



MODULE 0: Capability Road Map - Enhancing Information Management Capacity

Building capacity to implement natural
resources information management sys-
tems.

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MODULE 0

0 Capability road map – enhancing information management capacity

There is a wide variety of data and information management capacity across various NRM groups throughout Australia which relates to their size, complexity, location, funding, individual and organisational capacity, and time in existence.

Within the context of the need for ongoing improvements in the capacity of NRM regional bodies for managing data and information, it is important to consider a spectrum of information management capabilities. This can be viewed as part of a road map scenario giving consideration to where each NRM group is currently positioned and where they would like to be in the short, medium, and longer term.

The concept of capability spectrums is well established in the information technology industry and within quality management and allied disciplines across all industry sectors.

It is useful to consider the application of the capability-raising concepts to regional NRM groups, as the methodologies for capability raising do not consider current capability as a problem, but merely a starting point for improvement.

The following capability model (Table 0–1)—based on a simple five-stage maturity model as commonly used by the information technology industry—is presented for consideration. The model allows all NRM groups, regardless of their current capabilities, to consider what is needed to improve their capacity, and subsequently develop an action plan to move forward on the capability spectrum.

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Table 0–1 An indicative capability framework for spatial information management within NRM regional bodies

Level	Name	Description
1	Individual capabilities	Individual staff members within the NRM regional group are developing one or two projects or a business process.
2	Managed individual capability	The projects of individuals are recognised by the NRM regional group and are being managed, with standards in place. A linkage exists with some business processes and procedures. Training resources are allocated, responsibilities have been assigned and evaluations are taking place regularly.
3	Organisational capability	All NRM group business processes and projects are defined and managed using formal program management procedures. Linkage of all business processes to defined user needs exists. Internal benchmarking is occurring and compares data and information management with other business activities.
4	Quantitatively managed organisation capability	Quantified measures of process efficiency are occurring across the NRM region. Data and information management process, standards, training and support are measured quantitatively.
5	Optimising	There is a continuous improvement process based on quantified measures of process efficiency and range of management processes to constantly improve measured performance.

It is a useful exercise to consider where your NRM regional group is placed on this capability spectrum and where you intend to go (and how). Specifically, Modules 1 to 11 of this Toolkit are designed to support you in that journey. For some regional groups, raising capability by one or two levels may be sufficient. For others, a strategic plan for level improvement progressing towards Level 5 may be more appropriate. Regardless, the focus should be on moving forward, either through the development of shared spatial information system services with other NRM regions/organisations, or through your own spatial information system implementation. A module-by-module road map for increasing capability is included at Table 0–2.

Table 0–2 A capability raising road map for spatial information management in NRM regional bodies

#	Module	Level 1 › 2	Level 2 › 3	Level 3 › 4	Level 4 › 5
1	Information management and the sustainable development of natural resources – an introduction to information management systems	Develop spatial information management plan including resource needs (people, funds and equipment), business drivers and governance	Comprehensive organisation-wide information management plan linked to business process analysis and underpinned by internal benchmarking	Development of formal measures demonstrating contribution of spatial info. to business process efficiency, including external benchmarking	Internal and external benchmarking drives continuous improvement process, including appropriate governance models to rapidly enact process improvements
2	Data management principles	Individual people or units have documented data management processes, policies and procedures	Organisation-wide data management processes, policies and procedures in place	Business process review for ensuring compliance with data management processes, policies and procedures	Development of metrics for data management compliance, including continuous external benchmarking
3	Interpretation and visualisation of data – an introduction to spatial information systems	Understanding of spatial information systems by key staff members	Organisational understanding of spatial information systems	Cost benefit of spatial information systems analysed and recognised	Regular reviews of understanding, implementation and use of spatial information systems

#	Module	Level 1 › 2	Level 2 › 3	Level 3 › 4	Level 4 › 5
4	Spatial data priorities, standards and compliance	Individual people or departments have documented spatial data mgt standards, processes, policies and procedures	Organisation-wide spatial data management standards, processes, policies and procedures	Business process review for ensuring compliance with spatial data management standards, processes, policies and procedures	Development of metrics for spatial data management standards and compliance, including continuous external benchmarking
5	Spatial data discovery and access	Individual understanding of spatial data clearing houses and peer support networks	Formal spatial data access and use arrangements within and between regional bodies and other organisations; organisation mandate for peer support	Development of feedback mechanisms to ensure spatial data quality and access align with business drivers across regional bodies	Continuous effort for improving discovery and access of spatial data by all sections of NRM regional bodies
6	Project management and justification – lessons learnt, pitfalls and best practice procedures	Implement standardised project management, including individual or departmental level business cases	Implement program level organisation-wide project management, including systematic business cases	Analysis of project and program performance in project planning, management and post-project review, including cost benefit analysis of business cases	Comparative benchmarking of project performance between NRM bodies and allied organisations/ sectors
7	Guidelines for selecting spatial information system	System procurement driven by individual or departmental	System procurement fully integrated with business needs and procurement	System audits, user reviews and business alignment assessment;	Quantified internal feedback on system usage and performance regularly

#	Module	Level 1 › 2	Level 2 › 3	Level 3 › 4	Level 4 › 5
	software and hardware	business needs funded, endorsed plan for system procurement and implementation; selection check-lists and criteria followed	decisions undertaken on an organisation-wide basis	user groups providing quantified feedback on systems	compared with other organisations
8	Enhancing capability for using spatial information	The projects of individuals are recognised by the organisation or NRM regional body and are being managed; standards are in place and linkage exists to some business processes and procedures; training resources are allocated, responsibilities assigned and evaluations are taking place	All processes are defined and managed through program management of all projects; linkage of all business processes to defined customer needs exists; internal benchmarking is occurring and compares spatial information management with other business activities	Quantified measures of process efficiency across the organisation or NRM regional body; spatial information management process, standards, training and support are measured quantitatively	Continuous improvement process based on quantified measures of process efficiency and range of management processes to constantly improve measured performance
9	Map production guidelines	Unit or departmental documented map production guideline(s)	Organisation-wide documented map production guideline(s)	Comparative analysis and alignment of regional map production guideline(s)	Formal processes in place to ensure continuous improvement and change management of map

#	Module	Level 1 › 2	Level 2 › 3	Level 3 › 4	Level 4 › 5
					production guideline(s) generated by quantified regional analysis and user feedback
10	Introduction to GPS and best practice guidelines	Low understanding of GPS principles; GPS procurement driven by individual needs	Understanding of GPS principles; GPS procurement integrated with needs and procurement based on endorsed plan	Good understanding of GPS principles; formal methods for GPS survey and processing; procurement integrated with needs and procurement based on endorsed plan	Benchmarking of performance, with continuous effort for improving
11	Partnerships and working together – the potential for collaboration	Individuals or departments service the spatial information requirements of others	Organisational mandate for collaboration across all functional areas of an NRM group and formalised agreements for working together with other organisations	Performance measures established for internal and external service agreements	Benchmarking of performance measures for service agreements; combined agreements for collaborative spatial information usage

Signposts are included in each module to guide managers in raising their NRM region's capability.