

CSIR's advocacy and support of infrastructure asset management

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ABSTRACT

That increasing attention is being paid to infrastructure asset management in South Africa owes something to the work of the CSIR in discovering and documenting the state of infrastructure, and in leading specific aspects of the process of improvement of policy and practice in the public sector. The CSIR has been involved in asset management particularly for roads, public sector buildings and water services.

INTRODUCTION

A prime example of the CSIR's track record in addressing the needs of service delivery has been its assistance with and influence on planning, operating and maintaining services infrastructure. This involvement has been right from Cabinet level through national strategies, to provincial and local public levels, and has included a wide range of contribution types, from policy to technology.

CSIR ACTIVITY IN SEVERAL SECTORS

Over the years, the CSIR has undertaken many studies of the state of infrastructure and the state of its management. At times this work has related to a specific sector (e.g. bridges), and at other times it has been more broad ranging. Especially in more recent years, the CSIR has actively sought to draw attention to the state of infrastructure. It has done this by means that include undertaking surveys and publishing the results, while lobbying government departments and professional bodies, all in the cause of better informing the decisions on infrastructure development and maintenance.

The CSIR has long been involved in immovable and infrastructure asset management (IAM) policies and technologies. Initially this involvement was only in respect of roads infrastructure. Considerable work has since been undertaken in the area of immovable asset management focusing on public sector buildings. More recently, water services infrastructure has also come to the fore.

- During the 1970s, the CSIR was the pioneer of pavement and road management systems in South Africa. The organisation then became involved in the development of heavy vehicle overload control strategies, and also the development of bridge management systems
- From 2001 the CSIR accumulated evidence of the need for the management of water services infrastructure, and began to lobby for broad-based national strategies in this respect. Since then, the CSIR has partnered with the Department of Water Affairs and Forestry (DWAF) in the process of formulating a national water services IAM strategy
- The CSIR, working together with a number of national and provincial departments, has developed approaches to assist government to assess the degree to which public buildings (e.g. hospitals and clinics) are 'fit for purpose' and 'fit for service'. Providing an accurate record of the extent and profile of the estate, standards and condition-based backlogs enables strategic service and infrastructure planning, capital and maintenance budgeting, and maintenance planning
- During 2006, the CSIR assisted national government to draw up the National Infrastructure Maintenance Strategy, since approved by Cabinet. This coordinated programme of actions is an essential part of government's vision of delivering infrastructure services to all. It is an umbrella strategy, in terms of which each national department responsible for a sector of infrastructure (e.g. DWAF for water resources and water services infrastructure) is drawing up a sector-specific IAM strategy that will reflect the needs of its sector
- The CSIR is playing a role in a number of other national IAM initiatives, among them: supporting documentation for the implementation of the Government Immovable Asset Management Act (GIAMA), the design of a valuation model for use with the implementation of GIAMA, and National Treasury's measures to increase provincial and local government accountability for assets.

EXAMPLES

Strategic planning is that key phase in the life cycle of infrastructure assets where decisions are made that have the greatest impact both on service delivery as well as on short-term capital expenditure and long-term operating costs. To illustrate this, **Figure 1** shows the relationship between health service delivery and infrastructure. It also shows that buildings and other facilities are a key resource that needs to be managed alongside staff, equipment and drugs. However, this role is often not seen

by health planners or works departments as integral to health service planning and management, resulting in a dislocation between service planning and facility provision. The development of decision-support systems and skills programmes by the CSIR has been addressing this area of need.

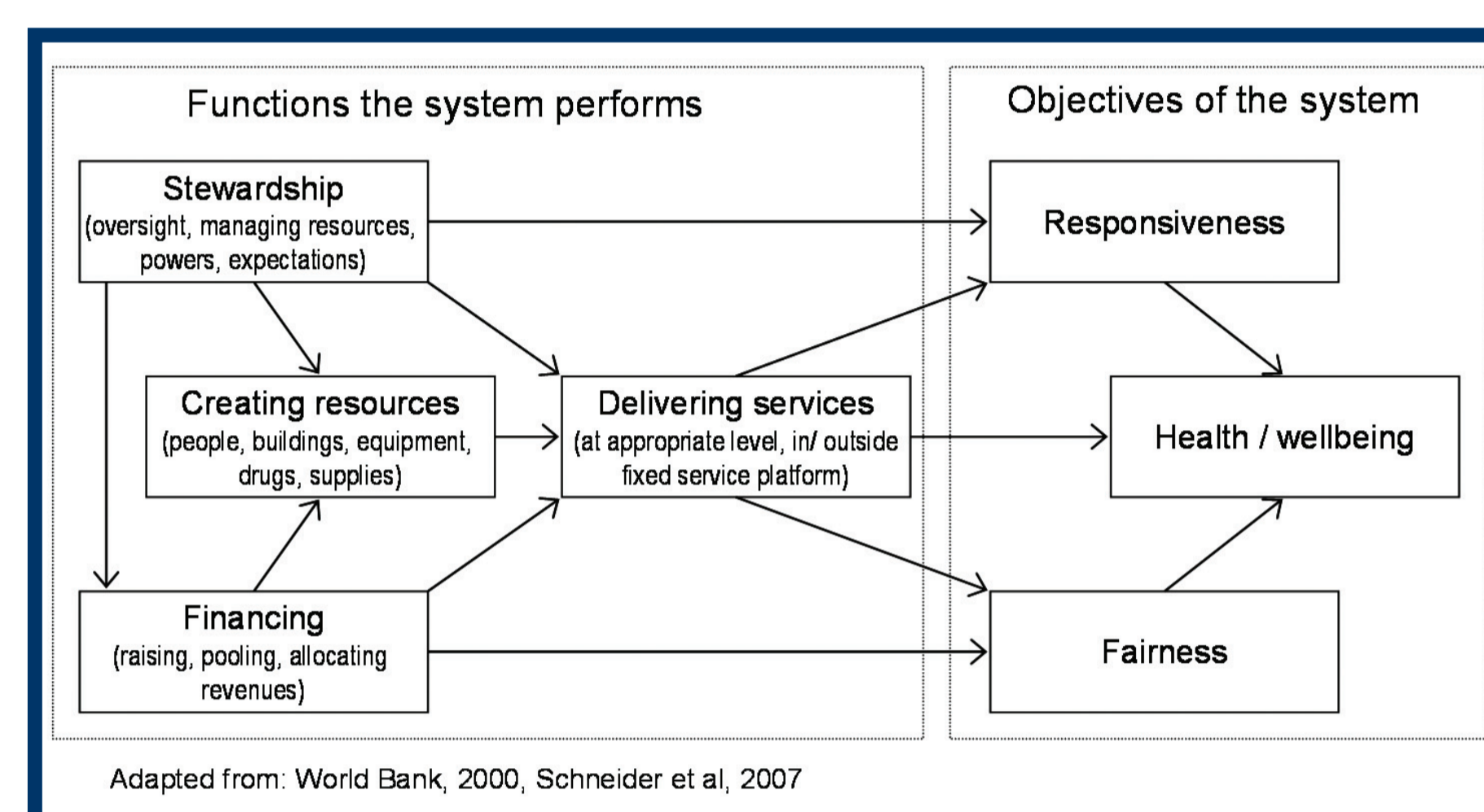


Figure 1: Health System Performance Framework

Evolution of the **Bridge Management System (BMS)** may serve as another prime example of the CSIR's contribution to IAM. Bridges and other road structures are key elements in any road network. Maintenance costs may increase substantially as serviceability levels of structures decline. Effective management and proper maintenance of these structures are therefore essential.

The BMS developed by the CSIR has during the past 10 years been adopted by many road authorities, including the Namibia Roads Authority, Mpumalanga Department of Roads and Transport, and Johannesburg Roads Agency. Indeed, at least 60% of all bridge structures of significant size in South Africa are now monitored through a BMS, and most of these BMSs have been derived from the CSIR work. In contrast, 15 years ago probably less than 10% were monitored through a BMS.

As is the case with most IAM systems, the BMS consists of a number of inter-related modules linked together as illustrated in **Figure 2**. In many cases, the BMS database is integrated with the road authority's integrated road management database.

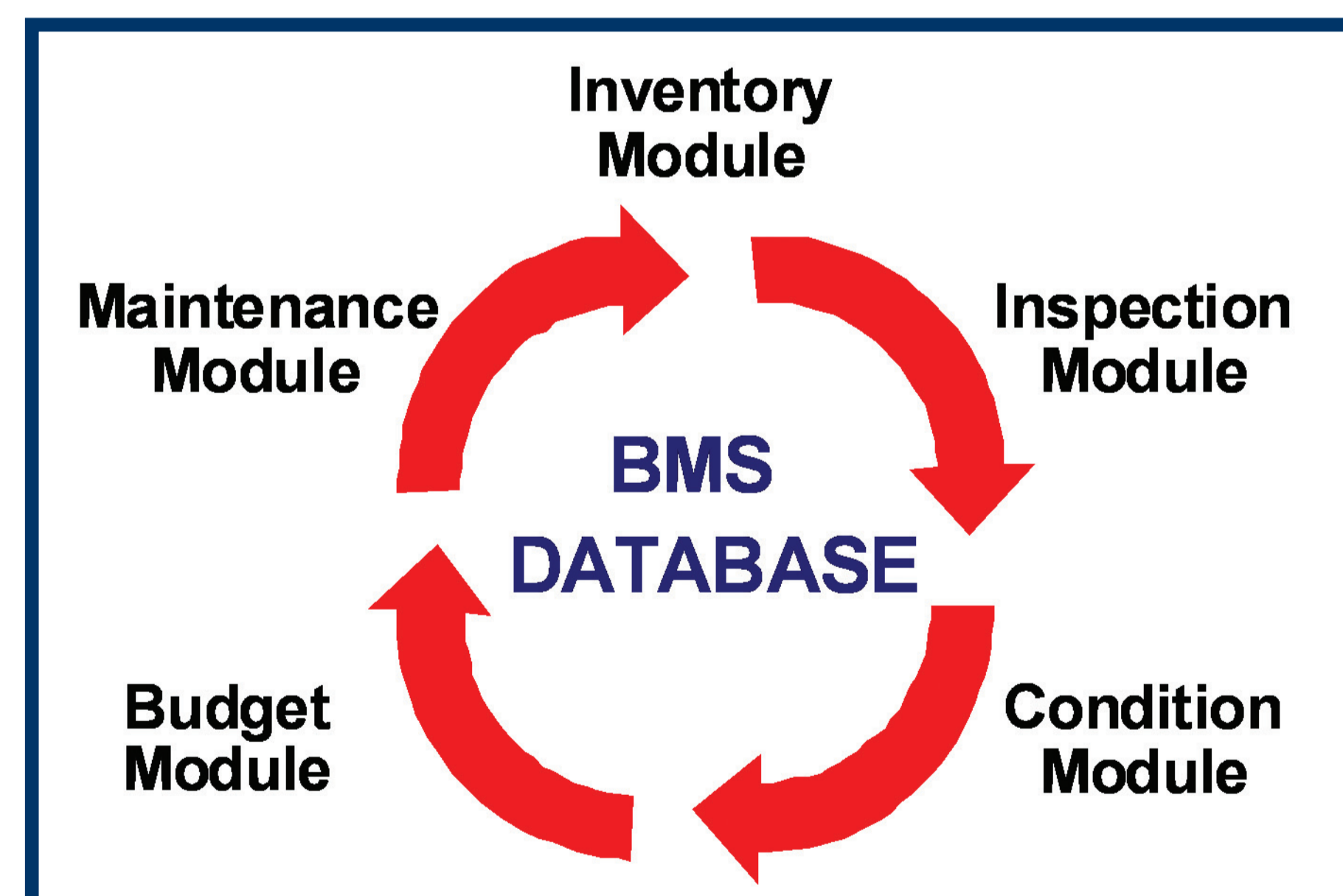


Figure 2: Modules in the BMS

CONCLUSION

Simultaneous infrastructure investment and IAM will not only improve infrastructure performance and underpin services sustainability, but will also contribute significantly towards economic growth and add long-term jobs. The IAM sector forms an integral part of South Africa's total construction delivery capability. Its activities are ongoing and substantially local in nature. Rapid growth of the sector, with its inherent labour intensity, will stimulate sustained job creation, skills development, small enterprise development and broad-based black economic empowerment.

That increasing attention is being paid in South Africa to IAM is timely, and owes something to the work of the CSIR in discovering and documenting the state of infrastructure, and in leading specific aspects of the process of improvement of IAM policy and practice in the public sector.

The CSIR has over many years played a significant role in discovering and documenting the state of infrastructure, and in leading specific aspects of the process of improving infrastructure asset management policy and practice in the public sector.