

**ENVIRONMENT DIRECTORATE  
Environment Policy Committee**

Cancels & replaces the same document of 15 November 2006

## **Global Forum on Sustainable Development**

**Opportunities and challenges arising from the increasing role of new private water operators in developing and emerging economies**

**Background Issues Paper for OECD Global Forum on Sustainable Development "Public-Private Partnerships in Water Supply and Sanitation - Recent Trends and New Opportunities"**

**29-30 November 2006, Paris**

For further information, please contact Mr. Peter Borkey, Environment and Globalisation Division.  
Telephone: +33 (0) 1 45 24 31 85, Email: peter.borkey@oecd.org

**JT03218127**

Document complet disponible sur OLIS dans son format d'origine  
Complete document available on OLIS in its original format

## TABLE OF CONTENTS

ABBREVIATIONS .....	5
1.0 INTRODUCTION: TRENDS IN PRIVATE SECTOR PARTICIPATION IN THE INTERNATIONAL WATER SECTOR.....	6
2.0 NEW FACES IN PSP: PROFILE & TYPOLOGY .....	8
2.1 Identity & profile of recent market entrants (RMEs) .....	8
2.2 Genealogy of RMEs .....	10
2.3 RMEs based in developing, emerging & transitional countries .....	13
2.4 RMEs based in developed countries.....	14
3.0 ASSESSMENT OF RMES BY REGION.....	18
3.1 Criteria for assessment .....	18
3.2 Latin America.....	18
3.3 Eastern Europe, Russia, Caucasus & Central Asia (EECCA).....	21
3.4 China .....	24
3.5 South East Asia .....	24
3.6 South Asia .....	26
3.7 Sub-Saharan Africa .....	28
3.8 North Africa & Middle East.....	29
4.0 CONCLUSIONS AND IMPLICATIONS.....	30
4.1 Some conclusions .....	30
4.2 Implications .....	34
ANNEX 1 REFERENCES & SOURCES OF INFORMATION .....	37
ANNEX 2A LIST OF RECENT MARKET ENTRANTS BASED IN DEVELOPING, EMERGING AND TRANSITIONAL COUNTRIES .....	39
ANNEX 2B LIST OF RMES BASED IN DEVELOPED COUNTRIES WITH CONTRACTS IN DEVELOPING, EMERGING & TRANSITIONAL COUNTRIES .....	43

**Tables**

Table 1.	Geographical breakdown of RMEs used in this study .....	10
Table 2.	Typical origins of RMEs.....	11
Table 3.	RMEs broken down by origin and contract type .....	15

**Figures**

Figure 1.	Origins of RME operators or sponsors .....	17
Figure 2.	Type of contract in RME projects.....	17

**Boxes**

Box 1.	The rise of local bidders .....	6
Box 2.	Triple A: An empresa mixta in Barranquilla. ....	21
Box 3.	Small RMEs in Uganda and Mauritania.....	28
Box 4.	Management contract in Yerevan.....	31
Box 5.	Manila Water .....	32

## ACKNOWLEDGEMENTS

1. This Background Issues Paper was written by James Winpenny of Wychwood Economic Consulting Ltd, UK. The author is indebted to a number of people who have been generous with their time, source material and comments:

Peter Borkey, OECD Environment Directorate  
Philippe Marin, World Bank  
Maurice Bernard & Aymeric Blanc, Agence Francaise de Developpement  
Gerard Payen, Jack Moss, Xavier Maitre Robert, Aquafed  
David Lloyd Owen, Envisager

**ABBREVIATIONS**

BOT	build, own, transfer
BOOT	build, own, operate, transfer
BOO	build, own, operate
BOTT	build, operate, train, transfer
BROT	build, rehabilitate, operate, transfer
BOTT	build, operate, train, transfer
DBFO	design, build, finance, operate
DBOT	design, build, operate, transfer
JV	joint venture
O&M	operation and maintenance
PSP	private sector participation
ROT	rehabilitate, operate, transfer
TOT	transfer, operate, transfer
W&S	water and sewerage (or sanitation)
WWTP	wastewater treatment plant
WW	wastewater
RME	recent market entrants i.e. new private water operators

## 1.0 INTRODUCTION: TRENDS IN PRIVATE SECTOR PARTICIPATION IN THE INTERNATIONAL WATER SECTOR

2. A recent paper from the PPIAF<sup>1</sup> paints a new water landscape:

“In the water sector of developing countries the investment boom of the late 1990s has been followed by declining investment flows and the cancellation or distress of several high-profile projects. Enthusiasm has been replaced by doubts. But recent data paint a more nuanced picture. Activity in 2005 suggests that private participation in the water sector is entering a new phase. New private activity is focusing on smaller projects, a few countries, and bulk facilities. Contractual arrangements involving utilities are combining private operation with public financing. And new players are entering the market.”<sup>2</sup>

3. This report is concerned with these new players, which for brevity will be labelled RMEs (Recent Market Entrants, i.e. New Private Water Operators). Its principal focus will be on RMEs from developing, emerging and transition countries, though some consideration will also be given to companies from developed countries that are newly emerging players in the above markets.

4. There is no doubt that RMEs are here to stay, and a phenomenon to be reckoned with in the international water market. In two current bidding exercises for concessions, nearly all the shortlisted bidders are local or regional companies or consortia (Box 1).

### Box 1. The rise of local bidders

*Philippines: Maynilad Water Services.* The majority stake in this company, which has the concession for West Manila, is up for sale following the exit of previous concessionaires, Suez and Benpres. The original list of 11 applicants has been whittled down to a shortlist of four, as follows:

- Manila Water Co (which holds the concession for the Eastern part of the city) in partnership with JW International (based in British Virgin Is) and BPI Capital Corp;
- DMCI Holdings Inc in partnership with Metro Pacific Corp (Hong Kong);
- ILFSL (India) & Strategic Alliance (Philippines);
- Rubia Holdings (Cayman Is), Noonday Asset Management Asia (Singapore), YTL Power (Malaysia), Daichi Properties & Development & ABP Holdings (both local).

*Argentina: Catamarca Aguas del Valle water concession.* The city is calling for bids for a water concession, to replace the existing consortium led by Spanish Fomento de Construcciones y Contratas. The concession is being remodelled and will involve a private company operating the service and handling maintenance, improvements and expansion under a 10-year contract, with a further option of 5 years. Tariffs would remain unchanged for an initial period, and the state will subsidise costs of power and undertake sizeable investments in different parts of the system.

In addition to the previous operator three groups, all Argentinian, have expressed interest in bidding:

- Latin Aguas (which has concessions in La Rioja and Salta);
- Grupo Roggio (which operates Aguas Cordobesas);
- Sielecki (a family-run industrial group with a water concession in Formosa).

Source : Platts Global Water Reports

<sup>1</sup> Public-Private Infrastructure Advisory Facility, sponsored by the World Bank and others.

<sup>2</sup> Marin & Izaguirre, 2006.

5. The growth of RMEs can be regarded as a “natural maturation of the market”<sup>3</sup>. Specifically,

“The long awaited move from an oligopoly to a more open and competitive market seems finally to be taking place. In 1990-97 the top five sponsors ranked by number of projects held 54% of all projects closed. But in 2002-05 their share fell to 30% - and three of the top five were from developing countries.”<sup>4</sup>

6. Oligopoly (“a state of limited competition between a small number of producers or sellers”<sup>5</sup>) is a possible frame of reference in considering the behaviour of the dominant firms in the 1990s. However, their business strategies cannot be reduced to any simple model. The economic theory of oligopoly is complex. Depending on their business strategies firms might compete or collude at different times<sup>6</sup>. During the 1990s there is evidence of vigorous competition for projects and market share. Serious risks (especially devaluation, political interference and contractual and regulatory disputes) appear to have been underestimated and losses have been made from some projects started in the 1990s.

7. With hindsight, the dramatic expansion and equally dramatic retreat of the “oligopoly” in the 1990s and early 2000s seems exaggerated. It obscured the underlying trend towards the growth of local operators, and the emergence of new operators based in developed countries. Meanwhile, certain of the established multinationals have continued to take on new projects.<sup>7</sup>

8. The growth of local and regional RMEs has a compelling logic in a development context. It is analogous to a sequence starting with imports, proceeding through import substitution, and eventually leading to the export of services. Initially, countries import expertise and access to finance to develop their water sectors. They then develop internal sources of know-how and business skills, and the more successful start exporting services within their regions, and beyond. Access to finance is initially a factor favouring the import of services. As internal capital and savings markets develop (or as countries take advantage of foreign exchange earnings from commodities and manufactures) this ceases to be a key factor. In the final stage (of which there are several current examples), the countries export both services and finance to their former developed country mentors.

9. The following chapters review the profiles and origins of the RMEs and consider how (and why) the phenomenon differs between regions and sub-regions. The report draws some general conclusions, and suggests some implications for national and international policymakers and the development community at large.

---

<sup>3</sup> Marin & Izaguirre 2006

<sup>4</sup> *ibid.*

<sup>5</sup> Oxford English Reference Dictionary, 2<sup>nd</sup> edn.

<sup>6</sup> The classic study of this subject, by William Fellner, has the revealing title “Competition among the Few”.

<sup>7</sup> Veolia has continued to take on new overseas projects, especially in China, and Suez has lately signed large new contracts in Algiers, Manaus and Chungqing.

## 2.0 NEW FACES IN PSP: PROFILE & TYPOLOGY

### 2.1 Identity & profile of recent market entrants (RMEs)

10. This chapter seeks to throw more light on the identity and character of RMEs. The criteria used in the choice of companies are as follows:

**Experience.** Actual experience, current or recent, in operating water facilities or services, or actively bidding for such work.

**Markets of operation.** Working in developing, transition, or emerging markets. This is broadly defined to include recent OECD member countries such as Mexico, the Middle Eastern oil economies, and other countries like Singapore that have graduated to “developed” status.

**New or “non-traditional” operators.** Companies that have entered the market in the last decade. Excluded are the handful of large Western European water multinationals (from France, Spain and England & Wales), but included are more recent entrants from these and other EU and OECD countries).<sup>8</sup>

**Partnership status.** Many RMEs are partners in consortia with “old” multinational companies. Such companies are included in this report even if they have only a minority stake in the venture, provided this gives them a material interest in the concern. A cut-off equity stake of 25% is proposed. Many RMEs that start off in a minority position expand their holdings by acquiring new issues of equity or by buying out the foreign partner.

**Private or commercial business model.** There should either be a significant degree of private involvement in company ownership or (in the case of publicly-owned entities) a strongly commercial orientation. This does not exclude consideration of cooperatives and not-for-profit organisations, though these are rare in practice.

**Scale.** Companies should be of a sufficient scale to be able to take on contracts to operate whole water systems in medium and large cities or networks of towns in a region<sup>9</sup>. Alternatively, they should be big enough to build, finance and operate major installations such as pipelines and treatment works. This invariably means that they are involved in the formal sector in the sense that they are legal, registered, recognised by local authorities, and with the status and means to enter sizeable contracts with public authorities. Operators’ sponsoring companies are usually limited liability companies. Informal and small-scale operators are not included in this study,<sup>10</sup> although the question of their potential to develop at the necessary scale is important for policymakers.

---

<sup>8</sup> Footnote 13 contains a listing

<sup>9</sup> For the sake of argument this could be set at populations of 100,000+, though this threshold may vary in different countries.

<sup>10</sup> This is the subject of a parallel paper for the Global Forum

11. The relationship between operating companies and their “*sponsors*” (parent, client, promoters, investors) is often complex. Various situations arise:

- The operator is a subsidiary created (or acquired as a going concern) by the parent to carry out work in the water and wastewater sectors.
- The operator is a special purpose vehicle (SPV) created for specific projects with an “arms’ length” relationship to the sponsor. The SPV may or may not evolve into an operator capable of taking on other projects.
- The operator is an experienced company based in a developed country, commissioned by local sponsors or clients. This firm may form a joint venture with local companies, which then bid for projects elsewhere.
- A sponsor is simultaneously an operator, with equity in the parent or joint-venture as well as in the operating company.

12. All these situations arise in the list of companies summarised in Table 1 and detailed in Annex 2, which complicate the task of classifying operators, on the one hand, and sponsors, on the other. Some relationships are highly complex and difficult to categorise (e.g. a parent sponsoring company which has set up a specialised water subsidiary, which acquires another operating company, which enters a joint venture with a local public sector agency for a specific project. This is an actual case).

13. The other important factor is the *type of contract* governing how operators work. The broad options, in increasing degree of risk to the operator, are:

- Operating and management contract. These are typically of short duration, e.g. 1-3 years. They may be fixed-fee, or related to specified performance variables (e.g. water supplied, new connections made, reduction of leakage, improvement in water quality parameters, meters installed, billing payments received).
- Lease of assets. The operator pays a rent to the asset owner for the right to operate the infrastructure for the duration of the contract. The contract may contain undertakings about improvements to be made to the system. Revenues are collected by the operator, and retained in full or shared with the asset owner in a predefined proportion. In the *affermage* system, as practised in France and francophone countries, the operator takes full responsibility for operation and/or service delivery, within the limits of the capacity of the assets, and is remunerated directly by customers through a portion of the tariffs.
- Concessions whereby the operator takes over the use of the assets for a defined period, retains all revenues and undertakes any necessary (or agreed) investments. At the end of the concession period, the assets are handed back to the public sector owner. There are many concession variants, the most basic distinction being between those for operating existing systems, and those involving construction of new, stand-alone facilities (often referred to as *Greenfield* projects). The latter (ROTs, BOTs, BOOTs, BROTs, DBFOs, BOOs, etc) usually involve “take or pay” arrangements, under which services (volume of water supplied, wastewater treated, etc) are reimbursed by the public sector client at a pre-agreed level. This kind of contract appeals to construction and engineering companies and plays to their strengths, since it involves a large construction and plant element, and does not involve direct relations with consumers. It removes from the investment decision tariff and billing issues, which are usually the greatest problems in system concessions.

- Full divestiture of assets to private ownership, so that the asset owner and operator may be the same – though even in this situation operation can still be sub-contracted, or ownership and operation formally split into separate companies to preserve an arms-length commercial relationship.

14. Annex 2A contains the names of 116 RMEs obtained from readily available sources<sup>11</sup>. This list does not claim to be comprehensive, but probably contains the majority of RMEs that conform to the criteria stated at the start of this section. Annex 2B contains the names of a further 18 “new” private operators<sup>12</sup> based in developed countries that have operating contracts in developing, emerging and/or transitional markets. The geographical split of these companies is as follows (Table 1):

**Table 1. Geographical breakdown of RMEs used in this study**

<b>Based in developing, emerging &amp; transitional countries</b>	
Latin America & Caribbean	35
EECCA	9
China	27
SE Asia	27
South Asia	5
Sub-Saharan Africa	7
Middle East & N.Africa	6
Total above	<u>116</u>
<b>Based in developed countries</b>	18
Grand total	<u>134</u>

## 2.2 Genealogy of RMEs

15. This section explores the origins of RMEs and the circumstances in which they expand their presence in the market. There is a great variety of situations, each operator is a special case, and the following discussion is at a high level of generality. To emphasise an earlier point, the relationship between operator and sponsor, and the type of contract, are important prior factors.

16. With this in mind, the following situations (Table 2) are typical:

<sup>11</sup> Pinsent Masons Water Yearbooks, the World Bank’s PPIAF database, Platts Global Water Report, supplemented by other sources of the author.

<sup>12</sup> We take the “old” private operators, who are excluded from this study, to be those who were active in overseas projects prior to 1997. These include the French companies Suez Ondeo, Veolia (formerly Vivendi) and Saur/Bouygues; the Spanish co Aguas de Barcelona, and the British cos RWE Thames Water, United Utilities, Severn Trent, and Biwater. Several other British companies have overseas experience but are no longer actively looking for new overseas projects. The US company Azurix, which was developing an overseas presence before the collapse of its parent co Enron, is no longer in existence.

**Table 2. Typical origins of RMEs**

*These categories are not exclusive - many firms would find themselves in more than one box – and would apply both to operators in their own country and those entering external markets.*

<ul style="list-style-type: none"> <li>• Diversification into water of companies with core business elsewhere: <ul style="list-style-type: none"> <li>- Conglomerate</li> <li>- Multiutility</li> <li>- Manufacturing</li> <li>- Construction</li> </ul> </li> </ul>
• Inclusion of water companies in portfolios of financial & investment cos
• Expansion of existing water operators
• Progression of public utilities to private status
• Localisation of projects involving foreign operators
• Public companies acting in a commercial fashion
• Small-scale operators graduating to RME status.

- i) *A diversified existing firm moves into water services as a business opportunity.* This is a very common dynamic in China, where water and wastewater are (correctly) perceived as huge and growing markets with good returns, especially from BOTs on “take-or-pay” terms. There are a number of cases in China, South East Asia and elsewhere of companies creating subsidiaries specialising in water services as a way of targeting public BOT contracts. In one Philippines case (Benguet) an old mining company is moving into water to offset the decline of its mining activities.<sup>13</sup> Several of the new Russian companies are conglomerates with core business outside the water sector. Such companies are attracted by the expectation of steady cash flows from a major utility. They also have established access to finance, credibility in the markets, and the necessary political connections.<sup>14</sup> Their large balance sheets can also cushion any initial losses or investment outlays. One of the possible problems facing operators taking this route is their lack of experience in this sector – one obvious solution being to sub-contract an experienced operator or enter a joint venture with them.
- ii) *A multiutility spreads into the water sector.* This is a special case of (i) above, exemplified by the Russian RUS & CES, China’s NWS Holdings, India’s JUSCO, Malaysia’s Ranhill & YTL, Davao Light & Power in the Philippines, etc. In some ways this is a natural move, since the core business will have an overlapping customer base, which offers scope for economies in billing and customer relations. Such companies will tend to have built up the necessary political links and goodwill and have experience in operating and maintaining networked services. Cross-subsidy is also possible (and common) between power, heating, telecoms etc – on the one hand – and water services, on the other. Synergies are theoretically possible, and many companies have realised them, but there are other cases where they have proved illusory.<sup>15</sup>

<sup>13</sup> And is proposing to use a former open-cast mine as a reservoir for Baguio!

<sup>14</sup> Entry into municipal water services can also increase a firm’s political visibility, which may be part of the appeal – e.g. in Russia and China.

<sup>15</sup> A number of take-overs in the European utilities market have been driven by the search for synergy, and have not always been successful, leading to divestiture after a few years.

- iii) *Expansion of a manufacturing company into water services.* It is very common for companies with an established base in the production of water and wastewater treatment plant, pipes and pipelines, pumps, chemicals, desalination units, etc to take what they see as a logical next step into operating these facilities. The production of plant, equipment and materials for the water sector is a massive industry worldwide, with an annual global turnover of \$365 billion<sup>16</sup>, hence there are plenty of firms potentially available to make this move. In particular, the growth in the number of desalination projects, especially in North Africa and the Middle East, has been a major stimulus to BOT projects operated by RMEs. Examples of this general category include China's Beijing Sound, Guozhen Environmental, Cheung Kong, Shanghai Municipal, India's BHEL, Malaysia's Puncak Niaga and Taliworks, Mexico's Aquasol, Singapore's Darco and Hyflux, etc. The BOT type of contract plays to the strengths of these companies, whereas the operation of networks, the development of customer relations, tariffing and revenue collection etc are not areas where manufacturing companies have a natural comparative advantage.
- iv) *Spread of construction firms into water services.* This is another very common route for RMEs, with examples from Brazil (Andrade Gutierrez, Grupo Equipav, Paz Construcao, Amafi), China (Guangdong Investment, Shanghai Industrial, Shanghai Urban Construction Group, Xinjiang Urban Construction Co), Colombia (Aguas de la Mojana, Consorcio Almafama), India (Larsen & Toubro), Malaysia (DKLS-PJI), Thailand (Karnchang) and Philippines (Ayala/Manila Water). The Indian company IVRCL has shown an evolution up the value chain, starting with civil engineering contracts, moving into lump sum turnkey projects, into design and execution projects, and finally into BO and BOT projects. Construction is a major cost item in the creation of infrastructure, and a potential source of profit in both network and greenfield projects. Some construction firms also become involved in water services through the creation and operation of housing estates.
- v) *Water services as a portfolio choice by financial and investment companies.* Some sponsor companies buy into water services as part of a diversified portfolio of assets. Examples include Chile (Consorcio Financiero with holdings in ESVAL and ESSCO, Aguas Nuevas), China (CITIC), and Southern Cross (registered in the Caymans) with acquisitions in the Chilean water sector. This is an aspect of the growing worldwide interest of banks and other financial groups in buying water service companies.<sup>17</sup> Financial groups would normally take over water operators as a going concern, or install their own operators into an existing utility. They would be expected to bring to bear a rigorous commercial attitude to their operating companies. However, this business strategy could lead to corporate instability if equity is traded as a short term investment, or if the company is subject to "asset stripping". A special case is the International Finance Corporation, which invests in emerging market projects as part of its development mission. IFC has held equity in several companies which are now RMEs (e.g. Manila Water, Brazil's SANEPAR, Beijing Sound). The Nordic Environmental Finance Co has done similarly with its investment in Russia's Vodokanal.
- vi) *Expansion by established water operators.* Some companies that have existing water operations have taken over other projects/companies in their own countries or externally. Examples include Latin Aguas (Argentina), Aguas Nuevas (Chile), Tianjin Capital (China), ILFS and IVRCL (India), Ranhill (Malaysia). In the Philippines, Manila Water, with the concession for the eastern part of the city, is bidding to take on the concession for Maynilad Water, which has been operating the concession for the western part.

<sup>16</sup> Estimates by Goldman Sachs

<sup>17</sup> discussed in UNEPFI (2006); the international financial press devotes increasing space to the attraction of the water sector for investors.

- vii) *Privatisation of former public utilities.* Several companies have progressed from being a public utility, through corporatisation, through a public share issue or trade sale, to majority or full private ownership.<sup>18</sup> In Malaysia PBA Holdings is the new face of the former Penang state water board. In Chile the regional water corporations were groomed for eventual privatisation, which happened in the late 1990s (the largest, EMOS, still has a sizeable minority government shareholding through CORFO). In Brazil, SABESP, the water utility of Sao Paulo state, has 49% of shares widely held by the public, and is now legally permitted to expand operations into other states and countries. In some cases the share flotation leaves the public sector with a majority ownership which may or may not be further reduced in future. This is present in China (e.g. Beijing Capital Co, Guangdong Investment, Shanghai Industrial Holdings, Shanghai Municipal, Tianjin Capital), India (BHEL), Malaysia (Kumpulan), Thailand (Eastern Water). However, in all such cases companies would be expected to have a commercial orientation and business model.
- viii) *Localisation of projects involving foreign operators.* Many RMEs began (and a number still continue) as joint ventures – equal, junior, or majority partners – with foreign operators. Examples include Manila Water (United Utilities), Brazil’s Amafi (Earth Tech/Tyco), Aguas Andinas (Suez, which has now sold its holding), China Everbright (Veolia), Hong Kong’s NWS Holdings (Suez), Malaysia’s Intan (Veolia), Thailand’s Karnchang (Thames, now bought out), Southern Cross, which bought out Thames Water’s holdings in Chile, Lydec in Morocco where Suez has issued 49% of stock to local investors, Talinna Vesi in Estonia, ESSBIO in Chile. In India JUSCO has signed a 2-year technical partnership agreement with Veolia. In some cases difficulties incurred by foreign operators, leading in some cases to the termination of contracts create opportunities for local RMEs, e.g. in Manila, Argentina and Jakarta. Some of these equity positions are bought very cheaply from foreign companies anxious to divest. Local firms tend not to have the same foreign exchange exposure, are more acceptable to local opinion, and tend to have other local interests to cross-subsidise water in the early years, if necessary.
- ix) *Public companies acting in a commercial fashion.* A few public sector companies have ventured into the market on the strength of their previous track record (e.g. Rand Water and Vitens in their joint bid for a management contract in Ghana; Stockholm Water and other Nordic public water companies in “twinning” arrangements with neighbouring overseas utilities).
- x) *Graduation of small-scale water operators into NPWO status.* The potential for raising existing small and informal sector operators over the threshold into NPWO status clearly exists. However, it is not clear which, if any, companies including in our sample have graduated in this way. Official programmes in Uganda, Mauritania and many other countries have successfully incorporated small/medium private companies as water operators. This is a complex agenda, which is dealt with elsewhere in the Global Forum.

### 2.3 RMEs based in developing, emerging & transitional countries

17. Table 3 and Figures 1 and 2 categorise the sample of RMEs into their origins, and their projects into contract types. With regard to their *origins*, only 10% appear to have previous experience as independent operators in the water sector, and a further 20% owe their presence to some kind of involvement with foreign operating companies. 9% have evolved from publicly-owned utilities, by outright or partial privatisation. Most of the remainder entered the water sector from a base in other sectors, most commonly construction and manufacturing (including production of water plant and equipment) but

<sup>18</sup> other privatizations occur without any significant reforms as a possible solution to previous difficulties, e.g. Manila, Buenos Aires, Russia.

also from other public utilities and services. 8% of sponsors are conglomerates, and 5% are companies concerned with finance, equity and asset management.

18. The breakdown of RME by type of contract shows the dominance of BOTs and their variants (55%) followed by O&M, concessions and leases, in that order. Asset ownership is rare.

#### **2.4 RMEs based in developed countries**

19. Annex 2B lists 18 “new” private water operators based in developed countries. They can be grouped into the following types:

20. *Municipal or state-owned water entities* (seeking to commercialise their expertise in other markets). ACEA and AMGA SPA are largely owned by the cities of Rome and Genoa, respectively, and have management contracts in Yerevan, Moldova and Albania. Aguas de Portugal, the national water holding company of Portugal, has concessions in Mozambique and Cape Verde. Aquafin<sup>19</sup> is using its consultancy arm Aquaplus to develop BOT contracts in North Africa and EECCA region. Gelsenwasser<sup>20</sup> is also seeking projects in Eastern Europe. Vitens is a publicly-owned enterprise operating water services in five Dutch regions, and has recently been awarded a management contract in Ghana.

21. *Private water operators* looking for profitable business in other markets. FCC is a large water and sewerage operator in Spain (it was awarded the Barcelona sewerage contract in 1911) and has 5 concessions in Latin America and a BOT in China. The Cayman Water Co is a small operator that has expanded into several other Caribbean countries.

22. *Suppliers of water & wastewater plant, equipment and services.* EarthTech is a major operator of water and wastewater treatment plants serving 10 million people worldwide, and has DBFOs and other concessions in Mexico, China, Brazil, Venezuela, etc. It was acquired in 1996 by Tyco International, a major global producer of industrial products and systems. Inframan (based in Austria) and AquaMundo (based in Germany) are both now owned by the Saudi Arabian Amiantit Company. CH2M Hill is an American employee-owned civil engineering firm with a large US base and DBO contracts in Israel and the Philippines.

23. *Construction firms expanding into the water sector.* The Spanish construction firm Grupo ACS has acquired Urbaser, the water and waste management services specialist, as part of its merger with Grupo Dragados. Urbaser brings with it a number of major concessions in Spain and Argentina. Another Spanish construction company OHL has acquired the specialist water operator Inima in order to develop BOTs in this sector (e.g. a wastewater concession in Brazil and 4 desalination BOTs in other Latin American countries).

24. *Finance companies with an entrepreneurial approach to water projects.* TECVASA is a private Spanish venture capital company specialising in bidding for water projects, with 3 concessions in Colombia and several other O&M contracts elsewhere in Latin America. Southern Cross is a Latin American private equity fund based in the Caymans that has acquired Thames Water’s former holdings in Chile.

---

<sup>19</sup> Has a 51% shareholding by Regional Government of Flanders, with the rest of equity privately held.

<sup>20</sup> Currently largely owned by municipalities of Bochum and Dortmund, but seeking to partially privatize its equity.

25. *Power and energy companies spreading into water* Iberdrola has 41% of the Spanish market in electricity distribution. It recently entered the water market, gaining a concession in Uruguay and buying into a Chilean company, though its future commitment to water is now in doubt. WTE bought Wassertechnik as a vehicle for entering the water sector. (The giant German power utility E.ON initially bought a controlling interest in Gelsenwasser but was forced to sell its stake by the German Cartel Commission).

26. This is a small sample of possibly a much larger group of RMEs in developed countries, and it is difficult to generalise about such a diverse group. Geographically, the absence of any new French or British companies is significant, as is the prominence of Spanish operators (capitalising on their Hispanic links with Latin America). A typical pattern has been for specialist firms offering engineering services and water know-how to be taken over by larger firms (e.g. in construction, energy and manufacturing) and used to spearhead potential market penetration. DBOT, DBO and BOT contracts play to the strengths of companies with engineering expertise or equipment to sell, and these are the most common types of contract in this sample. Management and O&M contracts are also favoured means for new companies to enter markets: they incur lower risks than other types, and enable the company to acquire a better knowledge of the infrastructure and customer base.

**Table 3. RMEs broken down by origin and contract type**

	L Am	China	S. Asia	SE Asia	EECCA	Sub-S Africa	MENA	all	%
<b>Origins of operator or sponsor</b>									
<i>Conglomerate</i>	2	4	-	4	2	-	-	12	8
<i>Utility</i>	3	3	-	5	2	-	2	15	10
<i>Manufacturing</i>	1	7	2	8	1	1	1	21	14
<i>Construction</i>	10	6	2	5	-	1	1	25	17
<i>Services</i>	7	1	1	1	-	-	-	10	7
Finance co	2	1	-	1	-	2	1	7	5
Water co	5	2	-	3	2	3	-	15	10
Privatized	1	5	1	4	1	-	1	13	9
Foreign involvement	8	3	1	6	1	6	5	30	20
Public co	-	2	-	-	-	1	-	3	2
									100
<b>Type of contract</b>									
Mangt & ops	5	7	2	18	1	2	4	37	17
Lease	1	-	-	-	14	2	-	17	8
BOT et al	22	48	5	38	1	1	4	119	55
Concession	11	6	-	10	-	2	-	29	13
Asset ownership	1	4	1	5	-	-	-	11	5
Hybrid & other	2	3	-	-	-	-	-	5	2
									100

27. Notes to Table 3:

- i) A company may fall into more than one origin category, hence category numbers exceed the number of sample companies.
- ii) % do not total exactly to 100 because of rounding.
- iii) Companies may have more than one type of contract, corresponding to different projects. Hence numbers of contracts differ from numbers of companies.
- iv) 4 Full definitions of the terms used in the Table are as follows:

*Conglomerate*: a company, or group of companies, with diversified activities.

*Utility*: with interests in other public utilities, or a multi-utility operation.

*Manufacturing*: manufacturing industry & mining, including the production of water & wastewater equipment and plant.

*Construction*: building, civil engineering, infrastructure, property development.

*Services*: retailing, consultancy, engineering services, etc.

*Finance co*: investment co, asset management, private equity.

*Water co*: already having a base in the water sector.

*Privatized*: a partly or fully privatized former public utility, state or municipal enterprise, including a state enterprise whose share capital has been partially floated.

*Foreign involvement*: involving partnership with foreign operators, take-over of previous foreign projects, localization of projects started by foreign operators.

*Public co*: a fully publicly-owned enterprise with commercial orientation taking on projects outside its normal base.

*Mangt & ops*: contract for management, operations, maintenance or other specific services.

*Leas*: lease of infrastructure assets, including *affermage*. Also includes Russian variant, very long term plus some responsibility for investment.

*BOT et al*: variants of stand-alone projects usually for treatment plants or major pipelines involving eventual transfer back to public sector ownership. Includes BOTs, BOOTs, DBOTs, ROTs, TOTs, etc.

*Concession*: for supply and distribution systems, including operation and investment for the duration of the contract.

*Asset ownership*: full or partial ownership of infrastructure assets.

Figure 1. Origins of RME operators or sponsors

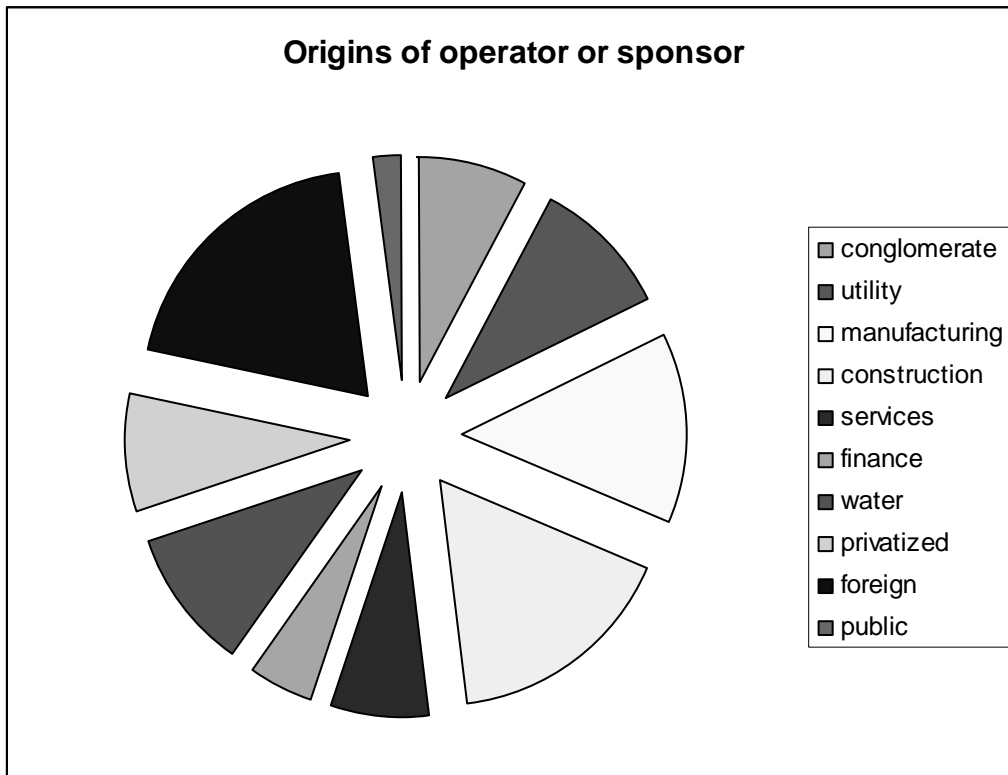
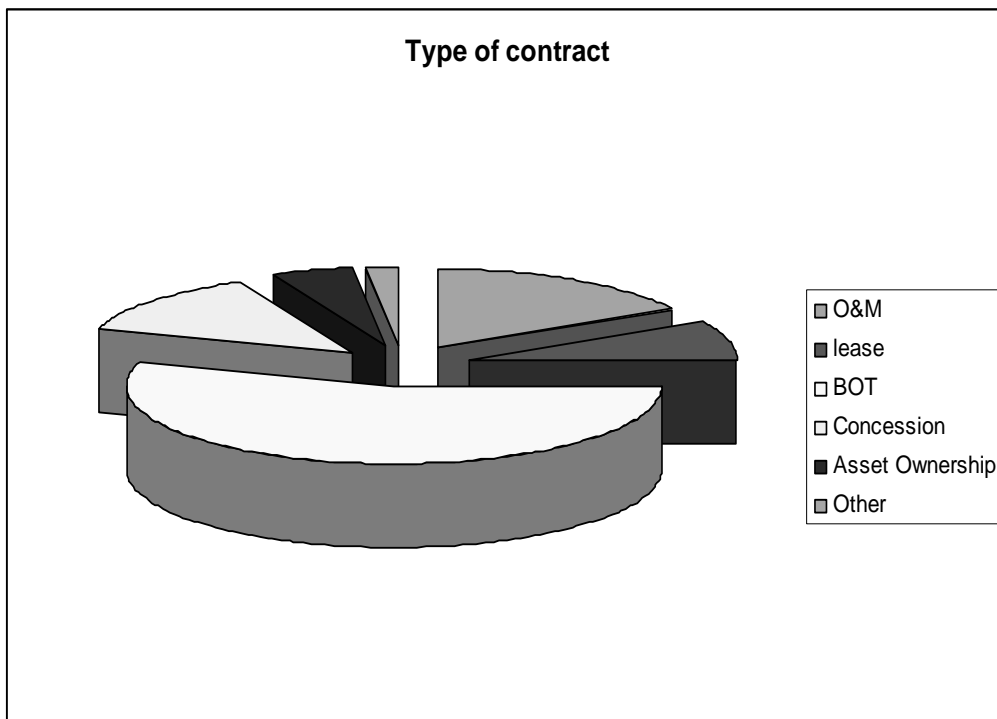


Figure 2. Type of contract in RME projects



### 3.0 ASSESSMENT OF RMEs BY REGION

#### 3.1 Criteria for assessment

28. The regional assessment below considers RMEs on various criteria, including: number of new operators; type of operator and its industry background; type, location & scale of contract; performance, achievements & problems arising; challenges & risks faced; drivers of growth; and barriers to growth & further development.

#### 3.2 Latin America

29. PSP has made major strides in eight countries (Chile, Argentina, Bolivia, Colombia, Ecuador, Mexico, Uruguay and Honduras), and is at an incipient phase in Brazil and Venezuela.<sup>21</sup> In several of these RMEs have emerged.

##### *Argentina*

30. In the 1990s Argentina was in the forefront of the international water privatisation movement. The award of a concession in Buenos Aires in 1993 was the first and largest of the “flagship” privatisations, and a number of smaller concessions were awarded in provincial capitals.<sup>22</sup> By the end of the decade around half the country’s population (and all cities of more than 500,000 except Tucuman) was served by private water companies. The Government’s strategy was that all urban centres with populations greater than 50,000 should be served by long term concessions.

31. Several of the concessions were awarded to consortia led by foreign companies, especially Lyonnaise des Eaux,<sup>23</sup> Generale des Eaux,<sup>24</sup> Agbar and Thames. Typically, the consortia involved local companies – which in the case of Salta and Corrientes had a majority share. Most RMEs in Argentina had their first bleeding in water privatisation as partners in concessions with the big multinationals.

32. The Argentinian financial crisis of 2001 was the watershed of this trend. The major devaluation of the peso exposed foreign companies to serious debt servicing problems and the leading foreign companies have now withdrawn. This coincided with other problems with concessions, such as disputes over financing new connections in BA, and other issues.<sup>25</sup> Provincial and city authorities have sought various expedients for continuing water services. In some cases, the systems were taken back into public

---

<sup>21</sup> Foster (2005)

<sup>22</sup> Santa Fe, Cordoba, Formosa, Corrientes, Mendoza, Salta, Campana, Santiago del Estero. A concession awarded in Tucuman in 1995 was rescinded in 1997.

<sup>23</sup> Now Suez

<sup>24</sup> now Veolia

<sup>25</sup> v. Nickson & Franceys (2003) for a detailed discussion

ownership (Buenos Aires and Santa Fe<sup>26</sup>), in others concessions were let to local companies. The largest of the latter is Latin Aguas, which currently holds the three concessions in Corrientes, Salta and La Rioja.

33. This brief account cannot give more than a hint of the turbulent recent history of Argentina's water privatisation. The entry and exit of the multinationals had specific causes. However, some concessions remain, and a number of these are now in the hands of local companies – which may avoid some of the obloquy directed at foreign firms. However, many of the underlying problems which bedevilled the previous concessionaires remain unresolved – such as fair and independent regulation, political interference in tariffs, financing connections to poorer communities, etc.

### *Mexico*

34. Starting in the early 1990s Mexico has organised a series of wastewater BOTs<sup>27</sup> following the successful implementation of the projects in Puerto Vallarta and Chihuahua. Most of these have involved local companies, some acting in partnership with foreign firms. The concession in Cancun was initiated by GMD, a major local construction firm, who sold half the equity to Azurix, which was then taken up by Suez Ondeo. This is an interesting case of an “old” multinational entering a partnership with a pioneering local operator.

35. In 1994 Mexico City started implementing 10-year Service Contracts with four consortia, each covering one of four segments of the city. The consortia were chosen following competitive bidding, and each involves a local company and a foreign partner. The tasks to be performed include metering, billing and revenue collection, repairs, operation of the network, leakage reduction, etc. The project has had some success in the limited spheres covered by the contracts, but the private companies have not had the freedom to address more fundamental problems.<sup>28</sup> Limiting the scope of the contracts to run-of-the-mill matters did, however, defuse any political charge that might have arisen in this case.

36. Mexico is home to a number of large local conglomerates with experience in construction, heavy engineering and public services, which are entering the market through BOTs and management contracts. Unlike in Argentina, there has been no serious reaction against private water concessions, possibly because the more contentious system concessions have been avoided.

### *Chile*

37. The framework of Chile's municipal water sector was laid in reforms passed in 1988-90. 13 regional water corporations (including one each for Santiago and Valparaiso) were created, initially with the Government (through CORFO<sup>29</sup>) having a controlling share. Half a dozen existing private companies remained outside this structure. The 13 corporations were given the status of joint stock companies and granted indefinite exclusive concessions for their service areas. The corporations were subject to close supervision and rigorous performance contracts by CORFO and SISS<sup>30</sup>, a newly formed regulatory agency.

<sup>26</sup> Aguas de Misiones is also currently in dispute with the water regulator, and the Governor of the province is prepared to take the concession back into provincial control.

<sup>27</sup> Cajeme, Torreon, Leon, San Luis Potosi, Culiacan, Puebla, Cd Juarez, Gomez Palacio, Toluca Norte, Toluca Oriente.

<sup>28</sup> FT Global Water Report, 13 Oct, 2000; Haggarty, et. al. 1999.

<sup>29</sup> A state development agency and holding company

<sup>30</sup> *Superintendencia de Servicios Sanitarios*

38. Through its holdings via CORFO, the Government pressured the corporations to improve performance by outsourcing parts of their operations to the private sector. A typical case is EMOS, the largest corporation serving Santiago, which by 1996 was outsourcing 52% of its costs (maintenance, meter reading, billing, collection and specific construction works). Such efforts enhanced the prospects of full privatisation.

39. It is revealing to compare the performance improvements noted in the public corporations with problems that persisted in certain privately-owned companies at this time. In Lo Castillo, a profitable family-run business, a crisis arose in its customer relations when it ran short of water in 1995. Its under-investment in infrastructure is attributed to managerial complacency and laxity of regulation.<sup>31</sup>

40. Since the late 1990s most of the corporations have *de facto* passed into local private ownership, though the largest, Aguas Andinas (formerly EMOS) is still 35% owned by the Government through CORFO. The growth of RMEs in Chile can be attributed to:

- Strong government commitment to privatisation in all sectors, including water.
- Reorganisation of water sector into a manageable number of authorities (13) with potential of economies of scale.
- Government influence on corporations to improve performance, exercised through shares held by CORFO and pressure from SISS, the regulator.
- Experience of private sector in sub-contracting water service functions.
- Except in EMOS, foreign companies have not been prominent,<sup>32</sup> which has pre-empted any nationalistic backlash against PSP. This is in marked contrast to Argentina.

### **Brazil**

41. Drinking water and sanitation services are the responsibility of municipalities, which are free to operate the services through autonomous entities, directly through municipal departments, or to delegate the service under a concession or licence. In many cases municipalities delegate the work to one of the 27 CESBs (state basic sanitation cos) under 25-50 year concession agreements. The CESBs in turn may sub-contract specific functions (e.g. metering, billing) to private firms.

42. Since the late 1990s there has been a trend towards introducing private capital into the CESBs. In the largest of these, SABESP (Sao Paulo state) the state government has sold some of its shares, reducing its current stake to just over 50%. Another of the largest state companies, SANEPAR in Parana, has been privatised as SANECAP. SABESP's shares are widely held by the public, whereas the concession for SANECAP is held by one of Brazil's largest construction companies.

43. Alongside these large long term system concessions, a series of BOTs and ROTs have been awarded to local companies. Much of the long-term financing of new facilities is provided by loans from federal development banks, the *Caixa Economica Federal* and the BNDES.<sup>33</sup> Agbar has sold its holding in

---

<sup>31</sup> counter-intuitively, the regulator is thought to have been stricter on state-controlled corporations than on the private companies. See Pickering, et.al. 1998 for a graphic description.

<sup>32</sup> And one of the companies concerned – Suez – has now sold its holding. Agbar remains.

<sup>33</sup> The Caixa has a special programme for WWTPs. BNDES recently financed 50% of the privatization of Manaus Saneamento.

Aguas Guarairoba to a local firm, but offsetting this Suez has been awarded the concession for Manaus Water, which has been stalled for the last five years.

### *Colombia*

44. Since 1992 the enabling environment for PSP in water services has progressively been created. Municipalities have gradually been replaced by specialised utilities operating under concessions, some of which are private or *empresas mixtas*. The first of these was in Barranquilla, where since 1991 the operator has turned around the fortunes of the former municipal enterprise (Box 2). A similar arrangement was made for Cartagena: the *Sociedad Aguas de Cartagena* was created in 1995 with a 26-year O&M contract, with ownership divided between the city, Agbar, and local investors. In Bogota a 20-year ROT concession for a water treatment plant has been awarded to the *Sociedad Concesionaria Tibitoc*, a consortium of the *Corporacion Financiera del Valle*, *Finalca* and CGE (Veolia). A number of lesser concessions of the ROT variety have since been awarded, some of them to local construction firms.

#### **Box 2. Triple A: An empresa mixta in Barranquilla.**

Between 1925 and 1960 a private company built and operated a water and sewerage system for the city that was a paragon for Colombia. In 1960 this was taken over by the municipality, and services deteriorated steadily until 1991, when the central government intervened to prevent a public health crisis. The municipal enterprise was declared bankrupt and a new mixed capital company, Triple A,<sup>34</sup> created with a 20-year lease contract with the city.

Triple A was created with 11% private equity and 89% public capital, but with *equal private and public representation on the Board*. In 1996 50% of shares were sold to INASSA, in which Agbar was a major shareholder. In 2002 another Spanish operator, Canal Isabel II, acquired a controlling interest in the company.

Since 1991 the operator has registered improvements on all the main performance indicators. The ownership of the company has fluctuated – initially it was largely owned by the city, with an active local private stake, and more recently the controlling interest has passed to foreign companies. However, the underlying structure of the *empresa mixta* has survived, and is a tribute to the division of risks that it represents. Operational risks are dealt with by the private company, and political issues taken up by the municipality. The operator's performance is rewarded by dividends paid by the *empresa*.

### **3.3 Eastern Europe, Russia, Caucasus & Central Asia (EECCA)**

#### *Russia*

45. The entry of private companies into the W&S sector effectively dates from 2003, when a number of companies made a declaration of their commitment to supplying basic public services, including water. Between 2000 and 2003 national economic recovery was accompanied by substantial tariff increases. In 2004 the Government replaced the former system of unfunded mandates of the utilities for providing services to the poor with direct financial assistance – which makes the sector more attractive to investors.<sup>35</sup>

46. Of the 8 local companies detailed in Annex 2, at the time of writing two have yet to begin operations. The six that have entered into contracts are Russian Communal Systems (RCS),<sup>36</sup> Eurasian Water Partnership, Novogor-Prikamje, Rosvodokanal, Syzranvodokanal, and Vodokanal. A further company (WTE, from Austria) operates a BOOT for water supply in Moscow.

<sup>34</sup> Sociedad de Acueducto, Alcantarillado y Aseo

<sup>35</sup> *A new Russian revolution*. Global Water Intelligence, Aug 2004.

<sup>36</sup> Aka Russian Utility Systems

47. These operators are highly varied. The largest by far is RUS (RCS), a multi-utility private open joint stock company, whose equity is held by 7 of Russia's largest private companies and conglomerates, drawn from heating, gas, electric power and finance, as well as water services. Water is only one of RUS's activities; it has 37 cooperation agreements with regional governments and 24 subsidiaries. Its water operations started with 1-year operating contracts in 7 municipalities, 6 of which have evolved into long term leases, mostly involving investment. The other companies are focused on one or two regions only, and only Rosvodokanal has long experience in water operations. Several originate in energy, housing and other utilities. One (Vodokanal) is a special purpose company to operate the BOT for St Petersburg.

48. Geographically, the contracts span several major cities (Moscow, St Petersburg, Rostov-on-Don, Omsk, Tomsk, Volgograd, Perm, etc.) and a number of smaller cities, serving a total population of over 10 million. One (St Petersburg) is a conventional BOT, with international backers, and a Nordic partner. Many projects started, and a few remain, as very short term (11 month) operating contracts. Apart from the BOOT in Moscow and the BOT in St Petersburg, most contracts are now of a specific Russian type, the "lease plus investment", the longest of which (Tomsk) is for 49 years. Under this form of contract, the operator expects to recover all investment outlays from the public sector client during the term of the contract. One contract (Syzran) is an unusual 5-year Trust Management Agreement.

49. All these contracts are too recent to warrant a performance assessment. Those operated by experienced multi-utilities or companies with a long track record may have better prospects than others held by newly formed and inexperienced companies. It may be significant that the largest company (RUS) has a business model favouring cities with a population of one million or less.

50. The results of an OECD EAP questionnaire of Russian private water operators<sup>37</sup> raises some concerns about the stability of current contracts. A number of elements that are normally considered as preconditions for successful PSPs are currently absent in the Russian water sector. Many municipalities are financially weak, and inexperienced in dealing with private operators. Most of the first round of lease contracts were issued without competitive tendering (though contracts made under the new concession law require competitive tenders). A number of deals were made by inexperienced operators in ignorance of the true condition of infrastructure assets, or a serious estimate of the cost of meeting contract commitments.<sup>38</sup> Few if any contracts have addressed tariff issues. These problems have led some observers to conclude:

"...long term leases that have been concluded in the last year [2004-5] are legally very fragile, which is why many are rather declarative and resemble memoranda of understanding more than actual contracts. However, it cannot be denied that these contracts have a great political value"<sup>39</sup>

51. The circumstances in which the early contracts were arranged favoured local operators over foreign participants.<sup>40</sup> Large local businesses also had a strong political motive for their involvement. Where concessions have involved foreign sponsors or operators specific steps have been taken to obtain political and commercial comfort. The St Petersburg BOT is undertaken under the political umbrella of the Northern Dimension Environmental Partnership, while the Moscow concessions have political and

---

<sup>37</sup> OECD/EUWI/EAP, 2005

<sup>38</sup> In Syzran municipal property was transferred into a trust. The private management company managed positive results in the first year of operations (e.g. raising bill collections to 93%) but the contract failed to specify the tariff formula or the quantity and quality of services. Also regulation was transferred from municipal to regional level, which complicated agreements on tariffs.

<sup>39</sup> Sivaev & Prokofiev, 2005.

<sup>40</sup> Global Water Intelligence, Aug 2004, pp 15-16.

commercial guarantees provided respectively by the German export credit agency Hermes and the state government of North Rhine Westfalia.

52. The basis of future private involvement in the Russian water sector is still unclear. So far the investment that has taken place has been funded from tariff revenues or operators' own funds rather than external loans. The sector currently has low profitability and significant financial risks, and private operators are calling for government guarantees, access to low interest commercial bank loans, the right to use future cash flows as collateral for bank loans, more predictable tariff setting procedures, more effective payment enforcement including freedom to disconnect non-paying users, etc.<sup>41</sup>

### ***Armenia***

53. Since 2000 the water services of the capital city Yerevan have been operated by a consortium led by the Italian company ACEA under a Management Contract as part of a World Bank sector loan. The contract specified 92 performance targets. Implementing the contract has been highly problematic for the company<sup>42</sup> but progress has been made, (Box 4 in Chapter 4). The contract was recently renewed, though it was awarded to a different company (Veolia) on a 10-year basis, with an investment commitment from the operator.

### ***Kazakhstan***

54. In the last decade PSP has taken major strides in the water sector. In Almaty two concessions have been issued to foreign companies.<sup>43</sup> Elsewhere, 40% of the water utilities serving medium and small towns (defined as between 10,000 and 100,000 population) are now privately operated, most under full asset ownership. Some of these were utilities belonging to state enterprises that have been privatised. Many have arisen as a by-product of insolvency proceedings. There are also many cases of management buy-outs that continue to be led by the former managers. Some of the earlier privatised companies have reverted to state ownership due to operational difficulties or a desire to be eligible for state investment grants. Although multiutilities are common there has been little entry into water by businesses from other sectors – who find water financially unattractive under the present regulatory regime. Crucially, knowing how to deal with the regulator is a vital, and sector-specific skill.

### ***EECCA general***

55. The scope for more involvement of *foreign* private firms in regional PSP was debated at a Conference in Vienna in 2003 of the World Bank and OECD. A number of “new” operators were present, all of which expressed interest in management contracts. There was, however, little appetite for the more high risk variants such as concessions or even leases. These operators called for a more pro-active involvement by the World Bank and other IFIs/donor agencies, and access to guarantees and other measures to mitigate risks and improve the terms of financial packages. There was some discussion of the scope for combining smaller cities to make up projects of a more attractive size, so as to spread the minimum threshold costs of these transactions.

---

<sup>41</sup> Sivaev & Prokofiev

<sup>42</sup> ACEA presentation to Vienna Conference of OECD & World Bank, July 2003.

<sup>43</sup> Veolia and Biwater.

### 3.4 China

56. Annex 2A lists 27 private operators in China's water sector serving at least 150 million people, and no doubt this is a conservative estimate of the true numbers. Few major cities are untouched by this phenomenon. Companies are of all kinds – private listed companies of local origin, local subsidiaries of companies whose parents are based overseas, state enterprises and municipally-owned companies which are corporatised and partially-listed, etc. Some originated as joint ventures with foreign multinationals (e.g. Beijing Capital Co, China Everbright, CITIC, etc) or have IFC equity (Beijing Sound, the first and largest private operator in wastewater). There is even a case of a reverse take-over (Cheung Kong owns Cambridge Water in the UK). Apart from projects operated by locally-based concerns, the Chinese market also attracts operators from other countries, especially from South-East Asia.

57. The most common contractual form is the BOT and its variants, together with management and operating contracts. However, other forms of PSP include system concessions and asset ownership (usually in joint ventures with public bodies). The larger companies (e.g. Shanghai Industrial Holdings, a corporatised company mainly owned by Shanghai City) work through an elaborate web of subsidiaries, special purpose vehicles and joint ventures.

58. When the early PSP projects were conceived (e.g. Chengdu BOT) the Government required bidders to include foreign exchange finance in their proposals. This tended to favour foreign companies. Recently, with the massive growth of both foreign exchange reserves and local savings, this requirement has been dropped.

59. The dynamism of the Chinese RME movement is due to several key factors:

- The phenomenal growth of the Chinese economy, and its concomitant urbanisation which has created massive demand for new water services.
- Growing environmental awareness, and concerns about pollution caused by unsafe wastewater disposal.
- A pragmatic attitude by the public authorities at all levels towards PSP.
- Active involvement of operators from other countries, including those with an “overseas Chinese” connection.
- The ample availability of local finance on suitable terms.
- An entrepreneurial spirit displayed by companies of all types, with and without water experience, including state enterprises and municipal agencies. These companies perceive water as a growth market.

### 3.5 South East Asia

60. Local private operators are active in Malaysia, Thailand, Singapore and Philippines, and a number of them operate outside their own countries.

#### *Malaysia*

61. Under the federal constitution, water is a state responsibility and the different states illustrate a wide range of organisational models:

- State public works departments (Kedah, Perlis, Labuan).
- State water supply departments (Negeri Sembilan, Pahang).
- Autonomous state water boards (Melaka, Perak, Kuching).
- Corporatised state water authorities (Selangor, Terengganu).
- Privatised water companies (Penang, Johor, Kelantan).

62. There are ten Malaysian companies with local or regional operating experience, plus a further one which has made a “reverse take over” of a UK company (Wessex Water) and which also has holdings in Australian utilities. Two of these confine their operations to Malaysia, the rest have expanded into neighbouring countries (China, Indonesia, Thailand, Vietnam), and one into India. Four sponsor companies specialise in water supply and treatment, others are conglomerates or have backgrounds in other utilities, retailing, property, construction, engineering, finance, and power. There is a trend for local pension funds to finance water projects.

63. Within Malaysia there are instances of private take-over of a former state-owned water company (Johor) by Ranhill BHD and the evolution of a former state water company (Penang) into a floated joint stock company with shares issued to the public. Other cases involve BOTs, DBOTs or operating and management contracts. The largest operator, SYBAS, has operation and management contracts and BOTs for Selangor and the Federal Territory of Kuala Lumpur, one of which it took over from Veolia. Three companies have backgrounds in water, others are diversified conglomerates, or originate in other utilities, retailing, property, construction, engineering and finance.

### ***Thailand***

64. There are two principal operators. Karnchang, whose core operation is in construction, holds a BOOT and a BOT in Bangkok, both joint ventures with Thames Water. Universal Utilities Co has a number of BOT and O&M contracts in other parts of the country. Its parent, Eastern Water Resources Development & Management Public Co Ltd, is a partly-privatised and floated company formerly belonging to the Provincial Waterworks of Thailand.

### ***Singapore***

65. Of the seven companies based in Singapore, only two have significant operations in the island. Altogether, the companies operate water services in China, Indonesia, Philippines and Taiwan. One company has an operation in UK, and another consortium has its sights on oil producing countries of the Middle East. All the operators appear to derive from sponsors with previous experience in water services or water equipment and supplies. One company (Boustead) dates from 1828. Another (Hyflux) is a local affiliate of the giant US multinational of the same name. Singapore Water Solutions Alliance is a grouping brokered by the Singapore Government of 8 firms with diverse interests formed to procure work in the Middle East. The BOT is the most common form of contract for these operations. In one case (Hyflux desal plant for the local Public Utilities Board) equity was taken over from Suez.

### ***Philippines***

66. The largest RME is Manila Water, in which the major shareholder is local conglomerate Ayala Corporation. Manila Water holds the concession for water and sewerage in East Manila, with contracts in three other cities and regions. The second largest operator is Benguet, a long established mining company,

with two management contracts. Davao Light and Power is an electric power supplier, with water service contracts for some small and remote communities. Aqua Atlas is a new water subsidiary of a large conglomerate, and in negotiation for a project in Cebu.

67. Concessions for Manila's water system were awarded in 1997 and the city became a flagship project of the privatisation movement. The network was split into Eastern and Western parts, each being bid and awarded separately as 25-year concessions, with tariffs as the main criterion. Manila Water Co was awarded the Eastern part, and Maynilad Water Services the West. In the interests of harmonising tariff levels in the two halves of the city responsibility for the existing debt of the former utility (owed mainly to the World Bank and ADB) was distributed asymmetrically between the two concessionaires, 90% to Maynilad and 10% to Manila Water.

68. The 100% depreciation of the peso in the first part of 1997, after signature of the contract but before take over of the assets, doubled Maynilad's debt service obligation, since the tariff formula did not provide for adjustments of this magnitude. For the first three years of the concession period Maynilad's revenues only covered the Concession Fee payable to the city (which was largely accounted for by debt service). The company has been in prolonged negotiations with the government for a revision of the terms of its contract, and at the time of writing the concession is up for sale. In contrast, Manila Water broke even in the third year, has been in surplus since, and has solid achievements in key performance indicators.

69. Although not the whole story, the imposition of 90% of the foreign currency debt servicing obligations on one concessionaire<sup>44</sup> is a major factor in explaining the different performances of the two concessions. This should not, however, detract from the positive performance of the other concessionaire which, at the time of writing, is a strong contender to take over the concession for the Western part of the city.

### *Indonesia*

70. Jakarta has been divided into two concessions, led by Suez and Thames Water, respectively. After some difficult years, Thames has just announced that it is selling its controlling stake in the operator Pam Jaya to Acuatico, a Singapore-based company owned by the Indonesian firms Recapital Advisors and Glendale Partners. Recapital is an affiliate of an Indonesian investment bank providing fund management and investment advice, with a reputation for acquiring and transforming underachieving companies. The company has plans to invest in other water projects in this region. Glendale is a Jakarta-based infrastructure development and project management company with extensive experience in the regional water sector.

## **3.6 South Asia**

71. The burgeoning activity of local private operations in China and South East Asia is in striking contrast to the situation in South Asia, where PSP has made little inroads into the water sector.

### *India*

72. The five operators are each very different. BHEL is a huge heavy industrial company in which the Indian Government has a majority stake, which holds O&M contracts in Bangalore and Chennai. Larsen & Toubro is a large construction firm, part of a consortium holding a BOT for industrial water supply in Vishakhapatnam.<sup>45</sup> Jamshedpur Utilities & Service Co is a multiutility special purpose company

---

<sup>44</sup> This was not the initial choice of Maynilad, but was imposed on the company during the award process.

<sup>45</sup> Hereafter referred to by its popular name of Vizag

formed by Tata Steel to supply comprehensive urban services to this company town in a spirit of enlightened paternalism. Mahindra Water Utilities was formed to operate a project conceived by ILFS, which specialises in the commercialisation of infrastructure projects: apart from one project under implementation (Tirupur) ILFS is a bidder for the former Maynilad concession in the Philippines. IVRCL has BO/BOTs in Alandur, Hyderabad and Chennai. This company has moved along the value chain from lower to higher risk operations: starting with civil engineering contracts, it moved into lump-sum turnkey operations, progressing to design and implementation, and then to BO and BOT projects.

73. Each of the companies and their projects have distinctive features. Jamshedpur is a case apart: JUSCO is providing a high level of service and is in many ways a model of company responsibility and responsiveness to consumer needs. However, this is a small town by Indian standards, and Tata has a rare corporate ethic. At present JUSCO's water operations are cross-subsidised from other services, though the eventual aim is financial self-sufficiency. BHEL is a state enterprise expanding cautiously into water services from its core business of the manufacture of heavy engineering products. ILFS so far has only one project underway, which took seven years to prepare and incurred heavy up-front costs, and Tirupur is not a typical Indian city (relatively small, prosperous, and with a high proportion of its water demand coming from industry).

74. Two of IVRCL's projects are joint ventures with European companies, the third is the Athletes' Village for the 2002 National Games in Hyderabad. Larsen & Toubro's BOT in Vizag involved a pipeline to supply water to industrial and agricultural users, which is now complete (industrial users cross-subsidised farm water, which is free). This contract has now been suspended by the new state government, which is trying to buy out the existing stakeholders, and which meanwhile has placed the contract onto a year-by-year basis.

75. The Delhi Jal Board has plans to issue two 6-year management contracts for water supply and sewerage for the city, but the bidding has been postponed indefinitely. One potential bidder is Manila Water, in association with the construction firm Larsen and Toubro and the Mahindra Group. The delay on this project typifies the slow progress of PSP in the Indian water sector, due mainly to political opposition at state and municipal level to the involvement of private enterprise in this area. Private operation has more chance of acceptance for industrial supply but even then, as the Vizag experience shows, it is no guarantee of the security of contract. Political opposition has stalled reforms in Delhi and elsewhere.<sup>46</sup>

76. Part of the opposition to PSP is due to a public perception that companies earn high returns from such projects (e.g. the Vizag BOT guaranteed rates of return of 15%, and investors in other projects expect returns of 17-20%). This is largely a reflection of risks perceived by investors. In part these risks are political (sanctity of contract, attitude of regulator) in part informational (bidders are denied information about the state of infrastructure by hostile utilities, so inflate their bids).

77. There may be better prospects for private operation in distribution through the use of short/medium term O&M contracts, especially in smaller towns and cities where the issue has less political resonance. There are also possibilities of BOT contracts for desalination plants, though proposals in Chennai are making heavy weather.<sup>47</sup>

---

<sup>46</sup> Platts Global Water Report, July 7, 2006.

<sup>47</sup> Platts, 20 Oct 2006

### 3.7 Sub-Saharan Africa

78. There is a clear divergence of experience between the francophone West and Sahel, on the one hand, and the anglophone East and South, on the other. The *affermage* contracts in Ivory Coast and Senegal are long established and successful judged against the difficult economic environment in this region. Both were started by French multinationals and have achieved a substantial measure of localisation in both equity ownership and staffing. The same is broadly true of the operation in Gabon. In Cameroon the current PSP bidding process, supported by the AfDB and World Bank, specifies a substantial element of local equity participation. However, the lease contract in Guinea expired in 1999 and has not been renewed.

79. The movement towards RMEs has made little sustained progress elsewhere in sub-Saharan Africa. A dozen or more PSP projects have been arranged since 1997 in South Africa, Mozambique, Cape Verde, Mali, Niger, Uganda and Congo (Brazzaville), all led by foreign companies. A number of these contracts are problematic, and there are many cases of abortive attempts to start new ones. The lease contract in Dar es Salaam, in which a local company had a minor share, was suspended in 2005. The management contract for Ghana's national water utility was awarded to a partnership of Vitens (a publicly owned water company in the Netherlands) and Rand Water (a South African utility).

80. On a positive note, small-scale operators are thriving in certain francophone countries and Uganda. (Box 3). Informal operators are widespread in all African cities. South Africa has a handful of relatively small PSP contracts, including several BOTTs which have the intention of training local operators prior to transferring operating responsibility.

#### Box 3. Small RMEs in Uganda and Mauritania

Although the local private operators in Uganda's Local Government Contracts are relatively small (typically serving towns of 10,000+ population) the experience has positive lessons for larger-scale ventures. Local Governments are grouped into Urban Water & Sewerage Authorities, each of a minimum scale ("cluster") to make the arrangement viable. UWSAs sign performance contracts with LPOs, typically of 1-2 years, with management fees made up of 5 components: base fee, water sales, billing, network maintenance, and new connections. Despite teething troubles of some operators, the overall progress of this programme has been encouraging. The Government's strategy is to put more emphasis on demand-driven approaches, setting clear rules of the game and clarity of access to funds, placing local governments in the driving seat over design and procurement, and progressing from management contracts to leases.<sup>48</sup>

In Mauritania towns over 20,000 population are managed by the national water company, SNDE. In smaller towns local operators are engaged under 3-year delegated management contracts with a central body ANEPA. Currently 300 independent operators serve more than half of the national population. These operators out-perform water services in larger towns on key measures and have extended the systems they run. They have invested over \$5 mn in their networks, even though such investment is not factored in to the water tariff, and nearly all is recovered from tariffs.<sup>49</sup>

81. There is a shortage of active new local private operators at the scale needed for medium to large cities. This is no doubt due to several factors, all of which add up to a serious shortage of projects appropriate for PSP. Firstly, there is suspicion of private involvement in water supply, exemplified by the NGO-inspired campaign against PSP in Ghana. Secondly, private companies, local as well as foreign,

<sup>48</sup> Presentation by Christopher Azuba, *Local government contracts with private operators in Uganda* (undated)

<sup>49</sup> article available from BPD & AFD – [www.bpdws.org](http://www.bpdws.org)

perceive serious risks from operating in this sector in Africa. Thirdly, there are serious barriers for private business in all sectors. According to a World Bank study, of the 35 “least business friendly” countries in the world, 27 are in sub-Saharan Africa. 42% of the region’s economic activity is believed to be informal, the highest proportion of all the world’s region. Despite the plethora of informal and small-scale water operators, few manage to break through into full-scale services conducted in the formal sector.

### 3.8 North Africa & Middle East

82. In Morocco there are examples of hybrid concession/*affermage* projects in Casablanca, Rabat and Tangiers/Tetouan. In Casablanca Lydec (*Lyonnaise des Eaux de Casablanca*), a local subsidiary of Suez holding a management contract for the city, has taken steps towards localisation by an Initial Share Issue for 49% of its equity. This IPO was well subscribed, and leaves almost half the equity in the hands of local companies and individuals. In Tangiers/Tetouan Veolia’s partner is ONA, the largest private conglomerate in the country, which is likely to expand its interest in water operation to other cases.

83. There is a different model in the city of Algiers, where Suez has been awarded a major 5-year management contract for water and wastewater services in partnership with the National Office of Wastewater and the Algerian Water Authority. The entire investment for modernizing water supply facilities and wastewater treatment will be met by the Government. The contract provides for an extensive transfer of know-how and training, envisaging the possible development of a closer eventual partnership. This is an example of a country which has ample financial sources of its own (currently boosted by high prices for oil and gas) where the attraction of a *foreign* water operator is the possibility of the transfer of experience and know-how. Given the prominent position of state agencies in the Algerian water sector, the emergence of RMEs is several steps away.

84. In Gaza a management contract was issued in 1996 to a consortium of LDE (Suez) and the local firm Khataib & Alami. The management fee, which was the bid criterion, was split between a fixed element and a part based on performance. The latter was linked to 30 performance indicators, which were monitored on a quarterly basis by a local commercial auditor. Progress has been made on some, but not all, of these indicators, in a difficult political, social and economic environment.

85. Amongst Middle Eastern oil producers, the Saudi AmiWater is becoming a major operator at one remove, through its ownership of companies with greater direct experience (Infram, OMC and AquaMundo). Qatar’s Electricity and Water Co. is building up a track record in operating local desalination plants. Oil producers are increasingly important in recycling oil revenues into infrastructure, both directly (e.g. the Qatar Fund) and indirectly (through banks and investment funds such as Macquarie active in water company acquisitions). However, the growth of RMEs is so far limited to BOTs, especially for desalination plants, with limited spill-over of experience to the utility or systems level.

## 4.0 CONCLUSIONS AND IMPLICATIONS

### 4.1 Some conclusions

#### *Geographical diversity & specificity*

86. What emerges strongly from the above discussion is that the phenomenon of RMEs is at different stages, takes different characteristic forms, and has different drivers, problems and barriers in each region. Each region and sub-region has a different agenda.

87. Latin America has the greatest experience in PSP in water and a varied tableau of cases. Some pioneering local operators have given way to foreign multinationals, but there are many more instances of private firms partnering foreign companies and using these as a springboard. Where multinationals are in retreat (notably in Argentina) this has sometimes been to the benefit of RMEs, though governments and municipalities have also stepped into the breach.

88. There is a growing body of experience with RMEs in China and South-East Asia. It may be beneficial to all parties to digest what is happening – much of it at breakneck speed – and form a view on what constitutes good practice and how the gap between good and bad practice can be narrowed. Issues would include the type and design of contracts, procurement arrangements and transparency, appropriate project finance, regulations, tariffs & cost recovery, customer relations, etc.

89. The problem is very different in South Asia, where there are very few cases, fewer still that are successful, transferable and replicable. So long as there is implacable political and public opposition to PSP in water services, it is naïve to expect a major breakthrough in RMEs. Progress is more likely to be through the less contentious routes of sub-contracting functions and O&M contracts, especially in smaller cities. Nevertheless, the scale and urgency of the problems with public water systems in all major cities may force a change in popular and political attitudes.

90. In sub-Saharan Africa the absence of RMEs is not so much due to local political opposition as to two other factors: firstly, the thin pipeline of PSP projects due to the familiar litany of sector-specific risks; secondly the difficulties facing local informal and small-scale operators in breaking through into the formal sector stratosphere. This is linked to the poor business climate in most African countries – the solution to which has its own, very large, agenda.

91. In Russia the emergence of RMEs is very recent and represents a political leap of faith on their part given the fragile legal environment in which they work. Many aspects of the Russian enabling environment are still evolving. In North Africa PSP in water is furthest advanced in Morocco and there are signs of an emergence of RMEs. In other parts of North Africa and the Middle East a statist paradigm is still entrenched, though in the oil producing states there is a strong growth of BOTs in desalination and wastewater treatment.

***Performance and track record of RMEs.***

92. RMEs are by definition a recent phenomenon and few have been in existence long enough to justify confident judgements about their performance. Also, there are still very few objective evaluations of their experience (Box 4)

**Box 4. Management contract in Yerevan**

ACEA is a listed joint stock company 51% owned by the Municipality of Rome. It has management and operating contracts in half a dozen overseas countries. By its own confession, it seriously underestimated the extent of the problems facing Yerevan Water & Sewerage Enterprise at the time the contract was awarded. These problems included: excessively high average consumption due to waste and leakage, excessive staff levels, water supplied only 7 hours per day, annual power bill 2.5 times greater than revenues, collection rate only 21%, hidden debts and a 2-month arrears of staff salaries, etc. The Management Contract had not been harmonised with Armenian law and statutes, and government subsidies and counterpart funding had not been budgeted.

After three years tangible progress had been made in a number of areas. The company had undergone major restructuring. Average staff salaries had risen by 3.5 times. Electricity consumption had fallen by 20%. Water was supplied for 13 hours per day. Current debts were paid and fines and liabilities settled. 80,000 customers were metered and 210,000 customer contracts signed and recorded. A new law was approved to deal with illegal users, 2000 connections were legalised, and the average collection rate rose to 77%. Payments were made only through banks and the post office. Preventive maintenance was begun, and accounts were computerised and accounting practices brought to international standards.

After a perilous start, ACEA improved to become a success story in the eyes of the World Bank and Armenian authorities. New operators may have to pay for their lack of experience and navigate a costly path through the learning curve. ACEA has not yet ventured into other contracts in this region. Clear improvements were registered in service quality in Yerevan while the contract was in force, though it is hard to disentangle what is due to efforts of the private operator and what is linked to broader policy measures undertaken by the authorities.

93. A few tentative conclusions may be drawn from the earlier discussion.

- i) Promising markets have attracted a plentiful supply of RMEs even where key elements of the normal “enabling environment” have been absent or weak. China is the obvious example, and Russia to a lesser extent.
- ii) Where markets are weak (often because of lack of political commitment, or hostility, to PSP) the negative influence of other risk factors becomes more apparent. This applies to South Asia, sub-Saharan Africa and some Latin American countries. The “Disabling Environment” affects both old and new operators, and it is not yet clear whether the RMEs can weather the storms any better than the “old” multinationals. Argentina, where RMEs have taken over some of the concessions relinquished by multinationals, will be a revealing case.
- iii) Some RMEs have no previous experience as water operators. A number of these are essentially single-project outfits or special purpose vehicles, with limited aspirations. Companies that successfully take on other projects and can operate outside their home region or country have obviously crossed the first *performance hurdle* (Box 5). A further development is the “reverse take-over” by RMEs of companies and projects in developed countries, but such cases are still untypical.

**Box 5. Manila Water**

Manila Water broke even in the third year, has been in surplus since, and has solid achievements in key performance indicators – increasing the connection rate, spreading connections to the poor through its *Tubig para sa Barangay* programmes, reducing staffing and other costs, and improving service quality. Having performed well in its own concession, the company is bidding to take over the concession in the other half of the city, has contracts elsewhere in the Philippines, and is in the bidding for an important project in India.

- i) another *performance hurdle* is the ability to take on a contract for a whole system (e.g. lease, concession) rather than for a stand-alone facility. The former typically involves a wider range of risks, and calls for skills in customer relations, compared with a BOT or equivalent. The BOT is by far the most common form of contract, and it will be interesting to see how many RMEs can progress to other forms of contract.
- ii) RMEs show no obvious differences with old operators in their appetite for *risk*. New entrants seem perfectly willing to enter risky new markets, even those with no direct experience in water, and where the usual comfort factors are lacking. What may be different about the RMEs is their ability and confidence in handling risks as they arise. Most RMEs are locally-based, have established political connections, a cash flow from existing businesses, and many can source local finance. A number also have a long term perspective (e.g. those taking on 49-year leases in Russia). Where contracts are renegotiated, which is common in water PSP and – up to a point – healthy, the above factors can help to avoid acrimonious and barren outcomes. In short, locally-based RMEs, or those with strong traditional or cultural links with the market concerned, may have advantages over their older foreign-based rivals in the area of risk management.

***Operator-sponsor links***

94. The relationship between private operators and their sponsors takes many forms. In some cases the operator is merely a different facet of the sponsor. Elsewhere, the operator is created or acquired as a specialised subsidiary. In some cases the operator is a special purpose vehicle created for a particular project. Some “local” operators are subsidiaries of foreign firms, or junior partners in a joint venture with the latter. In other cases a foreign-dominated venture is evolving into a local operation through public share issues or other types of localisation. The commercial legal structures linking parent companies to operators can be impenetrable, and difficult to categorise in reports such as this. The subject would repay further research.<sup>50</sup>

***Core business bias***

95. This survey has uncovered a number of avenues through which companies enter into water operation. Their origins and core business background can be expected to affect their approach to the water sector – e.g. their business models, and performance. Financial firms and fund and asset managers are more likely to take a short-term profit-maximising approach to their holdings than, say, a former public utility that has transmogrified into a commercially-driven plc. Construction and manufacturing conglomerates will tend to view water operations through the prisms of builders and suppliers, respectively. One might expect established water operators taking on new projects to have the best prospects of success because of their prior experience and possession of necessary skills. But multiutilities may be able to transfer novel approaches from other public services. The NPWO phenomenon is relatively

---

<sup>50</sup> an obvious intellectual framework would be the principal-agent paradigm.

recent, but a comparison of performance and approaches of companies with different core businesses would be informative, and could be useful in calibrating good practice.

### ***Contractual type***

96. Although system concessions and full asset ownership are present in the sample of RMEs used here, the most common contracts are the BOT concession (and its variants) and management agreements (including O&M). Management and operation contracts are at the low-risk end of the PSP spectrum, though risk is present insofar as they are performance-related. BOTs are more risky, especially if they involve design and require the bidder to raise finance, but demand risk is normally covered by “take or pay” agreements. Even so, these contracts incur risk through the trade-off between cost and design parameters and tight deadlines for completion and commission.<sup>51</sup> Take or pay agreements may also fail to stand up to major discrepancies in actual, compared to projected, demand. The BOT concession is attractive to companies entering the market via manufacturing or construction because it limits their need to be involved in the planning of distribution networks, customer relations, tariff setting and revenue collection. This takes some of the political sting out of PSP. But by the same token, it ring-fences the beneficial impact of PSP.

97. Management and operating contracts can be the means of transferring expertise to the client across a broad front. They are attractive to smaller and new operators since no balance sheet risk is involved, and can be the precursor of deeper involvement through leases or full concessions as the operators gain knowledge and experience of the systems they are working. The sample of RMEs in this report includes contrasting experiences with management contracts: in Mexico City operators have been frustrated by the limited roles they have, though this has avoided any serious political reaction; in Yerevan a new operator was initially overwhelmed by problems which soon became apparent; in Algiers a comprehensive management and training contract with a foreign operator could lay the foundations for progressive local involvement. Experience with management contracts for RMEs in Barranquilla, Gaza and Amman is generally positive, though underlines the importance of avoiding too many individual performance targets.

### ***Role of finance***

98. A decade ago, the superior access to finance of foreign operators gave them a potential advantage over local companies. The latter were further disadvantaged by the weakness of local capital markets for financing infrastructure. The situation has now changed, and the perceived advantage of foreign companies is reduced. Foreign companies that committed equity or incurred debt in foreign exchange have been badly bruised by devaluations in key markets (e.g. Argentina, Philippines, Indonesia). Conversely, emerging countries have developed their local capital markets as sources of finance for infrastructure<sup>52</sup> and many governments are now flush with revenues from oil and other commodity exports. Access to capital is no longer a determining factor in the award of contracts in many countries, and local operators can increasingly tap into national sources of finance.

99. However, in most countries of sub-Saharan Africa access to finance suitable for infrastructure remains a serious problem. In this situation, recourse to foreign concessions might appear appropriate, but this has run into political opposition, and in any case such projects have been very few – and problematic – due to the usual sector-specific risks. There is the further consideration that donor and IFI funding is available and often easier to access by public sector borrowers. This would signal a potential role for

<sup>51</sup> Presentation by ING Bank at Seminar on Water Project Finance, Trinity House, London, June 2006.

<sup>52</sup> In a very recent development, a group of Indonesian municipalities have issued a collective bond for infrastructure investment.

RMEs working under management and O&M contracts, with their public sector clients raising the funds for investment.

### *National legal & regulatory framework*

100. An adequate legal and regulatory framework is normally stated as a *desideratum* of PSP. However, the sample of companies in this report contains examples of progress in the absence of the conventional enabling environment, and other countries where a sufficient legal framework has not led to a significant response from RMEs. In Russia the companies clearly believe that the strength of political commitment on both sides is enough to overcome the many uncertainties and ambiguities in commercial law that would normally deter newcomers. In China, although the commercial legal framework is not as refined as many would like, the size and growth of the water market has attracted many local players, trusting that their political contacts and economic power will stand them in good stead. Contrast these with the situation in Mexico, where the legal framework is supportive of PSP, but where local RMEs have been slow to emerge. The moral seems to be that the creation of the legal and regulatory enabling environment is desirable, but is neither necessary nor sufficient in the last resort.

### *Xenophobia vs. cronyism*

101. In some countries hostility to PSP in water is inseparably linked to xenophobia towards the foreign multinationals involved.<sup>53</sup> In such cases the involvement of local RMEs might be more acceptable to local opinion. There are cases where the termination of a foreign concession has led to governments taking the venture back into public ownership and control. But in other cases (e.g. some Argentinian cities) local RMEs have taken over the concessions. In Chile the vigorous movement towards PSP in water has doubtless been facilitated by the paucity of foreign companies, which has avoided a nationalistic backlash. The downside of local RMEs is the potential for cronyism and corruption where contracts are awarded or public assets become available (for sale or lease) on favourable terms to local companies, or “distress sales” are made of former foreign concessions to local favourites. Competition and transparency issues will also arise where water operators have other important business links, and where regulation is weak.

## **4.2 Implications**

102. Like the spread of the “old” operators in the 1990s, the RMEs have expanded due largely to market forces, though these have been shaped by governments and in many cases state agencies are stakeholders in the new operators. However, market failures exist and create wedges between social and private expectations and returns. Governments and international stakeholders have to consider whether, when and how they can intervene to produce a happy balance of private and public interests.

103. This final section includes a few general pointers and a first attempt at an agenda for action by the different stakeholders.

### *General pointers*

- RMEs come in many forms, and arise in many different situations: stereotypes should be avoided
- The phenomenon is recent (on its current scale, within the last decade) and it is too early to judge its eventual potential – e.g. whether it is likely to grow outside its current regional markets of concentration, and whether existing operators are equal to the responsibilities they have taken on.

---

<sup>53</sup> and hostility to “globalisation”.

- Further study of the RME phenomenon and the performance of existing companies is desirable to provide a sounder basis for policymaking
- Benchmarking, peer exchanges and other methods of exchanging experience amongst RMEs would help to define good practice and narrow the gap between the best and worst operators.
- Several of the “old” operators are still active in the markets concerned, and are deeply interwoven with the RMEs. They are still an important part of the solution.

#### *Host governments and water authorities*

- Where a shortage of PSP projects is the main reason for a lack of RMEs, support project preparation, deal making, and risk mitigation.
- Where small-scale water operators need help to scale up and overcome existing barriers, review current laws and practices to identify specific obstacles, and create a framework in which PSP with small local operators could flourish.
- Improve the general climate for doing business.
- Review whether the existing regulatory system is appropriate for the new model RMEs.
- Frame PSP bidding and contractual procedures in ways which do not discriminate against local RMEs.
- Make procedures for awarding contracts to local RMEs open and transparent to avoid suspicion of corruption and cronyism.
- Where foreign know-how is important to a project, design contracts to involve local firms as partners leading to the progressive transfer of experience, in order to encourage localisation of expertise.

#### *Donor agencies and IFIs*

- Review whether procurement rules discriminate against local RMEs, and revise accordingly.
- Use instruments to stimulate local capital markets as sources of infrastructure finance (e.g. risk mitigation, guarantees, local bond issues).
- Support management contracts involving RMEs.
- Facilitate “twinning” arrangements between external operators (or consultants) and local operating companies.
- Review available instruments and financial products (e.g. greater use of local currency facilities).

*Old and new operators*

- Contribute to the development of international good practice by pooling research and experience of existing projects, feeding into benchmarking data banks, developing codes of bidding, procurement, transparency, etc.
- Collaborate with other operators and agencies in the creation of pools of expertise for trouble-shooting contracts in difficulty (possibly financed from successful future performance).
- Identify aspects of the business climate that obstruct the growth of RMEs and engaging with governments and other parties to overcome these.

## ANNEX 1 REFERENCES & SOURCES OF INFORMATION

- Bayliss, Kate: *Water privatisation in Sub-Saharan Africa: progress, problems, and policy implications*. Paper presented at Development Studies Association Annual Conference, Greenwich, UK Nov 2002.
- Economic Commission for Latin America and the Caribbean (ECLAC): *Progress in the privatisation of water-related public services: a country-by-country review for South America*. LC/R.1697/Add.1. June 1998.
- EU Water Initiative/EAP Task Force: *Overview of domestic and international private companies operating in the water utilities sector in Russian Federation*. Document produced for meeting in Chisinau, Moldova, March/April 2005
- Foster, Vivien, *Ten Years of water service reform in Latin America: toward an Anglo-French model*. WSP, World Bank, Jan 2005.
- Haggarty, Luke, Penelope Brook & Ana Maria Zuluaga: *Thirst for reform? Private sector participation in urban water supply: the case of Mexico City's Water Sector Service Contracts*. Oct 1999. World Bank (seen in draft).
- Haarmeyer, David & Ashoka Mody: *Worldwide water privatisation: managing risks in water and sanitation*. Financial Times Energy, 1998 (seen in draft).
- Hall, David, Kate Bayliss & Emanuele Lobina, *Water privatisation in Africa*. Presented to Municipal Services Project Conference, Witswatersrand University, Johannesburg, May 2002.
- Kariuki, Mukami & Jordan Schwarz, *Small-scale private service providers of water supply & electricity*. World Bank Policy Research Working Paper 3727, Oct 2005
- Marin, Philippe & Ada Karina Izaguirre: *Private participation in water : toward a new generation of projects ?* GridLines Note no 14, Sept 2006. World Bank/PPIAF.
- McIntosh, Arthur C., *Asian water supplies: reaching the urban poor*. Asian Development Bank/IWA Publishing, 2003 (esp. Ch 7)
- Nickson, Andrew & Richard Franceys, *Tapping the market: the challenge of institutional reform in the urban water sector*. Palgrave, 2003
- OECD/EAP Task Force: *Urban water reform in Eastern Europe, Caucasus and Central Asia: progress since the Almaty Ministerial Conference*. 2003.
- OECD/World Bank: *Private sector participation in municipal water services in Central and Eastern Europe and Central Asia: Conference Proceedings, Vienna July 2003*.
- Payen, Gerard, "Water business", article in *OECD Observer*, March 2006.

Pickering, Natalie (supervised by J.A.Gomez-Ibanez & H.Lee): *Chile's water system: the privatisation debate*. Case material produced for Kennedy School of Government, Harvard, 1998 (CR15-98-1448.0)

Pinsent Masons *Water Yearbooks* 2004-6.

Platts *Global Water Reports*

Schur, Michael, Stephan von Klaudy & Georgina Dellacha, *The role of developing country firms in infrastructure: a new class of investors emerges*. GridLines. PPIAF, April 2006

Segerfeldt, Fredrik, *Water for sale: how business and the market can resolve the world's water crisis*. Cato Institute 2005.

Sivaev, Sergei & V.Prokofiev: *Private business development in the Russian water sector*. Paper for an OECD Conference of EECCA Ministers, Yerevan, Nov 2005. Ref ENV/EPOC/EAP/MIN(2005) 8.

United Nations Environment Programme Finance Initiative: *Financing water: risks and opportunities. Issues Paper*. Geneva, August 2006.

WSP, *Jamshedpur Utilities and Services Company Limited: improving WSS services through partnerships with the private sector in India*. Field Note, WSP, May 2006.

World Bank/PPIAF: *Private participation in infrastructure: trends in developing countries in 1990-2001*. 2003.

**ANNEX 2A LIST OF RECENT MARKET ENTRANTS BASED IN DEVELOPING,  
EMERGING AND TRANSITIONAL COUNTRIES**

<b>Name of operator</b>	<b>Name of sponsor</b>	<b>Examples of projects</b>
<b>LATIN AMERICA</b>		
<b>Argentina</b>		
Latin Aguas SA	same	Corrientes, Salta, laRioja
<b>Brazil</b>		
AG Concessoes	Andrade Gutierrez	Parana state, Santos
Aguas Guariroba	Grupo Equipav SA	Campo Grande
SABESP	state of Sao Paulo	Sao Paulo
Global Engenharia/Planex	same	Araujo, Bom Sucesso
Galtama	same	Maua
Paz Construcao	same	Mirassol
Amafi	EarthTech Tyco& Saneciste	Jau
<b>Chile</b>		
Aguas Andinas	CORFO, AGBAR	Santiago
Aguas Antofagasta	Luksic Group	Antofagasta
Aguas de Valle	Consortio Financiero	Valparaiso
Aguas Nuevas	Solari	Tarapaca
Aguas Chanar	Hydrosan	Chanar
ESSSI	ICAFAL	Aysen
Aguas Cordillera	Enersis	E.Santiago
<b>Colombia</b>		
Acuasasa	same	Acuasasa
Aguas de la Mojana	?	Mojana
Aguas de la Peninsula	Bermad, Ing.Total	Aguas de la Peninsula
Aguas del Norte	?	Aguas del Norte
Aguas de la Rivera	small cos	Aguas de la Rivera
Consortio Almafama	small cos	Nataga
Soc. de Acueductos	small cos	Arjona-Turbaco
ASOAGUAS	Grupo Hydros	?
Uniaguas	same	ERAS
Conhidra & Hidroestudios de Bogota	Hidropacifico	
Triple A	Canal Isabel II, municipality, local investors	Barranquilla
Ing. Sala	same	Sincelajo
Sociedad Aguas de Cartagena	Municipality, Agbar, local investors	Cartagena
<b>Mexico</b>		
Aquasol	?	Morelia, Pachuca
Servicios de Agua Potable (SAPSA)	Grupo ICA & Veolia	North.Mexico City
Industrias del Agua (IASA)	Socios Ambientales de Mexico & Severn Trent	North-Central Mexico City
Tecnologia y Servicios de Agua	Grupo Bufete Industrial & Suez	South-East Mexico City
Agua de Mexico (AMSA)	Grupo Gutsa & United Utilities	West Mexico City
Compania Tratadora de Aguas Negras de Puerto Vallarta	Cascal	Puerto Vallarta
Atlatic	GEMA/CYDSA	Chihuahua Norte

<b>CHINA</b>		
Guozhen Env. Protn.	Anhui Guozhen Gp.	Shenzhen
Beijing Capital Co	Beijing Cap Gp.	Beijing, Shenzhen
Beijing Sound Env, Ind Gp	same	Jinshan (Shanghai)
Cathay International Water	Cathay Int.Gp	Dayang
Cheung Kong	Huchinson Whampoa	Yueyang
China Everbright	same	Qingdao
China Evergreen	same	Tinjin
China Water Co	same	Shaoxing
CITIC Pacific	same	Zunyi
WaterCo	Guangdong Inv Ltd	Hong Kong bulk water
NWS Holdings	New World Development Co	Tianjin, Chongqing
Shanghai Industrial Holdings	City of Shanghai	Xiamen
Tianjin Cap Env Protn	Tianjin Urban Const Bur.	Tianjin
Shanghai Urban Construction Group	Municipality	Shanghai Zhuyuan No 1
Shanghai Municipal Raw Water Co	Shanghai State Assets Management Bureau	Shanghai
Xinjiang Urban Construction Co		
Wuhan Sanzheng Industry Holding Co		
Xinjiang Hui Tong Group Ltd		
Suzhou New District Hi-Tech Industrial Co Ltd		Suzhou
Sichuan Guangan AAA Public Co Ltd		
Shenzhen Kondahl Group Ltd		
Shanghai Young Sun Investment o Ltd		Shanghai
True Global Co	Bio-Treat Technology	Xianyang
Huajin Information Industry Inv.Co		
PBA Holdings		Yi Chun City
Hong Kong Land		
Youlian Enterprise Dev. Co	Youlian EDC, Shanghai Const & Eng. Co, Huajin inf. Ind. Inv. Co	Shanghai Zhuyuan
<b>INDIA</b>		
Bharat Heavy Electricals	Government enterprise	Bangalore, Chennai
Jamshedpur Utilities (JUSCO)	Tata Steel	Jamshedpur
Mahindra Water Utilities	ILFS, Mahindra	Tirupur
IVRCL	Same	Alandur
Larsen & Toubro	L&T, municipality et al	Visakhapatnam
<b>SOUTH-EAST ASIA</b>		
<b>Malaysia</b>		
Jauhari Harapan Sdn Bhd	Intan Utilities	Perak
Kumpulan Perangsang Selangor Bhd	State development agency	Klang Valley
PBA Holdings Bhd	(former Penang Water Auth)	N.Penang
Chemical Waste Mangt	PPB Group Bhd	Selangor
SYABAS	Puncak Niaga Bhd	Selangor, KL & Putrajaya
DKLS-PJI Venture Cap	PJI Holdings	Chihu (China)
Pinang WaterLtd	PBA, Ranhill, YLI	Yuan He (China)
Ranhill Bhd	same	Johor
Salcon Engineering	Boustead Salcon	Greater Ipoh
Taliworks Corp.	same	Langkawi
YTL	same	Wessex Water (UK)
<b>Thailand</b>		
CH Karnchang Co Ltd	Karnchang & Thames W.	N & W Bangkok
Universal Utilities Co Ltd	Eastern Water Resources Devlpt & Mangt Pub Co	various
WOMC	Operation Management Co Ltd	

<b>Indonesia</b>		
Pam Jaya	Acuatico	East Jakarta
<b>Philippines</b>		
Manila Water	Ayala Corp, United Utilities, IFC, Mitsubishi	East Manila
Maynilad Water Services	Benpres, Suez	West Manila
Benguet Corporation	same	Mindanao
Davao Light & Power	same	Davao
Aqua Atlas Co	Anglo Philippines Holding Corporation	Cebu
<b>Singapore</b>		
Penyao	Asia Env Holdings Ltd	Harbin (China)
Boustead Singapore Ltd	Boustead	Yogyakarta (Indonesia)
Darco Water Technologies	Darco	Deqing (China)
Dayen Environmental	Dayen	Beijing (China)
Hyflux Ltd	Hyflux (USA)	Singspring
Sembcorp Water	Sembcorp Industries Ltd	Jurong Is.
Singapore Water Solutions Alliance	8 local companies	(new)
<b>EECCA</b>		
<b>Russia</b>		
Russian Utility Systems (aka Russian Communal Systems)	7 major local companies	Volgograd, et al
Rosvodokanal	Alpha-Eco Holding	Orenburg
Regional Utility Invs.	Bazovyl Element Holding	(new)
Eurasian Water Partnership	same	Omsk
CES-Multyenergetika	Comprehensive Energy Systems Holdings	(new)
Novogor-Prikamye	INTERROS Holdings	Perm
Syzranvodokanal	5 local cos	Syzran
Vodokanal	Vodokanal & Nordic Env Fin Co	
<b>Ukraine</b>		
Infoxvodokanal	??	Odessa
<b>SUB-SAHARAN AFRICA</b>		
<b>AFRICA</b>		
<b>Ivory Coast</b>		
SODECI	Local investors, SAUR	National water concession
<b>Senegal</b>		
Senegalaise des Eaux	Local investors, SAUR	National water concession
<b>Tanzania</b>		
Dar es Salaam Water & Sewerage Authority	Biwater, Gauf Ing, Super Doll Trailer	Dar es Salaam
<b>South Africa</b>		
Rand Water	Public sector	Ghana water management contract
Greater Nelspruit Utility Co	Biwater & Sivukile Investments	Nelspruit
Siza Water Co	SAUR & 4 local empowerment groups	Dolphin Coast
<b>Mozambique</b>		
Aguas de Mocambique	Aguas de Portugal, local investors	Maputo, Beira & other towns

<b>NORTH AFRICA &amp; MIDDLE EAST</b>		
<b>Morocco</b>		
Lydec	Suez (51%)	Casablanca management contract
(operating cos for Rabat & Tangiers/Tetouan)	ONA, Veolia	Rabat, Tangiers/Tetouan
<b>Jordan</b>		
LEMA	Suez, Montgomery Watson Arabtech	Amman
<b>Gaza</b>		
LEKA	Suez, Khataib & Alami	Gaza
<b>Saudi Arabia</b>		
AmiWater	Saudi Arabian Amiantit Co	Industrial water contract in Saudi Arabia
<b>Qatar</b>		
Qatar Electricity & Water Co	Govt (47%), rest by private cos & individuals	Several desal & power BOTs

**ANNEX 2B LIST OF RMES BASED IN DEVELOPED COUNTRIES WITH CONTRACTS IN DEVELOPING, EMERGING & TRANSITIONAL COUNTRIES**

<b>Name of operator</b>	<b>Name of sponsor</b>	<b>Examples of projects</b>
<b>Austria</b>		
WTE Wassertechnik	EVN	Russia, SW Moscow
Inframan	Saudi Amiantit Co	Russia
<b>Belgium</b>		
Aquaplus NV	Aquafin NV	Chile
<b>Italy</b>		
ACEA	City of Rome (51%)	Yerevan (Armenia)
AMGA SPA	City of Genoa (54%)	Chisinau (Moldova)
<b>Germany</b>		
AquaMundo	(Saudi) AmiWater	Albania, China
Gelsenwasser	Gelsenwasser A.G.	Expanding into Eastern Europe
<b>Spain</b>		
Inima	OHL	Brazil, Chile, Mexico
FCC	FCC	Venezuela, Argentina, etc.
Urbaser	Grupo ACS	Argentina
Iberdrola SA	same	Uruguay, Chile
Tecvasa	Various cos	Colombia, Dom Rep, Ecuador
<b>Portugal</b>		
Aguas de Portugal	Portuguese Government	Mozambique, Cape Verde
<b>Netherlands</b>		
Vitens	Public authorities	Ghana
<b>USA</b>		
Earth Tech	Tyco International	Mexico, China, Brazil, etc.
CH2M Hill	Employee owned	Philippines, Taiwan
<b>Cayman Is</b>		
Cayman Water Co	Consolidated Water Co Ltd	Caymans, British Virgin Is, Belize
Southern Cross	Southern Cross Latin American Private Equity Fund	Thames Water's former concessions in Chile