

Chapter 5

Planning and Implementing Integrated Catchment Management

Jennifer A. Bellamy¹, Geoffrey T. McDonald², Geoffrey J.
Syme³ and Daniel H. Walker⁴

¹CSIRO Tropical Agriculture, St. Lucia, Queensland. 4067

²Department of Geographical Sciences and Planning, University of Queensland, Queensland. 4072

³CSIRO Land and Water, Perth, Western Australia. 6014

⁴CSIRO Tropical Agriculture, Townsville, Queensland. 4814

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Authors: Jennifer A. Bellamy, Geoffrey T. McDonald, Geoffrey J. Syme and Daniel H. Walker

Contact Details: Jennifer A. Bellamy
CSIRO Tropical Agriculture
120 Meiers Rd.
Indooroopilly, Qld. 4068. AUSTRALIA

Ph: 61 7 3214 2345
Fax: 61 7 3214 2328
Email: jenny.bellamy@tag.csiro.au
Web: <http://irum.tag.csiro.au>

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I. INTRODUCTION

Approaches to natural resource management based on the integration of community involvement, technical knowledge, and organisational structure and policy objectives are endorsed throughout Australia. All State Governments have adopted programs of integrated catchment management (ICM) under a variety of names and using a variety of policy and legislative frameworks. At present the application of ICM varies widely throughout Australia, with some states such as New South Wales having established legislation, whilst others such as Western Australia and Queensland have no generic legislative powers.

The fundamental challenge of these policy initiatives is to improve the way our natural resources are used and managed with a long-term perspective. However, the translation of the concept of an integrated approach to resource use and management at a catchment scale into practice is proving difficult. ICM is an evolving concept that lacks a well-defined body of guiding principles capable of general application.

This report identifies guiding principles for the role of community-based ICM, identifies factors that are likely to influence its success and makes recommendations on its planning and implementation. These principles and recommendations are based on a five-year study to investigate factors that influence the success of a community-based approach to ICM in the Herbert River Catchment of north Queensland¹. Although many will not be necessarily surprising, their significance lies in that they are backed-up by comprehensive and rigorous interdisciplinary research (see 'Further Reading').

2. THE ROLE OF COMMUNITY-BASED ICM

2.1 *To be a process of influence.*

As a multi-stakeholder mechanism for community participation in natural resource management, ICM should not be seen as a vehicle for radical shifts in power relations within the community, but rather a vehicle for influencing policy agendas and the system of planning processes on NRM within government (local, state and federal), industry and the broader catchment community.

2.2 *To support community learning.*

ICM needs to be recognised as a program of community learning that requires a significant period of time before substantial on-ground results can be expected.

Community learning at all levels, including the State level, implies:

- the parallel increase in awareness of the significance of long term resource management problems;
- appreciation of the need for integrated as opposed to piecemeal approaches;
- maturing of community cooperation to address the problems;
- creation of plans and actions that are agreed by the community;
- political support; and
- eventually, substantial on-ground change.

This process can easily stall and even reverse at any time along the path.

2.3 *To be a partnership between government, industry and the community.*

The ICM initiative relies on existing authorities and various programs and planning processes of state and local governments and private and non-government sectoral activities to implement their plans and achieve their objectives. ICM requires a

¹ LWRRDC R&D Project CTC7 – Evaluation of Integrated Catchment Management in a Wet Tropical Environment.

partnership approach between different levels of government (particularly local government), industry, landholders and the broader community. There is a responsibility for landholders to do things on the ground, which are widely supported by the community. At the same time, both incentives for their efforts and resources for voluntary groups need to be provided by government rather than through regulation alone. An important way to implement this will be joint on-ground projects. This includes ensuring consistency of the information that is provided for the community from government. In doing so, there needs to be agreement on the exact roles of community and government, ie. clear roles will need to be established at the commencement of any activity.

2.4 To ensure legitimate representation.

For the partnership to work and gain credibility within the catchment community, representation in the ICM process must be legitimate, inclusive and accountable. Representatives must keep their constituents informed of the ICM process, interact actively with their constituents to understand their perspectives, and adequately represent their constituency's interests to the partnership.

2.5 To provide a community forum for coordination of effort, networking and social learning.

Community-based ICM meetings can provide an effective and legitimate community forum for networking, both within the community and between government and the community, as well as a vehicle for the exchange of information and more informed and inclusive discussion on NRM issues and planning processes that links state government, local government and various key catchment stakeholder groups. Decision-making in this forum needs therefore to be based on negotiated accommodation of explicitly stated interests and social learning of new shared perspectives rather than entrenched positions.

2.6 To build trust and effective interactions amongst stakeholders.

The success of ICM in precipitating action on catchment issues depends on the willingness of the participating individuals to build trust, deal sensitively with conflicts in the catchment community and work on maintaining productive interactions within the context of workable institutional arrangements. In this, local leaders play a substantially influential role.

2.7 To ensure fairness of process.

A key determinant of broader community acceptance of decision-making on catchment issues and related planning outcomes is the perceived fairness of NRM process and procedures and relatedly the fairness of outcomes that people receive. An ICM process can foster fairness through: (a) establishing a legitimate system of representation for the ICM initiative (eg. ensuring inclusiveness of membership and the supporting representatives to adequately represent their group's interests in the ICM process), (b) working towards the development of acceptable cost-sharing arrangements for NRM infrastructure and on-ground works and (c) establishing a decision-making approach for ICM that is based on a process that seeks consensus amongst stakeholders, while respecting and accommodating on-going differences.

2.8 To identify and broker project funding opportunities.

ICM needs to develop a lead role as the principal broker in the catchment for external funding of community projects to address natural resource management problems in the catchment (eg. NHT). This role can provide the catalyst for community activity in federal and state-funded natural resource management initiatives in a more strategic way than in the past.

2.9 *To provide an influential voice on NRM at the regional level.*

An ICM initiative has a key role of linking NRM principles and objectives into regional processes such as regional economic development, regional planning, cultural heritage and conservation management programs and processes.

2.10 *To demand long term government agency commitment to the process.*

The success of ICM is in part dependent on government agencies resolving bureaucratic gridlock among the array of fragmented but inter-dependent agency-based policies, plans and programs and, in particular, ensuring long term agency commitment to the ICM process (ie. clear upper management commitment within government agencies, political support, financial and administrative resources, establishment of workable institutional arrangements).

2.11 *To provide a vehicle for integrating information relevant to NRM.*

The two primary sources of information for the ICM process are local knowledge and expertise and existing technical information held by state and other relevant bodies. ICM meetings provide a central pooling of local knowledge through the wide diversity of stakeholder representatives involved in the ICM decision-making processes and related activities. Agencies are also repositories of technical information on the catchment but this information is fragmented and needs to be “shared” with other agencies and local interest groups. A key role of ICM is to foster the capture of relevant data on NRM issues and the development of locally accessible mechanisms for integrating data and delivering information.

3. FACTORS THAT INFLUENCE ICM OUTCOMES

3.1 Characterisation of NRM Issues in the Catchment

Historical context and evolution of resource use

- The level of understanding relating to the history of land use change and resource use within the catchment that can help to identify the causes of some issues, to identify the target/client groups and to target strategies to resolve the problem.

Diversity of stakeholder knowledge, attitudes and values on natural resource use and management

- Degree of catchment community awareness of the importance of environmental problems and the need for behavioural change and timely action.
- Degree of recognition across stakeholder groups of community responsibility to address natural resource use and management problems.

Extent of problem recognition and acceptance of change required by different stakeholders

- The history of stakeholder ‘ignorance’ of the incremental, cumulative and insidious nature of environmental degradation in the catchment, as well as the existence of a past developmental ethos supported by both governments and rural industry that actively promoted land clearing and intensification of land use.

Scientific understanding, feasibility and acceptability of technical solutions to natural resource problems

- The availability and level of accessibility to all stakeholders of local knowledge, scientific data and technical understanding on natural resource issues in the catchment.

- The availability and acceptability to stakeholders of technical ‘solutions’ for sensitive issues in the catchment.

3.2 Local Attitudes, Values and Behaviours on NRM

Evolution of on-ground policy or program implementation

- The degree to which the catchment community perceived the ICM process as a voluntary one or one forced on the community by government.
- The degree of perceived personal and community control or influence on the management of land and water issues in the catchment.
- The appropriateness of the ‘scale’ of the ICM initiative to the local community, that is the degree of perceived relevance and meaningfulness of the catchment ‘scale’ to the local community of interest.

Socio-economic conditions and trends of context of implementation

- Stakeholder perceptions of the costs of solutions and the level of financial capacity within the catchment community to address natural resource issues.

Media coverage and attention

- The degree of coverage and the way in which resource management issues and an ICM initiative are presented in the local media.

Support from catchment community leaders

- The degree of support and promotion of natural resource management within local industry groups.
- The degree of support and promotion of natural resource management from politicians in local and state governments.

Attitudes and resources of local constituents

- The level and intensity of formal linkages and interaction between community, industry and government organisations with a responsibility or an interest in resource use management and planning within the catchment.
- The level of perceived personal and community benefit from becoming involved in NRM policy processes and related activities.
- Degree of perceived relevance of government strategies at a catchment scale and perceptions of their usefulness to community members at a personal level.

3.3 Adequacy of Policy Frameworks and Institutional Arrangements for ICM

Clarity and consistency of roles and objectives of the ICM initiative and other responsible groups

- The degree of consistency of the goals and objectives of an ICM policy initiative in the long term.
- Degree of integration of legislative frameworks on natural resource management across local, state and federal levels.
- The clarity of roles and responsibilities of implementing and other responsible bodies for ICM across stakeholder groups.

Coordination among implementing agencies and stakeholders on NRM

- The level of commitment of upper and other key management in state agencies to both ICM and a ‘whole of government’ approach, and their preparedness to commit resources to support the process in the long term.

- The degree of opportunity for those actively involved in the implementation of ICM to share knowledge experiences, and concerns relating to the process.
- The degree of support and closeness of the relationship between local government and ICM.
- The complementarity of the relationship between the ICM process and Landcare and the degree of coordination of their activities in the catchment.

Adequacy of financial resources for the policy initiative

- The level and security of government funding to support an ICM initiative (eg. for organisational start up, general operational costs, capacity building and leveraging other funding sources).

Commitment and skill of implementing staff

- The availability of a committed, skilled and well-funded catchment coordinator to drive the process and undertake a range of essential tasks.
- The level of commitment, amount of available time, and degree of strategic vision of the local chair of the ICM organisation.

Adequacy of policies, plans and decision rules of implementing agencies

- The degree to which the devolution of responsibilities for natural resource management to the local level is matched by a concomitant devolution of resources and capacity to local authorities.
- The degree of inclusiveness of the representation of interests on the ICM organisation.
- The availability and equity of cost-sharing and other incentive systems to encourage and support changes in land manager behaviour.
- The availability to the ICM organisation of guidelines and practical options for taking action on specific problems on the ground.
- The degree of focus of regulatory mechanisms on strategic integrated planning rather than development control.
- Availability of agreed management plans for land, water and vegetation resources in the catchment.

3.4 Sustainability and Equity of Processes for ICM

Knowledge and expectations of the process by stakeholders

- The degree and diversity of stakeholder awareness of catchment issues and their expectations of ICM.
- The community perception of the acuteness or perceived social importance of resource management problems and their ability to link these perceptions to ICM related solutions.
- The degree of matching of the views and understanding on the aims of ICM between the overall catchment community and those of the members of the ICM organisation.

Degree of coordination of resources to address catchment issues

- The degree of coordination of government resources and level and intensity of commitment to a whole of government approach across relevant agencies.
- The degree of contradiction and conflict in the flow of information and advice from different state government agencies.
- The effectiveness of communication networks between state agencies as well as between these agencies and other relevant organisations in the catchment.

Degree of motivation, commitment, cooperation and support for the process

- The capacity and willingness within an ICM organisation to collaborate with other groups and agencies or individual experts with a particular understanding of the issues.
- The degree of 'over-commitment' of key players, and the diversity and compatibility of the different 'hats' they wear.
- The degree of self-interest and gate-keeping by stakeholder representatives on the ICM organisation particularly regarding controversial or 'hot' issues for the catchment.
- Perceived degree of politicisation of natural resource management issues by the catchment community.

Efficiency and effectiveness of process

- The effectiveness of the ICM organisation in providing a representative community forum for informed debate on catchment issues, including linking state government, local government and other community groups, fostering the exchange of information amongst stakeholders, and the development of an appreciation of the nature and diversity of other stakeholder's viewpoints on particular issues.
- The degree to which the ICM initiative is perceived to be fostering a partnership approach between local government, state government and the community.
- The degree to which local government incorporates ICM principles into local government planning processes and takes responsibility for implementing them.
- The degree to which the ICM initiative is able to identify opportunities to undertake high profile activities that are topical, measurable and have visible outcomes to the catchment community in the short term.
- The frequency of turnover of staff and degree of retention of expertise on ICM within state agencies with roles and responsibilities relating to natural resource management in the catchment.
- Accessibility and availability of the local knowledge and expertise on catchment issues from a diversity of catchment stakeholder groups/interests to the ICM process.
- Timely targeting of appropriate information.

Perceptions of equity and procedural justice/trust in process

- The perceived inclusiveness of the selection process for stakeholder representation on the catchment committee and the adequacy of the rules and strategies underpinning this process.
- The perceived adequacy and fairness of the cost-sharing arrangements amongst potential beneficiaries of the investment in NRM activities in the catchment
- The degree of inclusiveness and level of participation of stakeholders in the development of the catchment management strategy.
- The degree of willingness and capacity of relevant government agencies and community organisations to share information.

4. RECOMMENDATIONS FOR PLANNING AND IMPLEMENTING ICM

4.1 Establishing Local Relevance

The implementation of an ICM initiative is inherently context sensitive and a wide range of environmental, economic, social, policy/institutional and technological factors will influence its implementation and impact. In any particular instance, the human association with the natural resource environment in a catchment is embedded in established social networks and interactions, fundamental social values, institutional frameworks, historical problems, past experiences and established ways of doing things and it will continue to be shaped by them in the future.

➤ **Recommendation 1:**

To ensure community acceptability and establish relevance to the local context, an ICM process should focus on achieving a sustainable future for the catchment by working with, influencing and improving the effectiveness of existing social networks and institutional frameworks rather than creating a completely new set of structural arrangements that supplant the old.

4.2 Establishing Supportive Institutional Arrangements

Although the development and implementation of strategies for catchment resource management should be encouraged through the voluntary cooperation of the community, industry groups, local government and state government agencies, the effective implementation of ICM objectives at the local level requires legislative support.

➤ **Recommendation 2:**

An ICM initiative needs to be initiated and its implementation supported as a voluntary partnership between the community and government. However its on-ground implementation also requires the balanced support of incentive systems (to encourage voluntary action in the community) and legislative backing (to enforce compliance where necessary).

Local government has substantial scope to achieve catchment management objectives through the incorporation of ICM principles into planning schemes. However local government land use planning is not the answer alone as it may only have powers to influence decision-making in limited situations (eg. to variations to existing use rights or new development applications).

➤ **Recommendation 3:**

ICM needs to foster strong linkages with and involvement of local government in the ICM process and to ensure the integration of ICM principles into local government planning schemes. However it also needs to support the integration of local government planning schemes and development assessment procedures with other resource management arrangements that may deal more effectively with existing use rights on both leasehold and freehold lands.

Although there has been an increasing commitment within federal and state governments to devolve responsibility for natural resource management to the local level, in general there has not been a concomitant devolution of resources to local authorities to support them doing so.

➤ **Recommendation 4:**

The ICM initiative itself, and state government in particular, need to actively address the lack of capacity (ie. knowledge, resources, skills) in local authorities to identify opportunities and to implement ICM objectives.

The common short-term nature of ICM funding and political cycles is not conducive to the development of long term sustainable solutions, or to the long-term commitment of staffing necessary for a successful ICM organisation. This is especially an issue for a program that is intrinsically evolutionary and dependent on awareness, planning and action cycles that take longer than a few years to establish. Importantly, once an ICM organisation is established and catchment management strategies developed, the requirement for funds for on-ground works will increase substantially as planning is inexpensive relative to action. There is also a risk that ICM activity and progress will be entirely opportunistic and dictated by state and federal government political imperatives and competitive funding opportunities rather than being directed by the community priorities identified in the catchment management strategy.

➤ **Recommendation 5:**

An ICM initiative requires adequacy and long term security of financial resources for both start-up and on-going operational support of the ICM organisation and to have reasonable expectations of competitive project support. The ICM organisation also needs to adopt a lead role as the key broker in the catchment for coordinating external funding of community projects to ensure that natural resource management problems in the catchment are addressed in a more strategic way.

Coordination of government resources to address issues of community conflict relating to land and water resources management from a whole of government approach within the catchment is essential to an effective ICM process. State agencies often make decisions on NRM issues independently of each other and local interest groups. In particular, a lack of sharing of information between agencies can lead to contradictory or conflicting information being presented to the community by different government agencies with regard to important catchment issues which exacerbates the community conflict. In addition, many existing regulatory mechanisms for resource use and management focus on development control rather than strategic integrated planning and therefore provided only limited opportunity for ICM to influence decision-making

➤ **Recommendation 6:**

The complex and often confusing array of Acts, programs, and policies that impact on resource management at the local, catchment, state and national levels require rationalisation to support a more strategic, integrated and coordinated approach to catchment management. In particular, a key requirement from government for successful ICM is the clear commitment of key officials to ensure effective participation, coordination of effort and consistency of advice by all relevant agencies as well as the continuity of political commitment (ie. all tiers of government) on a long-term basis.

ICM is promoted as a partnership approach to catchment management between government, industry and the community. However, specific roles and responsibilities for the different partners are frequently couched in very general terms, which may lead to confusion and slow progress or even in-action on important or challenging catchment strategies in some situations.

- **Recommendation 7:**
At the commencement of any work or activity of an ICM process, clear roles and responsibilities need to be negotiated and agreed upon between the responsible government, industry and community bodies.

4.3 Establishing Legitimacy

ICM as implemented in Australia is essentially an experimental program with participants on a steep learning curve. Community learning at all levels, including the State level, implies the parallel increase in awareness of the significance of long term resource management problems, appreciation of the need for integrated as opposed to piecemeal approaches, maturing of community cooperation to address the problems, political support, creation of agreed plans and actions and eventually substantial on-ground behavioural change. This process takes a long time to evolve and can easily stall and even reverse at any time along the path.

- **Recommendation 8:**
ICM needs to be recognised, promoted and supported as a program of community learning that requires a significant period of time before substantial on-ground results can be expected.

Understanding of cause-effect relationships and ‘solutions’ to major issues in a catchment can vary along a scale of ‘speculative’ to ‘uncontested’. The lack of technically uncontested ‘solutions’ for highly sensitive issues in a catchment can lead to substantial community conflict and lack of confidence in government, research and other relevant agencies.

- **Recommendation 9:**
ICM needs to ensure Government agencies and other technical advisers or experts do not push highly speculative solutions that may create greater social conflict and loss of trust in policy processes. In particular, the resolution of sensitive issues requires clear local interpretation supported by appropriate and locally credible data.

The perceived level of openness and inclusiveness of the processes established for the management of the ICM organisation’s representational structure (eg. election of office bearers, use of proxies, reviewing membership) will reflect on its credibility within the catchment community and government. In addition, ICM committee members are frequently active and committed community leaders who wear “too many hats” such that they may have difficulty in committing sufficient time to ICM activities.

- **Recommendation 10:**
An ICM process needs to establish clear and agreed ground rules on how the ICM organisation will operate (ie. purpose, structure, composition, representative appointment process, decision-making rules, and roles and responsibilities). In particular, efficient use of proxies and turn over of representatives are essential for an inclusive, enthusiastic and actively influential ICM process.

Feelings of personal and community control are related to feelings of tractability of the NRM problem. The perceived impediments to effective ICM most commonly relate to feelings of personal or community control and include ‘institutional failure’ (eg. slow government responses and strategies, departmental conflicts, lack of government

commitment to a 'whole of government' approach) and economic issues (eg. high costs of solutions and lack of financial capacity in the community).

➤ **Recommendation 11:**

The perceived impediments to managing land and water need to be addressed by speeding up government responses and strategies, promoting where possible low cost solutions to problems and ensuring regular communication with the community about what is happening. This will assist in improving relations with the community and heightening trust in government.

4.4 Creating Awareness of Issues and the ICM Process

ICM processes frequently are required to deal with intractable issues that are embedded in past land use decision making behaviour and land management practices. Successful ICM requires a high degree of community awareness that there are important environmental problems that require timely action. However, land and water management issues may not be uppermost in people's minds, first priorities frequently lie with 'life issues'. Awareness raising undertaken by an ICM initiative is likely to be more productive in relation to issues that are well understood scientifically and have local relevance rather than remaining fundamentally contentious.

➤ **Recommendation 12:**

In facilitating an effective ICM process, ICM organisations and supporting government and industry agencies should place a priority on the collection of key natural resource use data to understand past and present resource use and management practices in the local catchment context. This information can inform the community debate on the nature and extent of both future resources use and the level of behavioural change required to meet these aspirations. The information can also be usefully presented as a catchment Atlas for broad distribution and use within the community. In addition, effective awareness raising requires a reasonable knowledge of the current level of awareness in the community on specific issues and on the sources of information most widely used by people in the catchment community. In particular, an ICM process can influence a community's awareness on natural resource issues and the ICM process itself through opportunistic use of high-profile political or controversial issues/events of local relevance.

4.5 Influencing and Precipitating Action

Although there may be good agreement among stakeholders on the key catchment resource management issues, for any particular issue individual stakeholder diagnosis of their causes and possible solutions may vary significantly. The success of ICM in precipitating action on catchment issues depends significantly on the choice of method of community engagement, which should be based on a clear understanding of the particular decision context of that issue.

➤ **Recommendation 13:**

The success of ICM in precipitating action on catchment issues depends on the willingness of the participating individuals to build trust, deal sensitively with conflicts in the catchment community and work on maintaining productive interactions within the context of workable institutional arrangements. In particular, in choosing a method of

community engagement and a strategy for action for a particular catchment problem, clear understanding is required of the decision context relating to that problem, including the locally perceived mode of solution or level of technical complexity involved in resolving the problem and the nature and intensity of community conflict associated with the decision.

Raising awareness of issues amongst resource managers alone is not necessarily going to result in a change in management behaviour. Many long-term solutions to natural resource problems are frequently not in a landowners self-interest financially or social benefit to undertake. Specifically the costs of action are incurred by both individual landowners (eg. opportunity cost of land, restoration or remediation works, materials and construction costs, in-kind contributions of time and equipment) and the catchment community (eg. cost of reparation or remedial works, construction costs, wages and publicisation). Similarly the benefits will accrue to both landowners (eg. avoided costs of lost production, aesthetic attraction of improved habitat, reduced production costs, improved water supply) and the catchment community (eg. improved downstream water quality, retention and improvement of natural habitats, reduced social conflicts, reduced litigation and transaction costs, aesthetic benefits, avoided costs of resource degradation and damage to infrastructure). However, private property owners could incur considerable financial expense, but most benefits would accrue to the community in general.

➤ **Recommendation 14:**

Many resource management issues require the political commitment and will of relevant local and state government agencies to effectively and consistently apply their relevant powers in land development decision-making and approval processes to ensure ICM principles are taken into account. However, effective and equitable cost-sharing and other incentive systems to encourage changes in land management behaviour need to be established to support these processes. In particular, an ICM process that relies on the voluntary cooperation of individual resource managers may need to offer financial incentives if a change in attitude is going to lead to a change in behaviour that will result in an improvement in sustainability of resource use.

Influencing resource managers and planning processes and precipitating on-ground action falls into the broad strategic direction set by the Catchment Management strategy. However, moving from identifying and prioritising issues and developing a catchment management strategy to precipitating action on those strategies is a major challenge for a community-based ICM process. In particular, due to the complexity of the problems being addressed and the limited resources available to ICM, the implementation is likely to be opportunistic and limited in terms of the locally available knowledge of the type of action or response required that is likely to be effective for catchment management. It may also be limited by the specific skills available to complete a desired action or response.

➤ **Recommendation 15:**

The expertise of members of the ICM organisation is often critical in identifying opportunities for influencing resource managers and planning processes as well as precipitating action. Collaboration with other groups, agencies or individual experts with particular understanding of the issues involved is also often an expedient way of precipitating appropriate action. In addition, government agencies need to develop guidelines and advice

that identify practical on-ground options for a community to take action on specific types of issues. Government agencies also need to be aware of their own shortfalls in knowledge and respond to local knowledge where appropriate.

4.6 Gaining and Maintaining Commitment to the Process

One of the big challenges for ICM is keeping up the momentum in a process where tangible outcomes are slow to emerge and may well be attributed to others influenced by ICM rather than the ICM process itself. Representatives of ICM organisations are often community leaders who are often over-committed. Loss of motivation and burn out are therefore high potential risks amongst community participants.

➤ **Recommendation 16:**

The management skills of key ICM personnel and office bearers are essential to a successful ICM process. In particular, an ICM initiative requires a credible and confident Catchment Coordinator who can “drive” the process and undertake essential and “burn-out” tasks. This requires a skilled person with experience and knowledge of NRM issues and agricultural systems, good communication skills, well developed interpersonal and conflict resolution skills for handling a diverse group of people, and who is sufficiently confident and prepared to stand up and be accounted for on catchment issues.

Although there may be community awareness and interest in catchment issues, the personal influence people feel they may have in addressing those issues may not be particularly high which can hinder community participation in ICM. A high personal sense of control in dealing with catchment issues, or a belief that individuals can help motivate the community to improve these problems will facilitate the promotion of ICM in the community and commitment to the process. In addition, government strategies are often not perceived to be highly useful to community members at the personal level and therefore not seen to be highly relevant at that scale.

➤ **Recommendation 17:**

An ICM process needs to address the lack of influence felt by the community by showing that they have influence and demonstrating both the ways in which they can change land and water management and the relevance of catchment strategies at the farm or personal level.

4.7 Establishing an Influential Role

As a community-based process without statutory powers on natural resource use and management, an ICM initiative will rely largely on existing authorities and various programs and planning processes of state and local governments and private and non-government sectoral activities to implement its plans and achieve ICM objectives.

➤ **Recommendation 18:**

As a multi-stakeholder mechanism for community participation in natural resource management, ICM should not be seen as a vehicle for radical shifts in power relations within the community, but rather a vehicle for influencing policy agendas and the system of planning processes on NRM within government (local, state and federal), industry and the broader catchment community.

Effective communication between groups and individuals is potentially an important means of influence in terms of changing outlook of others on ICM or environmental issues. In particular communication is effective in increasing awareness and gaining understanding and knowledge.

➤ **Recommendation 19:**

An effective overall system of communication on ICM across all stakeholder groups should be designed to facilitate significant outcomes including *mutual benefits* (such as information exchange, progress or ensuing action on the issue of communication, better understanding of issues), and *mutual influence* or changed outlook (including changed views, acknowledgment of problems, increased awareness of problems, sharing of ideas, increased acceptance and awareness of ICM). It should provide opportunities for both formal and informal exchanges between stakeholders.

A Catchment Management Strategy needs to be considered as a 'living document' that evolves as local community and technical understanding and relevant political imperatives change and develop over time. An endorsed catchment management strategy developed through a participatory process involving key stakeholders in the catchment provides the basis for developing both a shared vision of the catchment as well as leveraging funding support for the ICM organisation and related project activities. Generically, the general framework (ie. structure and content) of a Catchment Management Strategy however will be largely dictated by State level policy requirements.

➤ **Recommendation 20:**

The local expertise of those stakeholders involved and consulted during the process of developing the strategy needs to be used to develop a strategy within the general framework required by government but that meets local needs. In addition, documented information and knowledge needs to be used to validate, 'reality check' and further develop the structures and issues generated by this participatory process. It is important also that the data and information that underpin the strategy document are maintained by the ICM organisation and that an on-going process of collection and integration of key information continues so that future versions of the strategy can reflect an increasing understanding of catchment management.

4.8 Communicating with the Community

Communication on NRM within a catchment community relies predominantly on existing social networks. However, local media can also provide a highly important source of information to the community.

➤ **Recommendation 21:**

Local media such as local newspapers can contribute to community discourse on natural resource management issues and can be exploited to bring attention to an ICM approach within a catchment community.

Community recognition of the importance, urgency and impacts of land and water issues can be exploited. Concentrating on solutions and actions can help to prevent a positively "doom and gloom" image sometimes perceived within a catchment community.

➤ **Recommendation 22:**

When communicating with the catchment community, an ICM process should focus on those issues where there is low awareness and a desire to know more, including possible solutions for environmental problems and ensuring there is something provided that the community can start working with immediately. It may require systematic community investigation to identify those issues for all sectors.

4.9 Working with the Community

In working with the community, it is important to understand and acknowledge the historical issues that have been frustrating for the community in order to move forward, gaining support and involvement. In particular, an ICM process needs to acknowledge the importance of employment and financial issues.

➤ **Recommendation 23:**

An ICM process needs to recognise money constraints and the limitations on people's time to become involved in local land and water management activities and promote solutions and activities for the broader community that can save them time or take very little extra time or effort. It also needs to assist in identifying and publicising employment opportunities in the solutions that are developed for land and water management.

ICM is promoted as a partnership approach between different levels of government (particularly local government), industry, landholders and the broader community. Implicit to this approach is a responsibility for landholders to do things on the ground, which is widely supported by the community.

➤ **Recommendation 24:**

In a partnership approach to ICM, incentives for individual landholder efforts and resources for voluntary groups need to be provided by government rather than through regulation alone. An important way to implement this will be joint on-ground projects. This includes ensuring consistency of the information that is provided for the community from government to support these projects/activities. Giving the ICM group more autonomy will also act to increase motivation and a positive outlook.

4.10 Informing the ICM Implementation Process

The challenge to create policy processes, institutional arrangements and NRM practices that can contribute towards achieving sustainable and equitable resource use outcomes requires support from monitoring and evaluation of the progress and impact of the ICM policy initiative as part of the change process.

➤ **Recommendation 25:**

Monitoring and evaluation of the progress and impact of an ICM policy initiative is fundamental to identifying change, supporting an adaptive approach that is flexible enough to meet the challenge of this change, and enabling learning at individual, community, institutional and policy levels. In particular, ICM initiatives need to be evaluated as a system that links the initiative's objectives and rationale to performance 'on the ground'.

Implementing an effective ICM program places a number of information needs on the ICM process. The specific information provisions required in order for ICM to contribute to the solution of problems are diverse from biophysical through socio-economic to procedural, variable with the stage of implementation of the ICM process, and in any specific instance, context specific. They are also likely to be unpredictable in response to changing circumstances and priorities in the catchment including political imperatives and opportunities, funding options and technical understanding.

➤ **Recommendation 26:**

Major ICM based initiatives in the formal collection, collation and management of information relevant to the ICM process may be both inappropriate and unrealistic for a community-based ICM group to undertake. However it is imperative that effective communication of information is possible between relevant State agencies and other key stakeholder groups and members of the ICM organisation. Based on an adaptive and opportunistic approach, information needs for an ICM initiative can be usefully considered and managed in relation to four discrete tasks: developing a Catchment Management Strategy, raising awareness of ICM and the issues it is tackling, influencing and precipitating action and planning by others, and managing an effective ICM program.

Local corporate knowledge and expertise is likely to be a primary source of information applied within the ICM process. Accessibility and availability of the local knowledge and expertise on catchment issues can be provided through the diversity of catchment stakeholder groups/interests represented on the ICM organisation.

➤ **Recommendation 27:**

An ICM organisation needs to provide not only for effective representation of key stakeholder groups but also as broad a base of expertise locally available as can be achieved. The Catchment Coordinator must have a key role to play in providing a stream of information to ICM members so that they can continue to expand their expertise in relation to ICM relevant issues.

A broad range of community, industry and government organisations with some level of responsibility or an interest in resource use management and planning function in catchments or at a regional level. The system of organisational structures and linkages is a critical mechanism for facilitating the exchange of information and supporting a coordinated and inclusive approach to catchment management decision-making.

➤ **Recommendation 28:**

An assessment of the change in the system of organisational structures and formal and informal linkages on natural resource management can provide a key indicator of progress on ICM.

Landholder values, behaviours and attitudes toward land and water management in a catchment can provide an understanding of the social factors that influence the implementation of ICM initiative in a particular catchment.

➤ **Recommendation 29:**

Attitudinal surveys of catchment residents extend social profiles beyond a demographic focus to perceptions. These include a better understanding of tractability, identifying how effective ICM is perceived to be, and defining priorities for investigation (ie. where to focus effort in regard to

specific issues, such as opportunities for use of the media). The analysis of newspaper coverage can also provide a useful and unobtrusive means of gauging community values about natural resource management issues.

The effectiveness of communications provides an important measure of whether coordination is happening, and also identifies where there are gaps in the system and the effectiveness of specific/different linkages on ICM.

➤ **Recommendation 30:**

Measuring the effectiveness of communication networks should be a routine part of any ICM initiative, particularly in the early stages. As such it provides a mechanism for measuring an indicator of the transaction costs or communication “effort” required to keep a system such as ICM operating.

The assessment of local knowledge on NRM issues and processes provides an effective means of identifying key gaps in local understanding in relation to management options and in evaluating fundamental assumptions that underpin local management practice and may thereby provide an appropriate basis for prioritising research needs.

➤ **Recommendation 31:**

Investigation of changes in local knowledge over time provide a powerful tool for evaluating some of the key impacts of an ICM process. In particular, an approach based on ‘landscape literacy’ can allow the characterisation of resource user perceptions and the determination of significant differences amongst stakeholders to the principles underpinning ICM.

Accountability of public expenditure is an increasingly important requirement of agencies that have been allocated public funding and/or have applied for public funding for the provision of a program or a public good. ICM organisations are developing into well-defined and well-organised community structures with financial resources for which they are required to be accountable.

➤ **Recommendation 32:**

Cost benefit analysis (or similar) can provide valuable information for an ICM organisations that can guide the ICM implementation process regarding the efficiency of its investments as well as the distribution of the costs and benefits resulting from its activities. To facilitate such evaluations, indicators measuring the condition of natural resources need to be identified and monitored to enable substantiation of claims of natural resource improvement.

FURTHER READING

Evaluation of Integrated Catchment Management in a Wet Tropical Environment: Collected Papers of LWRRDC R&D Project CTC7. 7 volumes. Compiled by JA Bellamy (CSIRO Tropical Agriculture, December 1999).

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| 7 | Natural Resource Use and Management in the Australian Sugar Industry: Current Practice and Opportunities for Improved Policy, Planning and Management. Johnson, A.K.L., McDonald, G.T., Shrubsole, D.A. and Walker, D.H. | 299 |

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