Chap 1 Catchment Standard practice

It is very important that the RCS and the plans that support it adhere to recognised operating procedures and management principles.

Chief among these is the need to help the community to build their capacity to adapt to changed circumstances and to influence the direction that change takes. Catchment standards are built on:

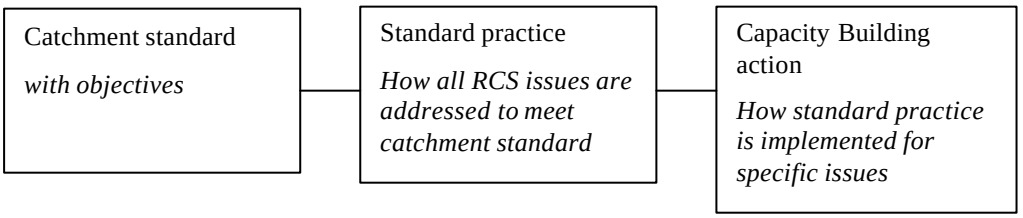
- *developing relationships between communities and organisations,*
- *establishing financial arrangements which are fair between communities and over time and*
- *providing for the security of all stakeholders in a changed working environment*

The environment in which these plans will be implemented is subject to significant change in objectives and resources over time. Recognising and valuing the assets in the catchment, analysing the risks posed to those assets and developing contingency plans is central to preserving the impetus that the plan(s) aim to create. If the RCS is to be implemented and the supporting plans are to be successful then management will have to become more adaptive.

Measuring and evaluating progress is essential for adaptive management. It includes monitoring of changes in the biophysical condition of the catchment as well as evaluating the effectiveness of management arrangements and processes that drive implementation.

Building capacity and Catchment standards

Achieving the goals of the GBDMP can only happen if the community has the determination, inclination and capacity to do so. The GBCMA has adopted a set of "Catchment Standards" with "Standard Practices" for managing all issues. These Standards underpin the actions that build and maintain capacity.



These Standards and objectives include all "Best Practice Standards" as listed in the National Action Plan Agreement (2001).

Building and maintaining capacity comes at a cost. The cost of actions are presented in chapter 6. Table 1 is a summary of the Catchment Standards and the actions that need to be taken in support of them. The MGBIC and UGIC are responsible for overseeing the implementation of all capacity building actions

Table 1 Capacity building actions to achieve catchment standards in the Goulburn Broken Dryland

Catchment Standard	**GBD Standard practice**	**GBDSMP Capacity building action**
1. Partnerships fostered	Involve agency and community stakeholders in key decision making forums	MGBIC and UGIC represent community to oversee implementation of DSMP. Support provided by DST
	Tailor RCS actions for inclusion in community organisations and government agency plans	Local Govt involved in IC policy development and implementation
		DNRE, GMW, DSRD and DOI and Commonwealth involved in DSMP and accommodate views

		and policy and practice
	Include private industry in natural resource management	Facilitate development of markets and management through Vegetation Bank
		Support regional development with appropriate information on opportunities and best practice standards and benchmark information
	Develop targeted awareness campaigns of NRM issues	Implement communication strategy of Community engagement Program
2. Priorities rigorous	Priorities based on the best available scientific, economic and sociological information.	Utilise sub-catchment scale maps and targets
3.	Priorities for works will consider risks and multiple benefits.	Undertake risk assessment on other assets beyond EOV targets
	Integrate resource allocation with community priority setting process	Annual priority settign prosess through UGIC and MGBIC to prepare RMP
	Check feasibility of proposed actions by risk assessment and adapt management processes accordingly	Assess asset and risk and the impact of current management strategies on long term condition
Costs shared fairly	Develop cost sharing arrangements by identifying costs and polluters and benefits and beneficiaries	Review cost sharing arrangements annually
		Continue to monitor quantified and unquantified costs of dryland salinity
	Develop inventory of assets, threatening processes and risks	Compile inventory of dryland assets
		Utilise current known risks and identify information shortfalls to assess threat to assets and probable impact
Focus on large scale	Implement remediation works through commercial agreements	
		Work with Local Government and DOI to address important planning issues
	Link outcomes of DSMP to improved regional condition	Work in partnership with DSRD, DOI and local Government and industry bodies to develop regional capacity for sustainable growth
Cultural Heritage	Aboriginal and non-Aboriginal cultural values will be factored	Include cultural heritage values in risk assessment and

	into all decisions.	evaluation of suitability of management practices
Accountabilities clear	Define roles and responsibilities of all partners	Review operating agreements
		Abide by spirit and intent of operating agreements
	Establish targets and appropriate actions according to National and State guidelines	IC to monitor evaluate and modify works projects and research projects directly related to implementation, including prepare annual works program and have an input into relevant IC works programs
	Produce progress reports that clealry state situation and progress and link to regional State and national targets	Quarterly and annual reporting
		5 yr Review
	Identify duty of care for mad and water managers and recommend changes where legislation lags community expectations	
Adaptive management systems at all scales	LAPs	Reposnsiveness
	Partnership development	Breadth of issues
		On-going analysis of responsibilities and resource allocations
	Develop of BP	

Roles and Responsibilities

The Goulburn Broken CMA has had an Operating Agreement with DNRE for the last three years. The CMA is currently reviewing what Operating and Service Level Agreements are required. This will formalise what has been agreed to in the RCS and Sub-strategies including the GBDSMP.

To date roles and responsibilities have largely been implied and understood through the Implementation Committee and the various working groups that implement the works programs.

Community consultation and involvement-the implementation committees

The community, through the Implementation Committees and their predecessors, has driven the development and implementation of the GBDSMP. Community involvement has been integral to the management of natural resources in the catchment. The involvement of the IC is further enhanced through a number of special task groups set up under the Dryland Support Team to provide recommendations to the full IC and the GBCMA Board on matters arising in the dryland.

Dryland Support Team

The Dryland Support Team, or DST, provides specialist advice to the IC's on issues requiring more detailed consideration or explanation. The DST membership comprises technical staff and community members. Where it is necessary to set up small groups to deal with issues in detail there the special

task group comprises members with technical skills and expertise relevant to the task, as well as community members with responsibility to the IC on the task at hand.

Priority setting and reporting

The IC's are responsible for the priority setting processes that occur both at the strategic and implementation levels: These include the

- 5 year review of strategic directions
- annual review of implementation programs
- preparation of the Regional Business Plan and
- quarterly review of progress

Priority setting is based upon using the best available technical information to describe the extent of the problem and the risk posed to assets and to then supplement this with economic assessment and/or review of cost share implications. The social dimension of priority setting is currently done informally through the IC: this is a component of the analysis that needs to be strengthened.

The IC's ensure that priorities match with the RCS objectives and community aspirations.

Full scale community consultation

In circumstances where there are significant changes in strategic directions, as is the case with this review, the IC's require broader consultative process with the community, including special interest groups and through public forum. This is one way to ensure that the community is aware of the implications of the strategic directions in natural resource management and have the opportunity to amend , accept or reject the proposed changes.

Business management principles

Application of adaptive management to Catchment management

Catchment management is a complex undertaking. It involves " defining the key ecological variables, processes, and inherent characteristics of the system" (Coleman et al). To this is coupled the web of social and economic values which are an integral part of the solution to catchment management issues.

Adaptive management is needed to respond to the inherent variability of social, economic and environmental systems. The goal of adaptive management is to build resilience into the environmental, economic and social systems. Resilience requires that we adapt to change and not seek to maintain stability for its own sake.

Through adaptive management the management system itself is seen as a system with its own uncertainties and unknowns; conditions which become more evident in the face of change. The adaptive approach embraces the uncertainties of system responses and sees management actions as 'experiments' from which learning is a critical product.

Uncertainty does not mean that we do not make decisions, only that we combine the precautionary principle with the need to make decisions and move forward. We cannot hope to understand all the components of the system, or how they link. As a result there will always be failures in management as new, unforseen problems arise. An adaptive management culture is one that accepts there will be failure as a normal part of the operating process and uses that constructively to develop better, more resilient management systems. For this reason the reliance on on-going and comprehensive evaluation of progress and management performance coupled to risk assessments is essential.

The delivery of natural resource programs in the dryland will be continue to be rooted in sound business management principles. These include risk management, contingency planning, evaluation and monitoring, and review.

Risk management

The Goulburn Broken Catchment Management Authority has put in place a strategy that will ensure appropriate management of risks. Effective risk management depends on a sound knowledge of the assets at risk, along with a clear understanding of stakeholder expectations.

The Goulburn Broken CMA, in conjunction with the Department of Natural Resources and Environment and its other partners, has established a consistent approach to assessing and managing risk that is based on the Australian/New Zealand Standard for Risk Management. The Goulburn Broken CMA's risk management approach has six key features:

- identifying objectives – these objectives are related to projects, activities and programs;
- pinpointing the risks to achieving these objectives;
- assessing the likelihood and consequence of the risks;
- implementing 'controls' and a risk management treatment plan to deal with these risks in order to achieve the desired objectives;
- ranking and treating risks and
- monitoring and reviewing the process.

The risk management process is cyclical and ongoing. The main risks identified to date are described in the following table:

Specific risk	**Description of risk**	**Likelihood of risk emerging**	**Consequence for natural resource assets**
Implementation / Management	Participation rates are lower than expected	Moderate	High
	Uptake of rebates /incentives are lower than expected	Moderate	Moderate
	Stakeholders not identified	Low	High
	Stakeholders expectations not captured	Low-Moderate	Moderate-High
	Project activities are not completed using agreed methods or to expected levels	Low	High
	Adequate trading models are not developed in next 10 years	Moderate	High
	Efforts to induce private market involvement in NRM are unsuccessful	Moderate	High
Biophysical	Information incomplete, insufficient understanding of processes	Low to Moderate	Moderate
	Assets not properly identified and risk not quantified	Low	High
Environmental	Compromise resource condition	Likely	Moderate-Low
	Inadequately define ecosystem services	Moderate	Moderate
Social	Community awareness low	High	High
	Community not accept solutions	High	High
Heritage	Implementation of strategy does not account for impact on heritage values	Moderate	High
Economic	Compromise regional development	Unlikely	High
	Community unable to afford implementation	Likely	High

Contingency planning

Contingency Planning is identifying the range of risk control options for a project, evaluating them, selecting preferred treatment and implementing the appropriate risk treatment plan. The GBCMA will adopt the DNRE risk management model which requires they:

- develop a continuous improvement process and put in place contingency plans to address the identified risks.

- build flexibility into project management to allow for new or innovative approaches that demonstrate potential at any stage during the project.
- develop a range of management and evaluation products, addressing different situations and needs, using learning techniques and different levels of complexity in order to maximise participation rates.
- keep the community informed of changes to investments (particularly short term) and the expected impacts.

Some of the planned activities are innovative, with potential political implications at both regional and state level. Such changes will be dealt with sensitively and carried through only where there is high level support.

Cultural Heritage

As part of the business planning and risk management process DNRE and the GBCMA will undertake to improve the integration of cultural heritage issues into the planning and implementation phases of the RCS.

Heritage assessments in all areas of major works will be crucial. Implementation staff will work with Aboriginal Affairs Victoria, land councils (Taungurung, Wurundjeri and Yorta Yorta) and local aboriginal communities to identify sites of significance or importance to the local community and agree on the measures to ensure their preservation.

The Plan will also support the presentation of training and awareness programs to staff and community on landscape features and the significance protecting our cultural heritage.

Monitoring

It is important to monitor the implementation of the strategy to assess whether or not the results are being achieved. It is also important to be able to report to stakeholders on the success of strategy implementation by assessing progress against targets for individual actions.

Monitoring involves collecting information and reporting on indicators of changes in the condition of catchment assets. The information collected needs to undergo a continuous evaluation to ensure that:

- it informs our decision making and risk assessments and
- the models that connect data flows and our comprehension of the systems and how it works are tested

The key indicators to be monitored as part of this strategy are stream EC and flows, area of dryland salinity and adoption of best management practices.

Extensive water quality monitoring is conducted under the Victorian Water Quality Monitoring Network, through GMW as part of their monitoring of the condition of major storages, the dryland salinity program and the EPA.

There is a need to monitor not only the quality of water, but also the impacts of that water quality, for example, the ecological impacts. The impact of changes in stream salinity regimes on the health of aquatic ecosystems will be assessed and management strategies developed accordingly. The index of stream condition (ISC) provides a useful framework for this. The ISC gives a summary of hydrology, physical form, riparian zone, water quality and aquatic life. The water quality information needed to compute the chemical sub-index of water quality for the ISC requires monthly monitoring of pH, electrical conductivity, turbidity and total phosphorus.

Evaluation framework

Evaluation will occur over different geographic and time scales. This framework describes evaluation on three fronts:

1. accountability, to what extent the objectives and targets of the strategy are met
2. improvement, of processes, to deliver a more effective and efficient program
3. condition, the improvement or deterioration in condition that requires a new response.

For evaluation to be successful it is important to know and articulate the assumptions that connect the outcomes and outputs between the RCS and the supporting sub strategies. From there, the sequence of steps to complete the evaluation matrix is as follows:

- identify the key stakeholders for each of the RCS and the sub strategies
- establish their requirements
- determine what success would look like if those requirements are met
- select appropriate measures or indicators to gauge progress towards meeting those requirements
- define the method to be followed for data capture (spatial and temporal collection, data sources, capture processes)
- set agreed levels for each measure or indicator
- identify who will collect, collate and analyse data
- establish processes to review and analyse the information generated and provide feedback to allow changes to be made to the strategy or plan if required..

Evaluation Review

There has to be a commitment to the evaluation process to create the appropriate environment to support adaptive management. An annual review of the evaluation process should be conducted to ensure:

- the evaluation is doing justice to stakeholders views/values
- the program learns from what it is doing
- the evaluation is useful to those involved
- it is persisting through implementation
- it remains relatively simple and effective