOs = water catchment areas

