Regulating Public and Private Partnerships for the Poor

CONTRACT MONITORING PRIVATE PROVIDER: Amman

Jordan has made remarkable progress towards achieving universal service for its urban population, engaging the private sector in a drive towards efficiency and customer-focused service improvements. Notwithstanding exceptionally high connection rates and a tariff policy which was designed to ensure affordability to all citizens, there remains considerable scope to address the link between water and poverty from an institutional perspective.

'The majority of residents are supplied according to a rotational rationing programme, on average receiving water once or twice per week. LEMA's major contribution to improved service has been to regularise rationing days'.

Jordan Case Study Report

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Cranfield UNIVERSITY

Case Study:

JORDAN

KEY FACTS

Population
5.4 million

Urban population
78.7%

GDP per capita 2002
US$ 4,130

HDI rank
90/177

Population living < $2 / day
7.4%

Exchange rate
$1 = 0.709 Jordan Dinar

Urban household water connections
89%

Urban improved sanitation
94%

Water Poverty Index
46.3

Study city

Greater Amman Municipality

Population
2.1 million

Regulator
Programme Management Unit (PMU)

Service Provider
LEMA

(Lyonnaise des Eaux (Ondeo), Montgomery Watson, Arabtech Jardaneh)

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Research Summary

Incentive based, economic regulation of monopoly water and sanitation providers is a powerful tool for improving services. Regulators determine the maximum water price ('price cap') to finance a desired level of outputs. Prices in high-income countries have tended to increase faster than inflation as society demands higher standards. The total revenue requirement (from which the price cap is derived) is determined by adding anticipated operating expenditure to planned capital expenditure (for capital maintenance as well as for improvements in quality, security of supply, service standards and service extensions), plus an acceptable cost of capital. Both opex and capex plans include efficiency targets derived from comparisons between a number of providers. Water companies are allowed to retain any further efficiency savings achieved within the price cap for a period (five years for example), an incentive to achieve even higher efficiency, before the benefits are shared with customers in reduced prices for the future.

This model has been adapted around the world with varying degrees of success, usually in the context of a Public Private Partnership, but until recently it has tended to be reactive rather than proactive regarding early service to the poor. There is now a recognised need for adequate economic regulation of public providers, as well as private companies, in lower-income countries, to deliver similar mechanisms for financeability and efficiency and as a prerequisite for developing effective pro-poor urban services.

The purpose of this DFID research project is to give water regulators the necessary technical, social, financial, economic and legal tools to require the direct providers to work under a *Universal Service Obligation*, to ensure service to the poorest, even in informal, unplanned and illegal areas, acknowledging the techniques of service and pricing differentiation to meet demand.

Looking to achieve early universal service, the research also considers how the role of small scale, *alternative providers* can be recognised in the regulatory process. *Customer involvement*, at an appropriate level, is seen as the third key aspect. The research investigates mechanisms for poor customers, and most importantly potential poor customers, to achieve a valid input to regulatory decision-making to achieve better watsan services

The Water Sector and Institutional Framework

Conditions of extreme water scarcity, a resource of vital importance for the Kingdom's socio-economic development, have precipitated the increasing centralisation of the Jordanian water sector.

According to official statistics, Jordan's population of 5.48 million is growing at an average annual rate of 2.8% (DOS 2004). This growing population is putting high pressure on the country's limited and vulnerable water resources, but Jordanian authorities have been successful in providing a household water connection to almost 100% of the urban population. Available supplies, however, have steadily declined to a present annual per capita share of approximately 160m^3 (GTZ & MWI 2004). This places the Kingdom in the category of absolute water scarcity (defined as <500m^3/capita/year, according to the water stress index (Abdalla, Naber, et al. 2004), and have rendered water shortages a permanent feature of domestic water supply.

Growing municipal, industrial and tourism water demand is in strong competition with the traditional stronghold of irrigated agriculture, creating a large deficit. According to latest projections, demand outstrips available supplies by 30%. Freshwater resources are fully committed, and the country is paying the price for the overexploitation of groundwater aquifers with deterioration in water quality (MWI 1997a). Once a number of outstanding augmentation projects have been completed, Jordan will be reliant on non-conventional measures to meet its rising demand. Desalination and wastewater reuse are becoming increasingly attractive options. Currently an estimated 51% of the population are connected to wastewater treatment systems (GTZ & MWI 2004).

The Water Authority of Jordan (WAJ) administers the municipal water supply and wastewater sector under the umbrella of the Ministry of Water and Irrigation (MWI). MWI holds the overall responsibility for the formulation of water strategies and policy, water resource planning, research and development, and coordination with donors. The Ministry of Health (MoH) is vested with the primary responsibility of drinking water quality monitoring to ensure compliance with public health requirements. Water resource protection against pollution is the stated role of the Ministry of Environment (MoE).

In the wake of private sector participation (PSP) in water sector projects, MWI created a Programme Management Unit (PMU) in 1997 to act on behalf of WAJ in facilitating the implementation of the Greater Amman Water Sector Improvement Program. In 1999, municipal water services in Greater Amman were delegated to a joint venture of Lyonnaise des Eaux (now Ondeo, France), Montgomery Watson (US) and Arabtech Jardaneh (Jordan), known as LEMA, under a management contract, which is now set to expire by the end of 2006. Established as a semi-autonomous body, PMU was expected to assist in

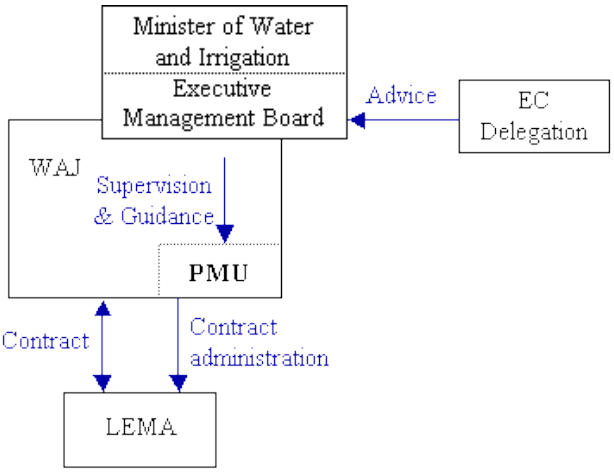
- the administration of the Amman Management Contract;
- the restructuring programme of Amman's water supply system;
- knowledge transfer, especially with regard to PSP in the water sector.

PMU operates under supervisory control of an Executive Management Board, which is headed by the Minister. The Board receives advice from the Delegation of the European Commission in Jordan. PMU is funded through a number grants and loans from US and European development partners. Government

The Jordanian Regulator: Programme Management Unit (PMU):

*"Our **vision** is to be leaders in the transformation of water and sanitation services throughout the Kingdom and to see in place more responsive customer-focused business-oriented utilities that are economically efficient and sustainable."*

*"Our **mission** is to obtain efficiencies in investment in infrastructure and improve the management of water and sanitation services. We will achieve this through promoting changes to develop the institutions and resources available for the provision of water and sanitation services, and by creating appropriate mechanisms to ensure the interests of consumers are protected at all times."*



Organisational structure of regulatory unit, PMU

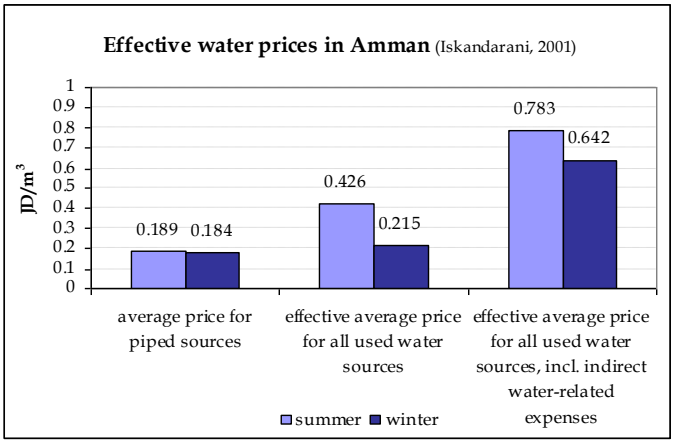
Service to the Poor and USO

LEMA has made significant progress towards turning Amman water supply and sewerage services into a profitable and customer-focused business. Profitability levels have increased such that current revenues comfortably cover both operational expenses and the management fee and generate modest profits for WAJ/MWI. Diminishing water availability, historic underinvestment and rapid, unnatural population growth following several waves of refugees and migrants have created a challenging operating environment with persistently high non-revenue water (NRW) levels (in the range of 45%).

Until the economic recession in the mid-1980s, Jordan had enjoyed low poverty levels. By 1993, however, the proportion of households living at or below the poverty line had risen to 21%, with 6.6% living under the abject poverty line. The phenomenon of urbanisation of poverty has also been observed: About two-thirds of the poor can be found in urban areas, where citizens benefit from the comparatively very high access to municipal water services. On the downside, 2001/2 figures indicate that 23.8% are lacking access to secure tenure (Ministry of Planning & UN 2004).

With regard to the location of poor households within the city boundaries, very little accurate information could be obtained. Amman's business and commercial centres as well as wealthy residential areas are located in the West, and from informants spanning the range of administration to local residents it is evident that poverty is generally understood to increase eastwards from the city centre. The photo top right serves as an example of the types of "poor areas" referred to by interviewees.

Although connection rates approach 100% within the service area, customers had to learn to live with the inconvenience of water rationing. As a consequence, customers are obliged to invest in storage facilities. These mostly take the form of storage tanks installed on rooftops (99% of low-income households have this facility), and can be backed up with ground and/or underground storage (used by 19 and 4% respectively). LEMA's responsibilities



Effective water prices, based on a 100 household survey in East Amman. Figures after Iskandarani, 2001

Above: Low-income housing in Amman

regarding quality and safety of supplies end at the water meter, and in spite of scientific evidence pointing to a potential public health risk arising from microbial contamination through prolonged storage (Evison and Sunna, 2001), household storage remains an entirely unregulated area.

Low tariffs, including a 20m^3/quarter lifeline, were cited as the single pro-poor measure by key stakeholders. At present consumption levels the price of municipal water is unlikely to generate affordability concerns for even the poorest families. Water rationing largely determines per capita water consumption for low-income customers with a higher than average number of household members and limited storage facilities (0.64 m^3/person as the low-income household survey revealed). The cost of storage and water treatment and the lack of financial means or *wasta* ("connections") to access alternative water sources in times of scarcity generate access inequalities. Research has demonstrated that effective water prices rise to a level comparable to that paid by the highest users under the progressive tariff structure (cf. fig. left, after Iskandarani, 2001), and surveying revealed that contrary to popular (and official?) belief sharing of water connections is widespread: Only 60% of low-income families report they have their own connection, with up to 5 households sharing in extreme cases - who experience an associated inflation of bills under the increasing block tariff.

The majority of residents in Greater Amman are supplied according to a rotational rationing programme, on average receiving water once or twice per week. LEMA's major contribution to improved service has been to regularise rationing days. Surveys show that customers value this reliability as it allows them to structure their time around the availability of water, but 33% of low-income families questioned wish for an increased duration of their weekly supply.

Water rationing is intimately linked with operational difficulties, as the periodic surging of the network causes a high rate of pipe failures and meter malfunctions. In November 2004, continuous supply was introduced to 26.5% of LEMA's customers, reportedly based on these technical considerations. It is worth noting that the current winter rationing programme did not receive direct government approval, but was

USO and Legal Issues

instead met by silence. The decision was not made public.

Universal service in terms of full network coverage and equal treatment of customers irrespective of social or income status has been accomplished in Greater Amman, even prior to the introduction of PSP. In spite of these achievements, protection of the poor is presently not part of the regulatory process, leaving scope for the evolution of the USO to eliminate present inequalities.

The National Water Strategy setting out long-term strategic goals for the sector recognises the intense population pressure on the country's vulnerable water resources. Nevertheless, the Government of Jordan expresses its commitment to "securing water services at affordable prices and acceptable standards" (MWI, 1997b) and extending services to unserved areas. The policy target consumption level is set at 100 litres per capita per day (lpcd), with reasonable domestic use awarded priority over competing water demand.

PMU as the quasi-regulatory agency seeks to safeguard consumer interests, but at a practical level is mostly concerned with technical issues surrounding the improvement of service provision. Service to the poor and the protection of vulnerable groups could not be ascertained as stated policy goals, and references to social objectives do not appear in PMU's Charter of Operations (MWI and WAJ, 2001).

Social considerations, however, have traditionally played an important role in determining water tariffs.

A lifeline of 20m³/quarter affords an average-sized household in Amman (5.7 members) a modest allowance of 38.9 lpcd at a mere 3.472 JD/quarter ($4.90/quarter). When the World Bank pushed for tariff reform, the Government of Jordan defended the heavy subsidies into the water sector, citing the low ability to pay of the Jordanian consumer (World Bank, 1997).

The table below shows that the cautious approach to cost recovery is more likely to hurt the poor by jeopardizing investment into much-needed network upgrades than by generating direct affordability concerns, though

Above: Household rooftop storage for filling by connection or tanker

targeted assistance would be required for the "poorest of the poor".

The legal situation in Jordan currently leaves the choice of whether to connect to the network to the consumer (though interestingly not in the case of wastewater services), and some large consumers have reportedly made alternative arrangements.

By incorporating minimum storage requirements in the revised Building Code, the Government effectively en-

Below: Storage tank filling; note the high risk of contamination as dust and dead leaves are swept into the tank

		The "poorest of the poor"		The "coping poor"	
Consumption level		lifeline	100 lpcd	lifeline	100 lpcd
Monthly income		70 JD/month		300 JD/month	
% household income devoted to water bills	5.7 persons	1.65	8.08	0.39	1.88
	8 persons	1.65	17.94	0.39	4.19

Share of household income devoted to municipal water services for the "poorest of the poor" and "coping poor" as defined in the 2004 Jordan Human Development Report (Ministry of Planning et al. 2004).

Alternative Service Providers

The persistent insufficiencies in water supplied via the municipal network cause households to augment their supplies from the open private market. This section examines this private water market in Amman, based on a survey of 100 low-income households and a one-day tanker driver survey in June/July 2005.

According to Iskandarani (2001), the proportion of households in Amman choosing to obtain additional water reaches 30%. Amongst the low-income segment, 49% of households surveyed indicated they have used private tankers in the past (three times per summer on average), and 40% have borrowed water from their neighbours during shortages. So-called 'water-stores' selling treated drinking water have also become increasingly popular in recent years; 18% of the sample use them as their main source of drinking water.

According to WAJ figures, 1267 private tankers were registered in Amman Governorate in 2004. 289 of these are owned by industries and hospitals (Darmame 2004). The remainder are owned and operated by individuals rather than companies. Tanker owners explained that water deliveries can be ordered over the phone (mobile) or at well-known tanker meeting points in the city (e.g. 6th Circle, Middle East Circle), where drivers park and wait for customers.

Government (i.e. WAJ) regulations set the selling price for water delivered via private tankers to 2 JD/m^3 (2.82 $/$m^3$) in summer and 1.75 JD/$m^3$ (2.47 $/$m^3$) in winter. Drivers obtain water from privately owned groundwater wells. Wells licensed for the sale of potable water incur a 250 fils/m^3 (0.35 $/$m^3$) extraction charge (tax). In addition, well owners charge drivers a fee in the range of 50-600 fils/m^3 (0.07-0.85 $/$m^3$), with seasonal variations reflecting water demand.

As far as consumer end prices are concerned, private tanker operations currently exist in a regulatory vacuum Drivers are likely to exploit customers' ignorance of existing regulations and the lack of enforcement on the part of WAJ/MWI. There are no defined procedures to monitor prices, and penalties for overcharging do not exist. Water is sold to customers at 2-3.5 JD/m^3 (2.82-4.94 $/$m^3$) (1.5 JD/$m^3$ (2.12 $/$m^3$) in winter), with low-income customers paying the lower price range, but drivers made it very clear that, especially in summer, water is a market commodity. Selling prices of up to 7.5 JD/m^3 (10.58 $/$m^3$) were noted during field observations in summer 2004.

Drivers quoted 2m^3 as the minimum for purchase, but indicated a preference for selling whole tanker loads. Tanker capacities range from 3 – 20m^3, with 6m^3 being the most common. Average delivery sizes varied between East (2-3m^3) and West Amman (6m^3), with poorer customers indicating an average purchase of 3.1m^3 .(within a range of 1 – 6m^3). Some drivers insisted that the entire load must be paid in full, regardless of the delivery size. Only 27.1% of survey respondents using private tankers were able to purchase entire loads. The majority (64.6%) share a load with neighbours, whilst those negotiating a part load purchase were the exception (8.3%).

Without access to formal complaints procedures and stricter price control, poor customers, who are unlikely to afford extensive household storage or are unable to secure top-up supplies from LEMA's tanker fleet of 26, are left most vulnerable - none of the households surveyed had ever received water from a LEMA-operated tanker.

There are further concerns about private tanker operations undermining LEMA's profitability and consequently reducing the government's revenue. In the absence of a legal obligation to connect to the municipal water supply, large consumers use tankers to increase their reliability of supply and exploit the economic advantages of lower water charges and estimated, as opposed to measured, sewerage charges. There are also unconfirmed suspicions

Left: Water delivery in Abdoun, Amman

Right: Tanker refill at well

Customer Involvement

Although stakeholder involvement has been included by the Government of Jordan in the Water Strategy as a principle of good practice, participation is at a premature stage. In the case of government agencies it has barely moved beyond information provision, whilst LEMA customers are being consulted to a previously unheard of extent on a wide range of service-related aspects.

In theory, concerned parties from government and the private sector are to be represented on Water Councils within the water department in each governorate. WAJ law (Article 23(2)) states that *"this is to allow citizens and local authorities to participate in deciding priorities regarding water and wastewater projects and plan for their implementation"*. Certainly in the Municipality of Greater Amman this is not the case as the project management for the Greater Amman Development Strategy stated that sole responsibility for water services rests with MWI, and the municipality's role has been reduced to the provision of other infrastructure services, including rainwater drainage.

PMU have identified the need to promote its role in the wider community and are seeking to increase level of recognition of its activities by stepping up efforts in public relations.

Customer consultation by LEMA in the form of regular surveys, focus group discussions and exit polls at customer service centres, carried out by an independent market research company, are used for routine monitoring of customer expectations and satisfaction. However, as results have been met with disbelief by government officials, these reports largely remain internal. The company prides itself for having built up an image of strength and fairness: In contrast to the 'normal' Jordanian official who shuns the media, LEMA has devised a proactive and transparent approach. Communication strategies include newspaper announcements, radio broadcasts and television appearances by the Directors of LEMA's various departments.

When questioned about poor households, there were no indications that these create any more of a problem or are treated in a different way to wealthier customers. To the contrary, "we don't have a problem with the poor, we have a problem with the rich". Members of staff unanimously indicate that no special efforts are made to address the needs of low-income households, although social responsibilities are part of the company's business philosophy.

In view of gathering customers' views, LEMA pointed out positive experiences made with focus group discussions (FGDs), which were described as "generally very useful tools". However, less is known about suitable approaches towards the poor (presently consultations are not disaggregated by "social class"): "There is a general view that the lower-income people are more difficult to deal with because their educational standards do tend to be lower. Their knowledge and experience of the issues of water are less". In response to this, the Market Research Organisation employed to carry out LEMA's customer consultations declared this a common misconception, explaining that the toughest respondents are wealthier customers, and educational level bears no relevance. Some adjustments need to be made for lower-income customers, especially in the case of women living in more remote areas, who prefer holding FGDs in their homes.

In what appears to be a low-trust society, people tend to rely on their own experiences rather than believing statements made by government agencies. Interviewees rarely mentioned civil society organisations as pressure groups. Instead, parliament and journalists were cited as 'groups' trying to exert pressure. No non-governmental organisations involved in urban poverty alleviation and water supply issues could be identified, but there is a 1,200-member Customer Protection Society of Jordan (CPS), which was also known to both WAJ/PMU and LEMA.

The CPS President described the society's objectives as "satisfying consumer basic needs [and] protecting consumers from monopolies and high prices from some products and services". Regarding the poor, the society concedes that prices are very low, but adequate quantities are not guaranteed.

Cultural attitudes and the local environment were cited as reasons why formal customer representation is unlikely to be established in the short or medium term future. Customer committees in the form currently used in the England & Wales WaterVoice model might be unsuitable. "People are unlikely to trust a selected few to represent the general public's opinion". It was noted that committees would be seen as a welcome opportunity for citizens – but most likely as an opportunity for gaining personal advantages. However, PMU did show an appreciation of the benefits of using participation to make different viewpoints, such as women's rights for instance, heard. PMU affirmed that "bits and pieces" could be appropriate but with respect to the WaterVoice model, it would be its spirit rather than the structure that

Comments on WaterVoice-style customer representation:
"Who are the characters who could fill these positions here?" "People are unlikely to trust a selected few to represent the general public's

Conclusions

The case study shows that high connection rates cannot be the single measure of the achievement of sustainable access to safe drinking water for the poor. Failure to deliver a continuous supply has been established as a root cause of persisting access inequalities, as the system favours wealthy households who can afford large storage facilities and top-up supplies from the private market.

The present situation highlights two major issues pertinent to the "Regulating for the Poor" research:

- The Universal Service Obligation needs to evolve once the primary target of household connections across the city has been achieved.
- Service improvements must be associated with capital investment requirements, a point strongly emphasized by the operator. An economic regulator is best suited to the task of ensuring the financial sustainability of services and driving continuous service improvements on behalf of all customers.

Key regulatory functions, such as tariff setting, appear out of reach of an independent regulator within the foreseeable future. However, an agency with a certain – perceived – level of independence could be formally introduced as a mediator between all stakeholders to promote openness and fairness in an environment in which political and economic uncertainties prevail.

Efforts should be strengthened to increase the legitimacy of regulation, no matter in which form it is envisaged in the future. PMU is advised to act proactively, increasing the information flow between stakeholders, including the public, and thus developing accountability which transcends the institutional hierarchy. There is evidence to suggest that customer consultations, disaggregated by social group, would give a more accurate picture of willingness and ability to pay for water services and service improvements, allowing to take appropriate decisions regarding tariff design and targeting interventions where needed. A survey of 100 households in 10 low-income areas of Amman has revealed discrepancies between official statistics (and opinion) and the situation faced by poor families.

It is further recommended to consider the risk of increasing the size of the unit in terms of staff numbers, and consequently the cost of regulation, beyond a point where past inefficiencies are repeated.

In view of the long-term sustainability of services it is advisable to consider strong enforcement of regulations concerning the private market, including competition which may threaten to undermine the level of subsidy available. There may be a case for a reciprocal USO in which customers would be obliged to join a network in much the same way as providers are obliged to provide adequate services to all consumers. Water storage facilities may be a better target for financial assistance

Large-scale irrigation competes with growing municipal demands for Jordan's scarce water resources. The international dimension is said to justify continuing political involvement in the water sector.

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