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Private Public Partnership in the Water Sector - ESCWA Region

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PRIVATE PUBLIC PARTNERSHIP (PPP) IN THE WATER SECTOR ESCWA REGION

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LEBANESE REPUBLIC
MINISTRY OF ENERGY AND WATER
GENERAL DIRECTORATE OF HYDRAULIC AND ELECTRICAL RESOURCES

Tuesday, 15 November 2005

I- Introduction:

Reforms of the water sector in the developing countries started at the beginning of the 1980, and still under way driven by political expediency and philosophy.

This study meant to highlight the gains and the limitation of recent experiences with the private sector participation in the water sector in developing countries. It aims to draw out valuable lessons from six case studies selected and illustrating a variety of different models of private sector participation, from service and managerial contracts to leases and concessions. These lessons will be useful for the ESCWA countries to consider when planning and implementing current and future project linked to the private sector participation.

Infrastructures in the market economy of several countries in the world has entered a new system of partnership between the private and public sectors. This new form of cooperation has emerged to be a promising way for the water supply and wastewater utilities in order to attain several objectives as:

- To improve the performance of this utility.
- To expand service coverage and raise the quality of service.
- To increase operating efficiency.
- To provide alternative mechanisms of financing investment.
- To reduce the burden on public budgets.

A very complicated path should be adopted in order to attain the aforementioned goals. Experience shows that if it happens to be a success for a given country, it could be a drastic failure for another country. This complicated pattern has several parameters to be applied simultaneously, which are:

- Relation between privatization and Regulation.
- Institutional reforms versus privatization.
- The role of politics in the reform versus regulation.
- Financial set up, managing and allocating risks.
- Assessing competition and regulation.
- Private contracts versus regulation.
- Tariffs design by price capital or rate of returns.
- Poverty and politics of prices.

II. General trends for public private partnership

The design and implementation of efficient, equitable, and sustainable tariff systems remain a high priority and a great challenge for public and privately operated water utilities in developing countries. The cases reviewed in this study indicate that, although progress has been made, rigidities continue to impede the imposition of adequate tariff systems.

Tariff structures under private sector arrangements have followed no uniform trend. Different levels and structure, investment needs and financing sources needs and financing sources, the type of contractual arrangement, the regulatory framework, and socioeconomic and political factors.

II-1. - Regulations

The key factors of regulation process in particular institutional environment are the type of quality and incentives provided. The costs and benefits of regulation must be estimated not on bases of what the ideal institution would produce but on a realistic assessment of actual institutions and governmental effectiveness.

Effective regulation is the cornerstone of sustainable private sector participation and successful regulatory reform will require effective institutional reform as well as stronger public administration.

To enforce regulatory regimes and provide guarantees to investors and consumers that improve the institutional and financial viability of projects in which the private sector is involved. But the creation of regulatory framework does not by itself guarantee effective regulation.

In Theory:

a- Regulation can improve economic efficiency by inducing natural monopolist to produce at a socially optimal level.

b- When the regulatory framework is clear and stable regulatory authorities strive to maintain a balance between conflicting interests of governments, the regulated utilities, and the consumers.

In practice:

a- The balanced situation between public & private sectors is difficult to achieve. One of the dangers of responding to multiple and often opposing interest in that regulatory authorities may amend their decisions too often creating an environment of uncertainty and distrust among investors and consumers.

b- The quality of interventions is a major concern for the regulatory body. Regulators may tend to intervene excessively in the market place and this by interfering with investment decisions and managerial control.

Frequently, regulatory agencies place too much emphasis on punitive threats which are often ineffective and too little on appropriate positive incentives and on enhancing the legitimacy of regulatory process through equitable, just, and transparent policy decisions.

c- The economic cost of regulation in case of a regulatory failure can faster efficiency losses greater than the dead weight monopoly losses it is intended to avoid.

Design of Government regulatory bodies:
Governments must find effective ways to design responsive regulatory policies and to identify the right mix of instruments and incentives to implement them.

Whatever the model of private sector participation adopted regulated companies and regulatory authorities face a steep learning curve in their attempts to define their relationship with each other and ensure an equitable and efficient provision of services.

Regulatory models and institutional arrangements cannot be easily transferred from one country to another. Regulatory systems need to be tailored to suit the specific economic and social distortions and the economies in which they will operate there characteristics institutional endowments, and the effects of regulatory legislation on consumer habits.

Whatever the model of privatizations in service provision that the developing countries will be adapting, major critical regulatory issues need to be addressed and evaluated.

Definition of the roles and objectives of regulatory entities:

- Design of the regulatory entities and of the financial mechanisms that will allows them to fulfill their obligations.
- Design of adequate incentives and regulatory instruments.
- Development of technical expertise.
- Choice of strategies to deal with informational. Systems.
- Enforcement of regulatory policies by institutions with limited means and capabilities.
- Choice of strategies to maintain the independence of the regulatory agencies, to prevent their "capture" by experienced private companies or by political interests.
- Choice of strategies to maintain the legitimacy and openness of the regulatory decision process.

II-2- Tariff System

Tariff increase following the entry of private sector participants is likely to be substantial, especially during the transition from public to private sector provision. There are several reasons why this is so.
First water and waste water systems in developing countries are characterized by low rates of coverage and large and increasing investment needs for expansion and rehabilitation. Second, before the private sector participant is brought in, poor financial practices usually cause water rates to fail to cover operating costs.
Third under the new arrangements with private sector participation, necessary tariff increases can partly be offset by gains in productivity gains alone will be enough to generate the large increase in funding that are needed. In the case of large and inefficient utilities, private sector participation can lead to significant cost reductions, which in turn increase the likelihood that water rates can be reduced to reasonable levels for consumers.

a- Barriers to Implementing Efficient Tariff systems

An efficient tariff system requires that prices reflect the value of the resources and services produced. An efficient system must also be functional, in the sense that it is understandable and perceived as fair, politically feasible, and capable of influencing the behavior of consumers in a predictable way. In only a few cases have local governments or private companies adopted the policies necessary to achieve efficiency in tariff regimes in their water and wastewater sectors.

b- Failure to Link Tariff Regimes to Productivity

In many of the cases reviewed here, tariff regimes are not linked to productivity gains or investment requirements. An interesting issue is how to create appropriate tariff regimes that incorporate profitability and efficiency incentives for private operators and encourage the optimal use of resources by consumers. Once a system has been designed with the right incentives, the issue is how to determine the degree to which the operator has achieved an optimal and feasible cost structure, as well as how these costs are incorporated in the level of tariffs. Finally, if productivity gains are achieved, decisions will have to be made about how to distribute the benefits.

c. - Low Metering Levels

Low metering coverage is another important limitation. A basic principle of economic efficiency is that consumers should pay on the basis of their actual consumption, which implies metering. Promote efficient water use by residential consumers at least in the initial stages of the concession, when pressures for capacity expansion are low. A massive increase in metering coverage could have a negative effect on net revenues, given the difficulty of reducing operating and investment costs in the same proportion as the expected reduction in consumption. The key issue is how to design a revenue-neutral tariff, at least for the transition period. The concessionaire and the regulator are looking into the problem. Meanwhile they have agreed to install a minimum of 80,000 meters (7 percent of Aguas Argentinas water customers) per year.

d. - Distorted Tariff Structures

Tariff structure could be based on cross-subsidies between the hotel, industrial, and residential sectors. Such a regime introduces strong distortions. As a consequence, some hotels are studying the possibility of disconnecting from the system and installing desalinization plants.
This regime reflects a clear conflict of objectives: on the one hand, there is a contractual commitment to provide services to the poor on the other, a distorted tariff structure introduces disincentives for private investment in low-income areas and generates resistance to paying bills in the hotel sector. Tariff adjustments above inflation must be submitted for approval by the regulatory agency.

e. - Lack of Clear Mechanisms for Setting Tariffs

The lack of systematic mechanisms for setting tariffs also limits the implementation of more efficient tariff systems.
The municipal council and the private operator renegotiate a new rate every year through a complex and time-consuming process.

f- The Need for Consistency

Investment programs need to be designed using sensible pricing criteria.
In some cases of private sector participation a tendency has been observed to overestimate the expected revenues from tariff increase that theoretically will serve to finance ambitious investment programs, with out a realistic assessment of the demand response. The introduction of tariff increase combined with expanded metering may dramatically alter consumption patterns. These variations in consumption can have different outcomes: on the other hand, they might reduce the utility's revenues; on the other hand more efficient use of resources diminishes the pressure for investment to expand the network. However when most consumers are unmetered as is usually the case before private sector participation.
estimates of the elasticity of consumption demand are unreliable. In countries facing high inflationary pressures, in which output and real incomes are falling or in which a large proportion of consumers are poor, substantial tariff increase may dramatically affect the financial viability of investment programs.
An important lesson that emerges from these experiences is the need to reconcile in a more realistic way the potential revenues from tariffs with investment plans. Various studies indicate that the income elasticity of water consumption can range between 0.1 and 0.5. These elasticities are higher when the water bill represents a large share of total monthly household income.
Price elasticities are on the order of -0.3 to -0.6 for residential consumers.
Firms can raise from tariff increases. These limits vary according to the circumstances of each country or city, but they need to be reflected in the design of realistic investment plans.

g- The Importance of Subsidies and Additional Sources of Funds

When additional funds for investment are required beyond the limits imposed on revenues by structural constraints, the needed financial resources must come from sources other than tariffs (for example, government credits, subsidies, and cofinancing schemes). In such cases a coherent, direct subsidy structure is a fundamental tool to ensure the political and financial viability of tariff regimes that accurately reflect the economic value of the resources and services produced. This is especially so when investment programs or expansion of coverage need to be accelerated, when projects include social objectives, and in the case of wastewater treatment projects. The design of innovative financial programs and incentives to promote the required investments remains a major challenge for local and national government, multilateral lending organizations, and the financial sector in general.

h-Lessons

Several lessons can be drawn from these experiences with water pricing:

-Regardless of the model of private sector participation used-and given the existence of highly underpriced services, plus the large capital investment required for expansion and rehabilitation of water and wastewater systems in developing countries-there have been strong upward pressures on tariffs.

-Despite a consensus on the need to promote more efficient tariff structures that give the right signals to investors and consumers alike, strong rigidities slow their application.
Many private companies have inherited or adopted inefficient tariff structures.

-In many cases there has been a tendency to set unrealistic goals, especially during the initial stages of private sector involvement. Investment plans should be more realistic and consistent

with the potential for revenue generation from tariffs. Greater attention should be given to assessing the impact of metering and pricing on consumption patterns.
-Highly distorted, cross-subsidized structures continue t provide disincentives to expand services to the poor. Incentives have to be created for private companies to serve the poor, and these customers must be helped to pay for services through targeted subsidies explicitly included in government budgets.

-Tariff setting following private sector participation continues to be heavily influenced by political factors. Although most private sector arrangements anticipate some mechanisms for tariff adjustment, theses are not always transparent. The lack of clear policies and procedures for tariff adjustment invites external interference. An important lesson is that tariff changes should be transparent, well defined, and, if possible, self-adjusting on the basis of easily explained principles. Guidelines should specify how often tariffs will be adjusted, the process for adjusting them, and the methodology or principles to be used.

Level and quality of services

This paragraph describes the effects of private sector participation on the level and quality of water and wastewater services in the six principal cases. The cases show that private sector participation did lead to improvement in the quantity and quality of service delivery.
The direction of the observed changes is not surprising, for two reasons.
First, as experience elsewhere has shown, in the short term, capital injections and sound technical advice lead to increases in coverage and improvement in water quality even in inefficient public water utilities.
Second, the decision to contract with a private service provider is usually made in response to chronic degradation of existing systems and manifest incapacity of the public operator to overcome severe deficiencies. in Buenos Aires and Cartageana, for example, the public systems were under imminent risk of collapse. This low starting point could magnify the initial effects of any change. What is a welcome surprise is the speed with which private companies have been able to implement these changes. Even more important, however, is understanding how these changes can be consolidated and sustained.

Some conclusions and general trends can be drawn from these six cases:

-Private operators have been able, to a greater or lesser degree, to both expand the quantity and improve the quality of water and wastewater services. The greatest improvements are observed in Buenos Aires and Santago, whereas the Cancun concession shows little progress. Public sector participation in Guinea showed impressive results initially, as a result of significant capital injection from an international Development Association credit, but further gains have been elusive. These differences seem to endorse the view that the magnitude of these gains may depend not on the particular model of private sector participation but on the quality of the incentives perceived by the water companies themselves.

-Many of the initial improvements were achieved by introducing relatively simple management and operating procedures that do not require large investments or sophisticated technologies.
Private firms have shown a remarkable capacity to optimize the operation of existing infrastructure shortly after taking control.

-Private sector participants have given first priority to increasing the flexibility and improving the reliability of water and wastewater systems and to equipment rehabilitation, inspection and mapping of distribution systems, regulation of network pressures, identification of required rehabilitation and other activities to reduce water losses, and implementation of systematic control procedures.

-On the commercial side of the business, immediate improvements include new billing, and collection systems, updating of cadasters, rapid incorporation of users into the commercial system, systematization and decentralization of information, and better consumer service.

II.3. - Financial Aspects

Financing investment in the water and wastewater sector remains a challenge: to meet demand developing countries will need to invest around $60 billion per year, or $1.2 billion every week, during the next ten years. This will mean increasing water supply and sanitation investments from less than 0.4 percent to about 1.0 percent of their combined GDP in the next decade. Most private operators have made on the cases reviewed in this study indicate that, given the current balance of risks,incentives,and rewards, the private sectors is unlikely to invest its own resources in the water and wastewater sector in developing countries. Most private operators have made only minor investments in operational improvements, choosing those with obvious high returns.

In cases involving concessions, where private operators have overall responsibility services, including capital investments, the major source of investment has been cash flow generation and borrowings supported by that cash flow. Private sector participation clearly has produced gains in productive efficiency and generated financial surpluses.

These gains are positive and real. But they will not be sufficient to fund all the sectors Investment needs.

The water and wastewater sector offers fewer competitive options than do other infrastructure sectors. Assets required per dollar of annual revenue are greater in this sector than in telecommunications, transport, or electric power, and these assets amortize over long periods and have limited or no resale value.

Moreover, the financial performance of water and sewage utilities in developing countries is often worse than that of other infrastructure sectors. A recent World Bank study found that cost recovery in the sector is only around 35 percent. Part of the problem is the ambivalent nature of water as both an economic and a social good, which sends a conflicting message. In addition, both the weakness of domestic capital markets and increasing evidence that public policy concerning water utilities remain high on the political agenda even after the private sector enters the picture have led private investors to become more selective in their participation in projects in this sector.

Domestic and foreign credit operations pose special challenges in developing countries.

In practice, lending operations and restricted under current models of private sector participation. First, because neither concessionaires nor operating companies own the assets they are charged with managing, they cannot use those assets as security. This is not an insurmountable obstacle, although it requires finding ways to use the revenues generated from those assets as collateral instead. This mechanism works well if the tariff-setting and adjustment process is predictable and if revenue-pledging arrangements are legally in place.

Second, the private sector participants' equity is usually small relative to investment needs, and in many cases its use is explicitly curtailed.

Access to long term loans requires sophisticated capital markets, financially responsible companies and well structured projects.

The private sector can play a valuable role when these are present. But where capital markets are incipient, as they are in most developing countries, the transition from public financing to long term private financing will take time and ingenuity.

The use of loans guarantees to support private project lenders has met with difficulties in its practical application. World Bank guarantees, for instance, require that countries provide counter guarantees to the Bank. However, many developing countries have decentralized their public sectors, transferring responsibility for the water and wastewater sector to the local level. This has made central governments reluctant to guarantee municipal lending operations

unless a reliable revenue-pledging arrangement can be put in place, which is more the exception than the rule.
The magnitude of the financial challenge and the specific constraints of the water and wastewater sector require the design of coherent, longtermfinancial strategies. The private sector can and should play a decisive role in these strategies. But its role is a limited one and should be managed in a more pragmatic and balanced way, according o the specific challenges, risks, and opportunities.

III. - Summary

Four major conclusions can be drawn from this analysis.

First, unless significant changes are introduced in the system of incentives, risks, and rewards facing the private sector, the bulk of financial resources for the water and wastewater sector in developing countries will come from the cash generated by the utilities themselves and from lending operations leveraged with the resulting cash flow. Cash generation is increasingly being paid for by consumers through tariffs. Thus, the ultimate guarantee to investors and lenders will depend on the effectiveness of politically and socioeconomically sustainable tariff regimes.

Second, investments have in general not proceeded according to expectations. There is a tendency in private sector arrangements to concentrate a large proportion of the investment program during the first phase of the contract. This puts strong pressures on tariff levels at the beginning of the arrangement. Greater coherence should be pursued among investment targets, tariffs, and quality standards.

Third, a coherent strategy for private sector participation in the water and wastewater sector should distinguish between two different approaches. The first of these is appropriate for water and sewerage systems that are already relatively well consolidated, with high coverage levels, particularly in growing and stable economies with developed capital markets and reliable institutions. In these circumstances, private investors should be encouraged to take financial risks and compete for credits in financial markets to guarantee efficient management and operations, expansion, rehabilitation, and system maintenance.
The second approach is recommended for low-income economies with underdeveloped capital markets, low coverage levels, rapid population growth, increasing demand for expansion, and weak institutions. Here the rationale for private investment follows a different story. Private investors will tend to reduce their own risk, funding investment as much as possible out of cash generation. In a well-operated utility in a typical developing country, these resources usually cover operation and maintenance costs and part of capital expenditure but do not cover all investment needs for expansion and wastewater treatment.
Under the latter approach, the public sector may have to maintain a financing role in the water and wastewater sector for some years to come. The principal challenge is to find the right mix between public and private finance. The role of private companies needs to be focused first on developing managerial and operating skills, improving the quality of services, increasing productive efficiency, formulating comprehensive investment plans, introducing accountability, and transforming unviable enterprises into financially viable companies capable of receiving and administering credits and government (or multilateral) funds. In this context, options other than concessions may be more suited to improving service delivery.
The private sector can contribute to reducing- but will not eliminate- the need for government financing and the obligation on governments to develop financial mechanisms, strengthen capital markets, and provide guarantees and subsidies when necessary.

IV- Case Studies:

This paper describes and synthesizes the results of six representative experiences with private sector participation in providing these services in developing countries as well as economies in transition. Its principal objective is to draw recommendation that can be applied to Design and Implement such a project both now and in the future in Lebanon and the MENA region.

The countries:

The countries and cities studied: Argentina (Buenos Aires), Mexico (Cancun), Columbia (Cartagena), Guinea (Conakry), Chili (Santiago), Poland (Gdansk). These countries have vastly different social, political, economic and institutional conditions (Table 1)

Table 1 – Principal features of private sector Arrangements in the six cases

Case	First year of private sector participation	Type of contract	Agency responsible for regulation
Argentina -Buenos Aires	1993	Concession	Autonomous Regulatory Agency
Mexico - Cancun	1994	Concession	Regional Agency
Columbia - Cartagena	1995	Operation & Management	Municipal and National Governments
Guinea - Conakry	1989	Lease	National Agency
Chili - Santiago	1990	Service contract	National Agency
Poland - Gdansk	1992	Lease	Municipality

The six cases shown in table 1, illustrate a variety of different models of private sector participation, from service and managerial contracts starting to leases and concessions.

The reasons for each government to solicit private sector involvement are:

- **Argentina -Buenos Aires**: The federal government entered into a concession agreement as part of an extensive national privatization program undertaken to stabilize the economy.
- **Mexico – Cancun**: The provincial and municipal governments were unable to meet the increasing need for water and sewerage services because of explosive

growth in the tourist industry and population surge. A concession contract has been given to a private company.

- **Columbia – Cartagena**: The municipal water and wastewater company had become identified in the public's mind with chronic inefficiency, political interference and poor service. The national government has made several efforts to restructure the company, but all these efforts failed. The mayor of the city decided to liquidate the company and in 1995 a new company was constituted under joint public-private ownership.
- **Guinea – Conakry**: Water supply was reaching less than 40% of the urban population in 1989. After failing to reform the public water company, the National government entered into a lease arrangement to provide water services for the City of Conakry and 16 other towns.
- **Chili – Santiago**: Public corporations were formed to operate water and sanitation services as autonomous commercial enterprises with the Government as majority shareholder. Service contracts have been relied on extensively, since 1979 and a comprehensive tariff system was developed to replace cross-subsidies with targeted subsidies funded by central government.
- **Poland – Gdansk**: A mix enterprise was formed in 1992, in the context of democratic reforms and decentralization, to meet the need for system expansion as well as the need for better wastewater treatment facilities.

IV-1.- Cases Analysis:

Analysis of these six cases suggests that private sector participation in the water and wastewater sector is likely to result in sharply improved managerial practices and higher operating efficiency. However, it is unrealistic to expect the private sector in the short term to overcome all the inherited institutional and operational efficiencies and to compensate for underinvestment by the public sector. Moreover, the public sector's failure to establish clear regulatory frameworks and to implement adequate tariff regimes and subsidy mechanisms, constituted a clear financial risk management for the sustainability of the private sector arrangements.

Complementary reforms are required especially in the areas of regulations, service pricing and financing.

Overall, private sector participation has led:

- To improve service quality and expand coverage

- Management has been strengthened
- Productive efficiency has improved quickly
- New commercial practices have increased revenues
- Employees have rapidly become more comprehensive towards the public and their complaints
- Water losses have diminished
- Attention to customers has improved significantly.

Many of these successes have resulted from relatively simple management improvements that did not require large investments and sophisticated technologies.

Private firms have shown a remarkable capacity to optimize the operation of existing infrastructure within a short time.

However, several problems have been encountered through the process, as:

- Unfavorable macroeconomic conditions
- Weak regulatory environments
- Political involvements in institutional reforms
- Inadequate incentives can limit any gain in productivity

Moreover, initial gains and benefits, although important and positive, cannot by themselves compensate for the structural problems as:

- Ineffective financial public institutions
- Low productivity
- Low domestic saving rates
- Regressive tax systems
- Extreme poverty and incomes disparities between social classes in a given country.

The cases show also that the achievements cannot be fulfilled if effective institutional transformation and strengthened public administration are not implemented.

The success of reforms depends on:

- Strong political commitment
- Support of supplementary reforms in the three basic areas:
    1. more effective regulatory frameworks

2. realistic and efficient tariff regimes accompanied by direct subsidy mechanisms that increase the prospects for political and financial viability of tariff levels and make it possible to provide quality service to the poor;
3. Development of new financial strategies taking into consideration the specificity of the market economy of each country.

V- Recommendations to be adopted:

The experience from the six case studies testifies that the development of private sector arrangements is not free of risks and difficulties. The principal recommendations that can be drawn from these cases can be summarized as follows:

1. Quantity and Quality of Service Provision

Private sector participation has led to substantial benefits to consumers in terms of expanded coverage and quality of services as well as improvements in productive efficiency.

However, consolidation of these gains in the future will depend heavily on:

- Strong leadership
- Continuous political commitment
- The ability of governments and financial institutions to implement complementary reforms in the fields of water pricing, financing and regulation.

2. Efficient Tariffs Regimes

Most privatized water utilities have inherited or adopted inefficient tariff structures mainly due to:

- Bad initial design in the water resources
- Strong political influences
- Methodology for calculating tariffs should be transparent and objective
- Subsidies for service expansion to the poor.

3- Improving Regulations.

Effective regulation is the cornerstone of sustainable private public sector participation. Experience shows that there are no universally applicable regulatory models or institutional arrangements that can be simply transferred from one country to another.

Successful regulatory reforms will require:

- Effective institutional reform
- Stronger public administration
- Enforce regulatory regimes

- Provide guarantees to investors and consumers that improve the institutional and financial viability of projects in which the private sector is involved.
- The definition of regulatory functions
- The interpretation of contract
- The threat of capture of the regulatory agencies by the regulated companies and political interests.

4- Innovative Financial Strategies.

Experience shows that the private sector is unlikely to invest its own resources in the water sector in the developing countries.

Innovative financial instruments and more effective incentives need to be introduced to induce further private sector involvements.

For medium term in such countries, the bulk of the sector's financial resources will come from cash generation and from lending operations with this cash flow.

The success of future financing of private investment in developing countries will rest on the design of comprehensive long-term financial strategies. The principal challenge is to find the right cooperation of public and private finance and manage the risks through reliable institutions.

VI - Conclusion

The experiences with public-private participation reviewed in this study are few and recent. Their political, socio-economic and other characteristics will not necessarily match those in other countries.

Although analysis of these experiences can offer valuable lessons for other countries and suggest basic principles and guidelines, it may not be possible to apply similar strategies in the same way elsewhere.