

Government of Anguilla

Performance indicators for the
Ministry of Infrastructure,
Communications and Utilities

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1 Introduction

This report has been prepared for the Change Management Team of the Ministry of Infrastructure, Communications and Utilities, as part of the Public Sector Development Programme of the Government of Anguilla. One of the components of KPMG's consultancy assistance to the Ministry of has been to facilitate its development of performance monitoring systems.

Planned changes in organisation and service delivery in the Ministry mean that it needs to develop a performance management and monitoring system to allow it to move from being a primarily operational organisation to one which deliver services primarily through contractors and through statutory bodies and which co-ordinates, monitors and regulates the activities of other bodies.

1.1 Terms of reference

The terms of reference for this assignment were to:

- establish a results-oriented performance monitoring system based on the outputs of the Ministry, its agencies and contractors and other organisations within its areas of responsibility, which will be used to set clear targets and monitor achievement against those targets, through:
 - establishing the key outputs of each functional area of the Ministry and the other organisations involved in implementing Ministry policy, and establishing the relationship between those outputs;
 - agreeing the key efficiency and effectiveness questions to which the Ministry will need answers in order for it to plan, co-ordinate, monitor and regulate infrastructure and the utilities;
 - developing performance indicators which provide the means of answering these questions;
 - develop an action plan for implementing those reporting systems which will need to be in place in order for the Ministry to move to a monitoring and regulatory role.

1.2 Planned changes in the structure of the Ministry of Infrastructure, Communications and Utilities

The Strategic Modelling exercise undertaken in 1996 has enabled the Ministry Change Management Team to conceptualise a Ministry which can shed its operational functions to focus on planning and co-ordinating sustainable infrastructural development and monitoring and regulating communications and utility services for the benefit of Anguilla.

The Mission Statement developed in 1996 is robust. Whilst the Ministry has not hitherto developed strategic objectives for the Ministry as a whole, which could be used as the foundation for planning and for the development of performance indicators, the mandates of the proposed functional areas form a basis for the development and agreement of such objectives.

1.3 Options for divestment

As a part of the Public Sector Development Programme in Anguilla, the Ministry of Infrastructure, Communications and Utilities has developed a vision of a Ministry which plans and co-ordinates sustainable infrastructural development and monitors and regulates communications and utility services. This has led the Ministry Change Management Team to conclude that it should divest the operational and service delivery functions.

Proposals have been put forward for divestment of the following areas:

- roads maintenance: into a private sector company;
- vehicles maintenance: contracting out to small contractors;
- water production: contracting out to a specialist company;
- water distribution: establishment of a statutory corporation;
- airport management: establishment of a statutory corporation or a state owned company;
- port management: merger with the airport into a statutory corporation or a state owned company.

A Public Utilities Commission has also been proposed to undertake utilities regulation, which would include the private sector telecommunications companies and the already privatised electricity company.

In future, therefore, the Ministry of Infrastructure, Communications and Utilities will need to have access to performance information about contractors, statutory organisations and private companies which deliver the services for which the Ministry is responsible. The new role will require a very different approach to management. In particular, day to day access to information about finances, revenue, staff and performance of autonomous bodies in the infrastructure, communications and utilities fields will no longer be available to the Ministry's managers. The Ministry needs to plan now, to ensure that it is going to get the information it needs to allow it to carry out its mission.

In order to co-ordinate, monitor and regulate the performance of other organisations which implement Ministry policy and programmes it will be necessary to:

- focus on tangible outputs which can be measured;
- set clear and attainable objectives and targets for these outputs;
- find ways of measuring the performance of the Ministry and related organisations against these targets.

A review of performance indicators is timely at this stage in the development of the Ministry for the following reasons:

- it is necessary to identify required performance information before developing contracts for service delivery, to enable the requirement to be written into the contract;
- performance information and reporting requirements can similarly be written into legalisation establishing statutory corporations;

- any legislative changes necessary to bring the utilities into line with requirements can be identified;
- performance management systems which may be necessary to provide the required information can be identified before new organisations are set up. Many efficiency indicators require the identification of the costs of an output. Unless financial reporting is based around these key outputs, information will not be readily available. It is more difficult to make significant changes to financial reporting structures once new organisations have been established and once the Ministry itself has restructured.

1.4 Approach to this assignment

In keeping with the participative approach that has been taken to public sector development in Anguilla, all members of the Ministry Change Management Team were involved in developing these performance indicators.

An initial workshop of the Change Management Team reviewed the Ministry mission, developed strategic objectives and reviewed the key outputs of the Ministry and related organisations. Following this meeting output maps were developed and agreed with the relevant senior managers. A second workshop then assessed the key performance questions to which the Ministry would need answers from its partner organisations. These questions were developed into performance indicators in a series of meetings with members of the Change Management Team focusing on their respective professional areas.

The performance indicators were then reviewed by the entire Change Management Team. This report therefore puts forward the consensus view of the Ministry of Infrastructure, Communications and Utilities.

1.5 Structure of this report

After this brief introduction, our report is set out as follows:

- section two sets out the mission, strategic objectives and key outputs of the Ministry of Infrastructure, Communications and Utilities;
- section three raises some issues relating to performance indicators at a strategic level;
- section four describes the strategic performance indicators that have been agreed for the Infrastructure Department of the new Ministry;
- section five describes the strategic performance indicators that have been agreed for the Public Utilities;
- section six describes the strategic performance indicators that have been agreed for the airport and port;
- section seven discusses the implications of the development of performance indicators for the Ministry of Infrastructure, Communications and Utilities;
- section eight sets out the action plan which has been developed by Ministry Change Management Team in order to enable the Ministry to obtain the information on performance it needs in order for it to undertake its monitoring and regulatory role.

2 Ministry mission, objectives and outputs

2.1 Mission statement

The mission and strategic objectives of the Ministry are the foundation of any performance measurement and management system. The mission statement is a high level statement of what an organisation exists to achieve. The Ministry of Infrastructure, Communications and Utilities' mission statement was agreed as part of the Strategic Modelling exercise of 1996:

The Ministry of Infrastructure, Communications and Utilities is in the business of planning and co-ordinating sustainable infrastructural development and regulating communications and utility services for the benefit of Anguilla.

2.2 Strategic objectives

To measure performance, the Ministry must be specific about its key result areas. The Ministry has already prepared mandates for specific functional areas, but not all proposed Ministry functions are explicitly covered by them.

Strategic objectives can fill this gap. They are high level statements of what has to be achieved by the organisation.

2.3 Agreed strategic objectives for the Ministry of Infrastructure, Communications and Utilities

Regulatory

- to monitor and regulate organisations in the communications and utilities fields to ensure quality delivery at affordable cost to the people of Anguilla;
- to licence and regulate transport services to protect passengers and the general public and to enable safe movement of goods;
- to plan and monitor transport and communications systems to ensure that they develop in a co-ordinated and coherent manner which meets the needs of users;

Infrastructure

- to plan and co-ordinate infrastructural development which, within the resources available, meets the needs of Anguilla;
- to maintain Government's physical assets to agreed standards;

Internal

- to manage the Ministry effectively, through increase of revenue to Government, best use of its human resources and efficient management of finances.

2.4 Key outputs

For each of these strategic objectives, there are a number of key outputs produced by the organisations which will be the operational partners of the restructured Ministry. Because

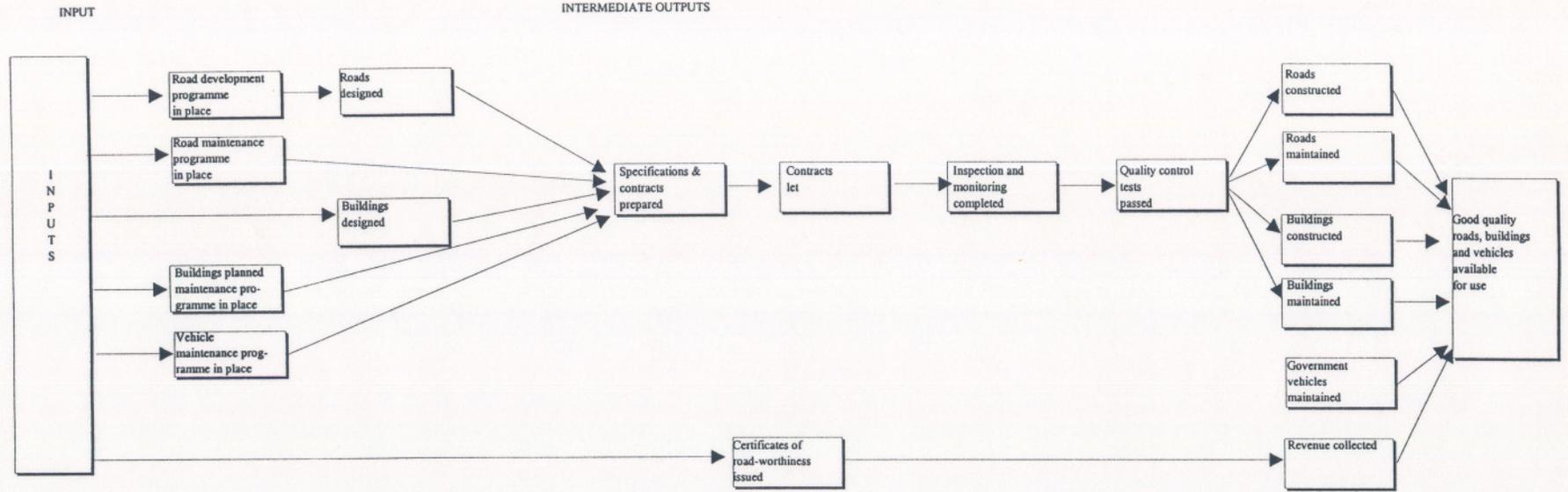
the focus of this assignment was on measuring performance of those ministry responsibilities which are to be divested, output maps have been developed for five separate areas:

- infrastructure development;
- the utilities:
 - water;
 - telecommunications;
 - electricity;
- the airport and sea port.

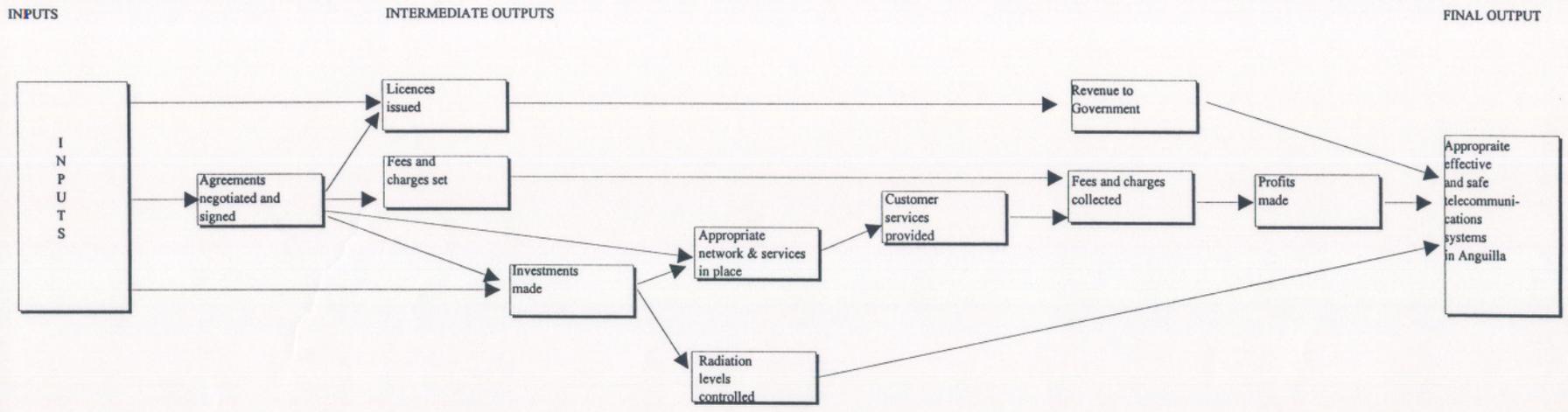
These output maps clarify the linkages and dependencies between the various intermediate outputs which may be produced by the Ministry or by the partner organisation.

The agreed output maps can be found on the following pages.

Infrastructure Department: Output map



Telecommunications: Output map

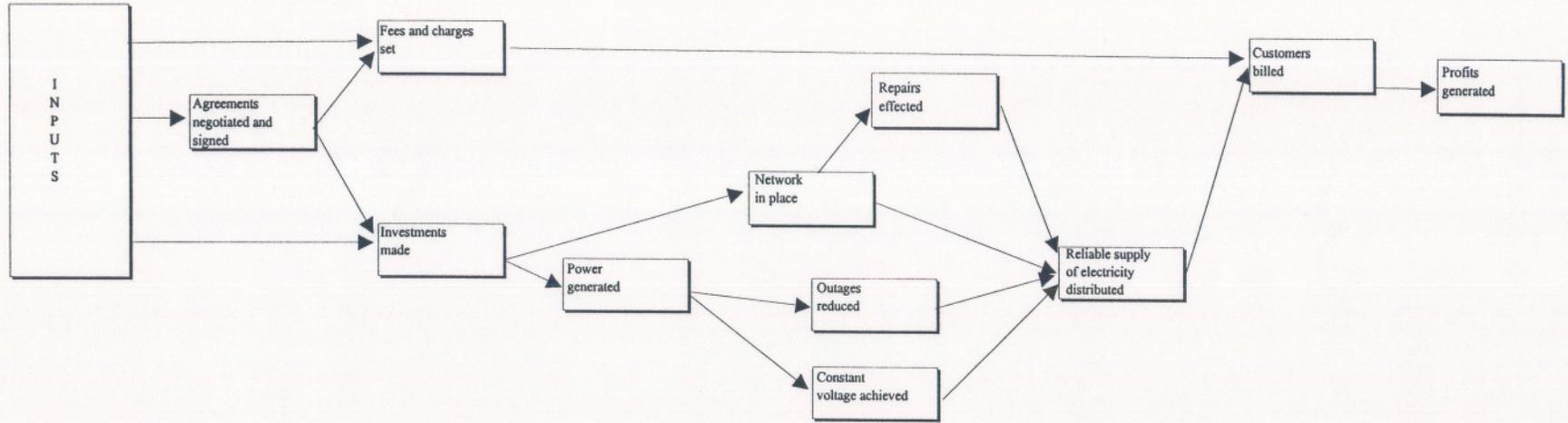


Electricity: Output map

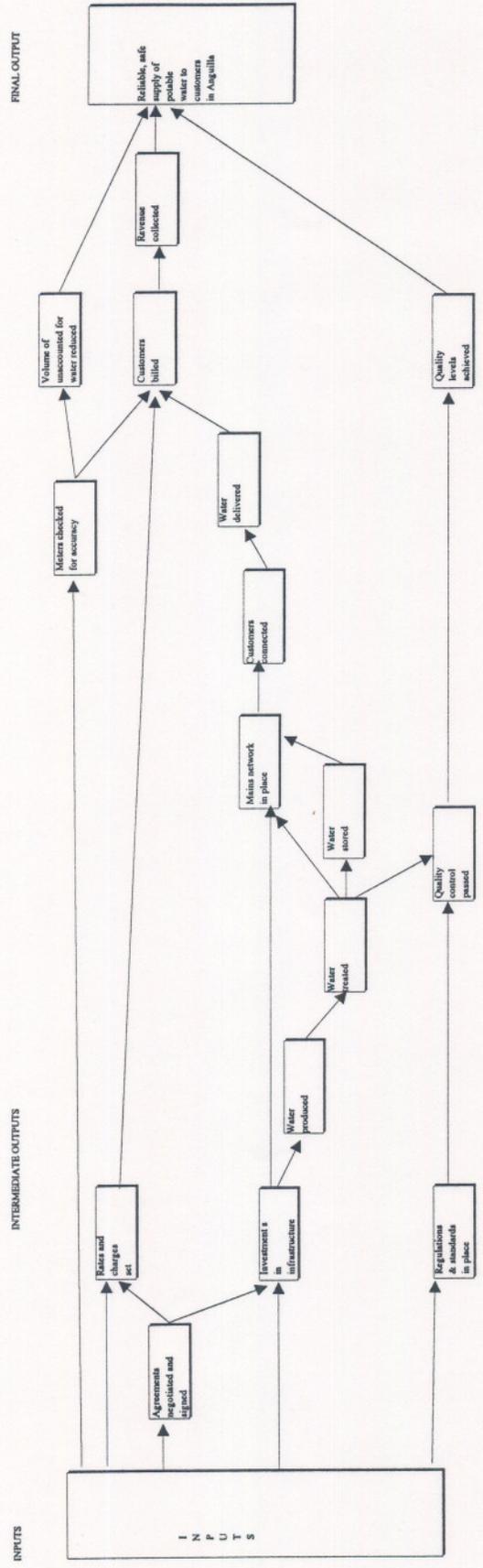
INPUTS

INTERMEDIATE OUTPUTS

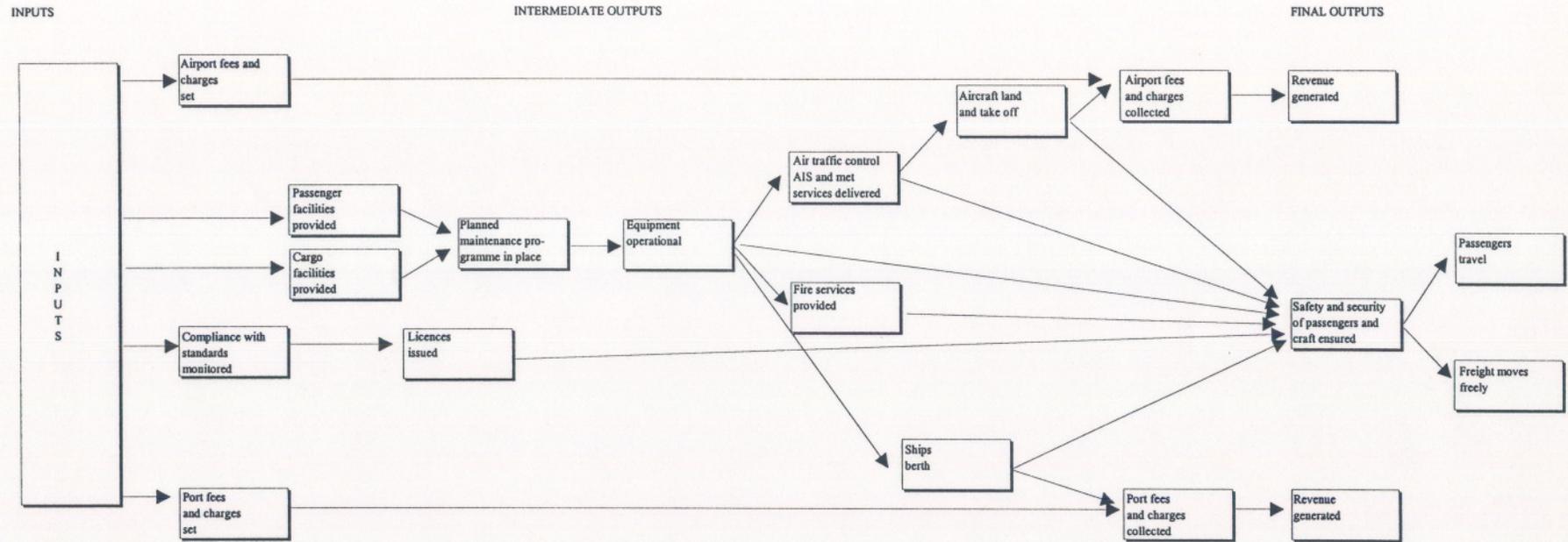
FINAL OUTPUT



Water: Output map



Airport and sea port: Output map



3 Performance indicators

3.1 Introduction

The performance indicators agreed for the Ministry of Infrastructure, Communications and Utilities are set out in the following three sections. These indicators relate to the key outputs identified in section two. A summary of all the indicators can be found in Appendix One. We first discuss some issues relating to performance indicators at a strategic level.

3.2 Efficiency and effectiveness

The majority of the agreed performance indicators assess the effectiveness of delivery of the output: whether the results that the Ministry requires have actually been achieved. For relevant outputs, we have also developed efficiency indicators. Efficiency indicators focus on the inputs necessary to achieve the outputs, in particular to the cost of achieving these outputs.

3.3 The strategic nature of performance indicators

The performance indicators we have developed are a relatively small number of high level indicators which give summary information about the overall efficiency and effectiveness in relation to what the Ministry needs to achieve, in particular through its related organisations. The purpose of these indicators is to answer key questions where managers at the top of the Ministry need to satisfy themselves that specified outputs are being delivered efficiently. The strategic focus of these performance indicators means that the information set out in this report will not necessarily satisfy all the information requirements of operational managers within the Ministry or related operational organisations. In order for them to understand performance within their own areas, and in order to investigate reasons why trends may be developing, more detailed and specific performance information may at times be necessary. Managers in the Ministry need therefore to be prepared to ask questions about any adverse performance information and to explore the underlying issues when necessary, consulting the operational organisations as appropriate.

3.4 Measuring achievement

Performance information is essentially comparative. We cannot look at a set of figures and understand whether the Ministry or related organisations have achieved satisfactory or unsatisfactory results unless there is some benchmark against which to assess them. For the most part, this benchmark is supplied by a target or planned figure, to which the actual achievement can be compared. In other cases, the most valuable comparison is with the previous year, providing information on trends in a particular area.

3.5 Outputs without proposed performance indicators

We are not proposing performance indicators for all outputs. In some cases (for example developing policies, producing plans and programmes and setting fee and charge levels) performance indicators may not be necessary. Appropriate policies, plans and programmes

either exist or they do not, and the Permanent Secretary and the management team are likely to be aware of this. Achievement in other areas can be measured through other outputs to which they contribute. For example, although developing contracts is an important task for professional and technical staff in the Infrastructure Department, satisfactory achievement of the output can be measured through the letting of those contracts. A final group of indicators for which we are not proposing performance indicators are those which are of more interest to operational managers in divested organisation than to the Ministry in its monitoring and regulatory role. For example, whilst the airport management will be very interested in monitoring the satisfactory provision of air traffic control, air information and meteorological services, the key output for the Ministry is rather the safety and security of passengers and craft to which these services contribute. Performance indicators are therefore only recommended to the latter output. More detailed performance indicators will nevertheless need to be developed at operational levels by relevant managers.

4 Performance indicators: infrastructure

4.1 Introduction

The following performance indicators are proposed for the Infrastructure Department of the Ministry of Infrastructure, Communications and Utilities. These will provide information on the efficiency and effectiveness questions to which the Chief Engineer and the Permanent Secretary require answers in order to manage the Ministry and deliver its services to the required standard.

4.2 Roads section

There are three key outputs for the roads section:

- contracts let;
- roads constructed;
- roads maintained.

Ten performance indicators are recommended.

4.2.1 *Contracts let*

Effectiveness

Value of contracts let compared to plan

Percentage of construction projects started compared to plan

The focus here is on construction contracts and the management of the contracts process. Information to answer some of the key questions relating to contracts, for example whether the specifications were accurate, whether the contract was appropriately framed to enable to Ministry to achieve the results it required, and whether an effective contractor was selected will be answered by performance indicators for the output 'roads constructed'.

4.2.2 *Roads constructed*

Effectiveness

Miles completed compared to plan, reported for each quarter

Miles of paved road in Anguilla compared to previous year

Efficiency

For each project completed during the year: $\frac{\text{total project cost}}{\text{estimated project cost}}$

Roads construction is relatively straightforward to measure. International quality standards are laid down, and project management requires constant monitoring of achievement against plan, focusing on both efficiency and effectiveness. This means that only two effectiveness performance indicators are necessary. One focuses on achievements in roads

construction compared to the annual plan, the other relates to the final output: whether the paved road network has been expanded on the island.

4.2.3 **Roads maintained**

Effectiveness

Percentage of planned maintenance outputs achieved

Percentage of pothole filling contracts satisfactorily completed compared to plan

Miles of roads in good condition compared to annual plan and previous year

Percentage of maintenance jobs where quality standards were achieved first time compared to target for the year

Efficiency

Expenditure per mile of pothole filling compared to plan (reported quarterly)

Whilst roads construction is relatively straightforward, more detailed performance monitoring will be necessary for roads maintenance. The Ministry will need to monitor the extent to which it achieves an annual plan for roads maintenance. Potholes are the main problem with the road condition, and constitute the main issue about which Government, politicians, and the general public are most concerned. Measuring achievement in pothole filling is therefore more important than, say, measuring achievements in roadside trimming or drain clearing. As with 'roads constructed', the Ministry will need to be able to point to overall improvement in road condition compared to the previous year. This necessitates carrying out a road condition survey on an annual basis as a part of the development of the annual maintenance plan.

There are few international quality standards for roads maintenance. The Ministry has already concluded that it will need to develop statements of quality standards for key maintenance activities. Once these have been developed, monitoring achievement of these standards should not be difficult.

'Expenditure per mile of road maintained' is not a meaningful indicator. Roadside trimming is relatively low cost, pothole filling is much more expensive. The Ministry has decided that it should focus only on pothole filling costs. The implication of this is that Ministry financial records will need to separate out the different types of outputs from maintenance work in order to simplify the collection of data for pothole filling.

4.3 **Buildings section**

Buildings maintenance and construction work has been contracted out for several years. The budget is centrally held by Treasury, but all contracts are administered by the Ministry of Infrastructure, Communications and Utilities, who respond to customers in other parts of Government. As with the roads section, achievement need only be monitored against three key outputs. Eight performance indicators are recommended

Contracts let

Effectiveness (maintenance)

Average number of days from first contact with Ministry to contractor on site compared to an annual target

Customer response is the key issue to measure. At present, the Ministry expects to have a contractor on site within five working days of the initial contact.

4.3.1 **Buildings constructed**

Effectiveness

Number and value of projects completed in the year against plan

Total number of weeks overrun to completion of projects over the year

Planned number of weeks to project completion

Total number of weeks overrun in building commissioning over the year

Planned number of weeks for building commissioning

Efficiency

For each project completed: Total project cost compared to original estimated project cost.

Although it is important to measure overall achievement compared to the annual plan for building construction, timeliness and quality achieved are equally important measures. Timeliness can be measured in terms of project overrun. For a building construction project, quality can be assessed by the length of time taken for commissioning the building commissioning period (the period between completion and occupation by the client). Overrun in commissioning is always attributable to quality problems.

4.3.2 **Buildings maintained**

Effectiveness

Percentage of planned maintenance programme achieved against an agreed target

Percentage of quality standards achieved first time against target

Efficiency

| | | |
|---------------------------------|-------------|---------------------------------|
| <u>annual cost of contracts</u> | compared to | <u>total original estimates</u> |
| number of contracts let | | number of contracts let |

Much of the buildings maintenance activity is response maintenance that cannot be planned. However, there is a need to establish a more structured planned maintenance programme for Government buildings. Whilst unexpected demands will always mean that only part of the planned maintenance programme will be achieved, the target percentage will probably be in the region of 70-80%.

The Ministry has decided to establish quality standards for the more common maintenance activities. Once these are in place, it will be straightforward to measure achievement of quality.

4.4 Vehicles section

This section will have two responsibilities:

- examining all vehicles on the island, issuing of certificates of roadworthiness and licensing them;
- managing the contracts for vehicle maintenance across government.

Six performance indicators are recommended for the two key outputs.

4.4.1 Certificates of roadworthiness issued

Effectiveness

Number issued against plan

Efficiency

Unit cost for each certificate of roadworthiness issued compared to annual target

The effectiveness indicator will measure the number of vehicles which are avoiding inspection and licensing. These figures are already kept by the Senior Clerical Officer. However, new license numbers are at present issued by Treasury. This separation of tasks can lead to difficulties in tracking new vehicles. It may be appropriate therefore for the issuing of new licence numbers to be undertaken by the Vehicle Licensing section.

Producing a unit cost for certificates issued will not be difficult, providing the Licensing Unit has a separate subhead when the Ministry's Vote Books are restructured.

4.4.2 Vehicles maintained

Effectiveness

Percentage of Government vehicles that are in working condition and available for use compared to previous year

Percentage of planned maintenance programme achieved

Efficiency

Unit cost for each vehicle in working condition:

Total annual cost of vehicle maintenance and repair contracts compared to previous year
Number of vehicles available for use at end of year

The Vehicle Superintendent will need to establish a planned maintenance programme. However, the amount of response maintenance for vehicles will always be considerable. In addition to measuring achievement against plan, it is useful to assess the condition of the Government vehicles stock on an annual basis. This assessment would naturally occur as a part of the development of the planned maintenance programme.

Repair and maintenance costs vary enormously, and there are a large number of individual contracts every year. This means that any average unit cost of maintenance will hide tremendous variation. The average cost of maintenance and repair per working vehicles is therefore an artificial and arbitrary figure. However, such an indicator will reveal positive

trends when more government vehicles are in working condition (and those that are not have been scrapped) and negative trends when the condition of stock is declining or when too many resources are spent on vehicles that are no longer of working condition.

5 Performance indicators: utilities

5.1 Introduction

The following performance indicators are proposed for the public utilities which will be monitored and regulated by the Ministry of Infrastructure, Communications and Utilities and the proposed Public Utilities Commission. These performance indicators will provide information on the efficiency and effectiveness of the private sector organisation and statutory corporations which deliver services to customers on Anguilla.

5.2 Telecommunications

This sector is dominated by one large company (Cable and Wireless) and an increasing number of small niche companies. Some of the proposed performance indicators are, at present, only relevant to the principal telecommunications operator. However, the majority are relevant to all operators. 11 performance indicators relating to five key outputs are recommended.

5.2.1 Revenue to Government

Effectiveness

Revenue compared to previous year
 Number of licences issued

Total licence fee for each organisation compared to previous year
 Annual profits of organisation

On the one hand, the Ministry needs to monitor its own licensing activities, to ensure that planned numbers and revenue are achieved. Of particular importance is the monitoring of the level of licence fee for each organisation, which is meant to be related to the profits of each organisation.

5.2.2 Investment made

Effectiveness

Value of investment made compared to plan and to previous year

It is important with all utilities to ensure that adequate investment is made to maintain and improve services and infrastructure. There is a particular issue relating to investment in telecommunications. The terms of the present contract with Cable and Wireless, which allow the company to claim compensation for assets if the contract is not renewed, may make it attractive for the company to over-invest in assets towards the end of the contract. Such over-investment, requiring high levels of compensation, might encourage the Government of Anguilla to renew the contract. It is therefore vital to monitor the actual value of investment made over the life of the contract.

5.2.3 *Customers provided with services*

Effectiveness

Increase in number of customers connected compared to previous year
 Asset value of the organisation

Average time to process applications for connection compared to target

Average time to respond to faults compared to agreed target

Average number of reported faults per connection compared to previous year

The level of services provided to customers is a key performance indicator for any regulatory body. A number of different indicators are proposed here. The first indicator relates to the value of investment in the organisation: to what extent is investment providing appropriate services and encouraging customers to connect and use the system? Public interest is particularly high in connection times and response to faults and the other indicators relate to this area.

5.2.4 *Radiation levels controlled*

Effectiveness

Number of checks per licensed organisation carried out compared to plan

Percentage of checks indicating radiation levels meet international standards

These safety indicators are important for any broadcasting or telecommunications organisation. The Ministry will require details of checks planned and the results of those carried out.

5.2.5 *Profits generated*

Effectiveness

Profits generated compared to annual plan and to previous year

Profits generated compared to previous year

Number of customer connections

Excessive profits of telecommunications companies concern many governments. In addition to monitoring profits in relation to licence fee levels, the overall trends in profits and the relationship between profits and customer numbers need careful monitoring.

5.3 **Electricity**

Electricity production and distribution was privatised several years ago, but the levels of investment and shortcomings in the infrastructure continue to give concern to government. The legislative and contractual basis for provision of performance information to Government needs clarification, although Government is a major shareholder in the

privatised company. Many of the performance indicators proposed are very similar to those for telecommunications. The major differences arise with investment in the infrastructure. 14 performance indicators relating to 6 key outputs are recommended.

5.3.1 *Investment made*

Effectiveness

Value of investment made compared to plan and to previous year

Efficiency

Value of investment made compared to previous year
Number of customers connected

These indicators are shared with telecommunications:

- how much has been invested?
- has the investment been in appropriate infrastructure and services which has encouraged more customers to connect to the system?

5.3.2 *Power generated*

Effectiveness

Units sold compared to previous year
 Volume generated

Efficiency

Cost of operations compared to previous year
 Units sold

Total cost of fuel consumption compared to previous year
 Units sold

There are a number of different issues that need to be monitored by the regulator:

- has the utility generated the right amount of electricity? (the ephemeral nature of electricity means that poor planning and overproduction does not give value for money);
- how much has it cost to generate the electricity which customers required?
- how much fuel has been used to generate the electricity? (Not only is fuel the largest component of operating costs, but this indicator can reveal the extent to which the utility has invested in fuel efficient generators).

5.3.3 **Repairs effected**

Effectiveness

Percentage of line losses compared to previous year and target

Average time to process applications for connection compared to target

Average time to respond to faults compared to agreed target

5.3.4 These indicators are broadly the same as for telecommunications organisations.

5.3.5 **Constant voltage achieved**

Effectiveness

Number of times voltage generated is logged with variation more than 9% from 110 volts

Although voltage fluctuations are one of the main concerns of regulators and the general public, this is a very difficult output to measure. It would be possible to measure the number and type of customer complains, However this is not a very accurate indicator of voltage problems, and most customers only complain when problems become particularly serious. However, voltage is also supposed to be logged on a systematic basis as it is generated. The proposed indicator therefore focuses on logged voltage, where the agreed target for variation is 9%.

5.3.6 **Outages reduced**

Effectiveness

Hours of high voltage transformer failure compared to target and to previous year

Hours of low voltage transformer failure compared to target and to previous year

Efficiency

Decrease in hours of transformer failure compared to previous year

Cost of line repair and line maintenance

Outages are easier to measure than voltage fluctuations, both in absolute terms and through an efficiency indicator which relates expenditure on line repair and maintenance to reductions in transformer failure. The effectiveness indicator is best separated out into high and low voltage transformer failure, as there two types of transformer require different investment levels and different maintenance.

5.3.7 **Profits generated**

Effectiveness

Profits generated compared to annual plan and to previous year

Profit per unit of electricity sold compared to previous year

5.4 Water

Water shares many performance indicators with the other two utilities. However, there are three main complicating factors:

- the move to contract out water production to the private sector in 1998;
- the comparatively small numbers of private customers which is the direct result of the poor quality of water currently produced;
- shortcomings in the distribution infrastructure and in metering, which manifest themselves for example in a large percentage of water being lost in distribution.

13 performance indicators are proposed for six key outputs.

5.5 Investment in infrastructure

Effectiveness

Miles of mains network compared to previous year and to plan

Efficiency

Increase in miles of mains network _____ compared to target
 Value of annual investment in network development

These indicators are broadly similar to those for telecommunications and electricity.

5.6 Water produced (reverse osmosis)

Effectiveness

Volume of water produced compared to target

Efficiency

Volume of water produced _____ compared to target and previous year
 Total purchase cost to Water Authority

These are performance indicators for the private sector contractor, not of the proposed Water Authority itself. The Water Authority will need to monitor these indicators on a monthly basis, although, once the contract is established, the regulator may only need to monitor these on a quarterly basis.

5.6.1 Quality levels achieved

Effectiveness

Percentage of water quality tests passed compared to target

5.6.2 **Customers connected**

Effectiveness

Number of customers connected compared to previous year and to plan

Average time taken to connect customers from first contact to completion of connections compared to target

Growth in customer connections can be expected once potable water is produced and distributed through the mains network. However, the Water Authority will have to make considerable marketing efforts for customers to understand the value for money they will obtain in the longer term from using the mains distribution system. One indicator therefore needs to measure the rate at which customers are connecting to the network. Another focuses on the time taken for connections to be made. This second indicator may only be necessary for the first three to five years of the Water Authority's existence.

5.6.3 **Water delivered**

Efficiency

Full cost of operations _____ compared to target and to previous year

Gallons of water billed to customers

The key intermediate output for the Water Authority is to deliver water to its customers. Against this outputs, we propose the main efficiency indicator for the utility: what is the full unit cost of each gallon of water delivered to the customer?

5.6.4 **Volume of unaccounted for water reduced**

Effectiveness

Percentage of produced volume unaccounted for compared to previous year and target

Reduction in gallons unaccounted for _____ compared to previous year

Number of meters replaced

Percentage of meters more than 3% inaccurate

Significant levels of water loss (currently in the region of 50% of water produced) are suffered by the Water Department. Once the major water development programme has been completed for the distribution network, the amount of unaccounted-for water can be expected to reduce. However, it is believed that the main remaining cause of unaccounted-for water is not leakage in distribution but inaccurate metering. For this reason, two of the indicators focus on meters. One relates to the planned programme of replacement of older models. If there is a causal connection between meter problems and water loss, this will be revealed by this performance indicator. This other indicator relates to outputs of the programme of accuracy checks.

5.6.5 *Revenue collected*

Effectiveness

Revenue collected against plan

Revenue collected compared to plan and to previous year
Total cost of operations

It will take time for the Water Authority to move into a position where it can charge customers the full cost of delivering water, and where it can be in a position of making a surplus. In the meantime, two indicators are proposed, which monitor the effectiveness of the billings process, and the contribution to costs that is being made by the customers.

6 Performance indicators: air and sea ports

The proposed airport and sea port authority is a complex organisation. These strategic indicators are designed to assist the Ministry of Infrastructure, Communications and Utilities with its monitoring the efficiency and effectiveness of the Airport and Sea Ports Authority. Much more detailed performance indicators than those proposed here will be necessary at management level within the authority. 16 performance indicators for 9 key outputs are recommended.

6.1.1 Licences issued

Effectiveness

Number issued compared to plan

Percentage refused because of failure to comply with international standards

These indicators relate to the Ministry of Infrastructure, Communications and Utilities, not for the proposed airport and sea port authority, as licensing is one function that will be retained by the Government of Anguilla (and delegated to the Director of Civil Aviation, Antigua).

6.1.2 Passenger facilities provided

Effectiveness

Number of complaints from passengers/other users compared to target

Customer surveys are not an accurate measure of satisfaction with facilities: too many factors beyond the control of the Airport and Sea Ports Authority can affect satisfaction, including delays elsewhere and the delivery of services by other organisations, including Customs, Immigration and operators. The performance indicator proposed relates to formal customer complaints. To supplement this, the Airport and Sea Ports Authority may also consider a customer satisfaction survey from operators rather than from passengers.

6.1.3 Equipment operational

Effectiveness

Number of flights affected by systems breakdowns compared to target

CAA inspections successfully passed compared to previous years

Efficiency

Cost of maintenance of safety related equipment (xray, Nav aids, back up generator etc)
 days all equipment was available for use

This is a key cluster of indicators, particularly for the airport. The Governor is required to take responsibility for monitoring standards of safety at the airport and provision of operational equipment is one key intermediate output in this area. It is, however, a difficult output to measure. It is not appropriate to monitor the days the airport is operational, as

other factors (particularly hurricanes) have a greater impact than malfunctioning equipment. However, as numbers are expected to be small, it may be possible to measure flights affected by systems breakdowns. The implication of the proposed efficiency indicator is that the airport will need to maintain separate financial records for equipment maintenance and for buildings and grounds maintenance. The other key indicator here is the regular UK CAA inspections. As there is usually only one or two in any given year, it is not useful to report using a percentage.

6.1.4 ***Aircraft land and take off***

Effectiveness

Number of aircraft movements delayed more than 30 minutes where the delay is attributable to shortcomings in airport services, compared to previous year and target

Efficiency

Cost of airport operations _____ compared to target

Number of aircraft movements

6.1.5 ***Ships berth***

Efficiency

Cost of port operations _____ compared to target

Number of ship movements

Numbers of aircraft movements, passenger numbers or number of ship movements are, in themselves, not useful performance indicators, as they are affected by many factors external to the airport (in particular by external economic conditions). However, they form an important part of the above three key efficiency indicators for the authority.

6.1.6 ***Safety and security of passengers and craft secured***

Effectiveness

Number of safety and security incidents attributable to shortcomings by airport/port staff compared to previous year and target

Number of safety/security exercises successfully completed compared to plan

CAA inspections successfully passed compared to previous year

These are the key indicators, particularly for the airport. However, safety and security is very difficult to measure as achievement is only demonstrated by the lack of incidents. Nevertheless, safety and security incidents are all logged, and exercises (whether full-scale disaster simulations or fire training exercises) also occur on a regular and planned basis. Because of the central importance of safety and security activities, particularly at the airport, it is extremely difficult to attribute costs to the output 'safety and security of passengers and craft secured'. We therefore do not propose an efficiency indicator for this

output. In its place, we recommend reporting against an efficiency indicator relating to maintenance of safety and security equipment (as set out in section 6.1.3 above).

6.1.7 *Freight moves freely*

Effectiveness

Average time taken for freight to leave port compound from ship berthing in Anguilla

Efficiency

Cost of port operations compared to target
 Tons of freight

This is perhaps the key cluster of indicators for the port. Whilst many of the activities which might cause delays in the movement of freight (for example customs procedures) are outside the port management's direct control, the purpose of the port management is to co-ordinate activities between the different organisations concerned and to improve the flow of freight for customers.

The efficiency indicator means that the authority will need to separate the operating costs of the port from the costs of the airport. This should be straightforward, except for maintenance activities, where a centrally managed maintenance function has been proposed. However, even if salary costs cannot be precisely apportioned for maintenance, all maintenance materials and supplies can readily be apportioned between the airport and port giving an adequately accurate efficiency indicator for port operations.

6.1.8 *Fees and charges collected*

Effectiveness

Total fees and charges collected compared to target (for port and airport)

Percentage of fees and charges over 6 months in arrears compared to target

At present we do not propose an efficiency indicator at a strategic level assessing the cost of collection of fees and charges, although at an operations level this may be an important indicator for the Airport and Sea Ports Authority to assess ways to improve collection rates.

6.1.9 *Surplus generated*

Effectiveness

Surplus/deficit of Authority compared to previous year and plan

7 Implications for the Ministry

7.1 Introduction

The introduction of more effective performance management systems in order to facilitate a move to a regulatory and monitoring role has a number of implications for the Ministry of Infrastructure, Communications and Utilities, and for its related organisations. In this section we briefly discuss some of these implications, many of which will be addressed in the action plan for implementation.

7.2 Planning

Performance information is always comparative, and some of the most frequent performance indicators compare achievements with a planned or target levels. Development of some of these performance indicators has revealed some shortcomings in planning.

Large development projects are planned in detail, but for maintenance activities, planning is less structured. Implementation of performance indicators in the Infrastructure Department requires the development of planned maintenance programmes for roads, buildings and vehicles, which include:

- assessment of the current state of assets;
- development of prioritised programmes of maintenance for the year, which reflect the likely resources available;
- where applicable, targeted monthly programmes, and efficiency targets.

A more explicit output orientation in planning and budgeting is likely to bring these issues into focus.

Regulated and monitored organisations will also need to focus in more detail on their planning. All related organisations will need to inform the Ministry of Infrastructure, Communications and Utilities of planned investment levels for the year, as well as setting a number of customer service targets. Specific plans and targets relating to infrastructure and service levels are also required for each organisation.

7.3 Financial management

As noted in the preceding three sections, development of better performance information can have a significant impact on the collection of financial information. Development of better performance information can have a significant impact on the collection of financial information. In theory it is currently possible to assess the performance of the Ministry against the proposed efficiency indicators. The necessary information can be obtained from Vote Book records. However, current financial and budget systems do not make this an easy task. Public sector financial reporting systems are based on programme and item expenditure, which are not necessarily aligned to key outputs.

For infrastructure areas, the Ministry of Infrastructure, Communications and Utilities will need to separate expenditure on roads maintenance and roads construction, as well as to

ensure that key maintenance activities (such as pothole filling) are identifiable in the records. A separate budget head for the Vehicle Licensing section will be necessary.

Each utility will need to be able to report total costs of fault repairs, as well as some sector-specific cost figures (for example line repair and maintenance for electricity). The airport and sea port authority will need to maintain separate records for the port and airport, as well as producing figures for the maintenance of safety and security equipment.

7.4 **Management information systems**

Performance information is not gathered systematically across the Ministry at present. Even when information is held by individual managers for operational purposes, it is not easy to access that information: performance data are held in small databases, aggregated into larger subheads in Vote Books or can be found in paper reports. In many cases, performance information is not gathered at all. The performance data are not actively used as a management tool. The action plan reflects the need to support the change in the Ministry's role by developing simple management information systems which will enable more effective performance management. In many cases this will include computerisation in the longer term.

Fundamentally, the Ministry needs to make positive decisions at top management levels to ensure that the new role of planning, co-ordinating, monitoring and regulating is effectively implemented. This not only means establishing procedures and systems to ensure that reporting against the performance indicators takes place. It also means equipping managers to use the information for monitoring, planning and resources allocation and encouraging them to do this. Senior managers in the Infrastructure Department will need to be accountable for reporting against these agreed indicators. Two senior managers must take responsibility for the implementation of performance indicators in the organisations external to the Ministry

In the initial stages there will also need to be changes to legislation relating to the utilities, including the establishment of the Public Utilities Commission, as well as modifications to contracts, to ensure that the required data is reported. Once this is done, regular monitoring and reporting procedures will need to be established as well as mechanisms to obtain more in-depth information when the basic performance indicators reveal trends which give the Ministry concern.

8 Action plan for implementation of performance indicators

8.1 Introduction

The following actions have been proposed by the Ministry Change Management Team in order to establish a more effective performance management system. Specific managers in the Ministry have agreed to take responsibility for implementing these actions within the timescales they have proposed and which are set out in the table.

| Action | Evidence of completion | Responsibility | Timescale |
|---|--|---|---|
| Agree timescales for reporting on performance (monthly/quarterly, annually) and agree mechanisms for gathering information | Reporting requirements issued to relevant managers | Permanent Secretary, MICU CTO, Water Engineer, Airport Manager | March 1998 (Infrastr'e) June 1998 (Water) June 1998 (Airport) |
| Carry out road condition survey | Road condition survey completed | CTO, Roads Engineer | Jan 1998 |
| Establish planned maintenance system for vehicles (including vehicle condition survey) | Planned maintenance programme completed | Vehicles Supt | Feb 1998 |
| Restructure finance recording and reporting systems around key outputs to enable performance information to be produced: <ul style="list-style-type: none"> ■ roads maintenance; ■ roads construction ■ vehicle licensing ■ airport and sea ports | New Vote Book structure agreed | Permanent Secretary, MICU Office Manager, Director of Finance | Dec 1997 |
| Agree performance indicators and their provision with telecommunications and electricity companies | Written agreement to report on performance indicators obtained | Permanent Secretary, MICU Technical Officer (Utilities) | Mar 1998 |
| Establish procedures for monitoring and performance analysis of organisations in utilities and communications within the Ministry | Procedures agreed and issued | Permanent Secretary, MICU Technical Officers | Mar 1998 |
| Implement performance management system | Performance information received and acted upon | Permanent Secretary, MICU Technical Officers | Timetable as in first action, full implementation in early 1999 |

Appendix one

Summary of performance indicators

| Output | Effectiveness indicators | Efficiency indicators |
|----------------------------------|--|---|
| Infrastructure: Roads | | |
| Contracts let | Value of contracts let compared to plan | |
| | Percentage of construction projects started compared to plan | |
| Roads constructed | Miles completed compared to plan | <u>total project cost</u> estimated project cost |
| | Miles of paved road compared to previous year | |
| Roads maintained | Percentage of planned maintenance activities achieved | Expenditure per mile of potholes filled compared to plan |
| | Percentage of pothole filling contracts satisfactorily completed compared to plan | |
| | Condition of road network compared to previous year | |
| | Percentage of maintenance jobs where quality standards were achieved first time compared to target for the year | |
| Infrastructure: Buildings | | |
| Contracts let | Average number of days from first contact with Ministry to contractor on site compared to an annual target | |
| | | |
| Buildings constructed | Number of projects completed in the year against plan | For each project: total project cost compared to original estimated project cost. |
| | <u>Total number of weeks overrun over the year</u> Planned number of weeks to project completion | |
| | <u>Total number of weeks overrun in building commissioning</u> Planned number of weeks for building commissioning | |

| Output | Effectiveness indicators | Efficiency indicators |
|------------------------------------|---|---|
| Radiation levels controlled | Number of checks per licensed organisation carried out compared to plan | |
| | Percentage of checks indicating radiation levels meet international standards | |
| Profits generated | Profits generated compared to plan and to previous year | |
| | Profits generated _____ compared to previous year Number of customer connections | |
| Utilities: Electricity | | |
| Investment made | Value of investment made compared to plan and to previous year | <u>Value of investment made</u> compared to previous year Number of customers connected |
| Power generated | <u>Units sold</u> _____ compared to previous year Volume generated | <u>Cost of operations</u> _____ compared to previous year Units sold |
| | | <u>Total cost of fuel consumption</u> compared to previous year Units sold |
| Repairs effected | Percentage of line losses compared to previous year and target | |
| | Average time to process applications for connection compared to target | |
| | Average time to respond to faults compared to target | |
| Constant voltage achieved | Number of times voltage generated is logged with variation more than 9% from 110 volts compared to target | |
| Outages reduced | Hours of high voltage transformer failure compared to target and to previous year | <u>Decrease in transformer failure hours</u> Cost of line repair and line maintenance compared to previous year |
| | Hours of low voltage transformer failure compared to target and to previous year | |

| Output | Effectiveness indicators | Efficiency indicators |
|--|--|---|
| Profits generated | Profits generated compared to annual plan and to previous year | |
| | <u>Profits generated</u> compared to previous year Units sold | |
| Utilities: Water | | |
| Investment in infrastructure | Miles of mains network compared to previous year | <u>Increase in miles of mains network</u> compared to target Value of annual investment in network |
| Water produced (reverse osmosis) | Volume of water produced compared to target | <u>Volume of water produced</u> Total purchase cost to utility compared to target and previous year |
| Quality levels achieved | Percentage of water quality tests passed compared to target | |
| Customers connected | Number of customers connected compared to previous year | |
| | Average time taken to connect customers from first contact to completion of connections compared to target | |
| Water delivered | | <u>Volume of water delivered to customers</u> Full cost of operations compared to target and to previous year |
| Volume of unaccounted for water reduced | Percentage of produced volume unaccounted for compared to previous year and target | |
| | <u>Reduction in gallons unaccounted for</u> compared to previous year Number of meters replaced | |
| | Percentage of meters more than 3% inaccurate | |

| Output | Effectiveness indicators | Efficiency indicators |
|--|---|--|
| Revenue collected | Revenue collected against plan | |
| | <u>Revenue collected</u> compared to plan and to previous year Total cost of operations | |
| Airport and sea ports | | |
| Licences issued | Number issued compared to plan | |
| | Percentage refused because of failure to comply with international standards compared to previous year | |
| Passenger facilities provided | Number of complaints from passengers/other users compared to target | |
| Equipment operational | Number of flights affected by systems breakdowns compared to target | <u>Cost of maintenance of safety related equipment</u> days airport was operational compared to target |
| | CAA inspections successfully passed compared to previous years | |
| Aircraft land and take off | Number of aircraft movements delayed more than 30 minutes where the delay is attributable to shortcomings in airport services, compared to previous year and target | <u>Cost of airport operations</u> _____ compared to target Number of aircraft movements |
| Ships berth | | <u>Cost of port operations</u> _____ compared to target Number of ship movements |
| Safety and security of passengers and craft secured | Number of safety and security incidents attributable to shortcomings by airport/port staff compared to target | |
| | Number of safety/security exercises successfully completed compared to plan | |
| | CAA inspections successfully passed compared to previous year | |

| Output | Effectiveness indicators | Efficiency indicators |
|-----------------------------------|--|--|
| | | |
| Freight moves freely | Average time taken for freight to leave port from ship berthing compared to target | <u>Cost of port operations</u> compared to target Tons of freight |
| Fees and charges collected | Total collected compared to target (for port and airport) | |
| | Percentage of fees and charges over 6 months in arrears compared to target | |
| Surplus generated | Surplus/deficit of Authority compared to previous year and plan | |