

Collaborative management: an option for water resources management in the Pacific?

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This brief explains and illustrates international experience with collaborative management, in which governments share the management of a natural resource with communities or organisations. It is provided as an aid to Pacific government agencies and non-government organisations working in water resources management. A companion brief explains thinking on public participation and community engagement, concepts which are important for understanding the possibilities in collaborative management. Collaborative management can be viewed as a particularly strong form of community engagement.

Background

‘Collaborative management’ and ‘co-operative management’ are terms used for arrangements where different sets of people agree to manage a natural resource together. Both terms can be shortened to ‘co-management’. Co-management is a form of partnership. Typical arrangements are between governments and communities, but other parties are possible. There may be two parties, or several. Together they may manage one issue or resource, such as water for irrigation or a particular plant or animal species, or a complex set of inter-related issues, or an area such as a river basin or a national park. Some believe the relationships between the parties should be equal, while others are comfortable using these terms to describe unequal roles within the management arrangement. Some excellent arrangements are equal in their sharing of decision-making power and contributions of knowledge, but the parties may adopt different roles according to their skills and resources.

When is collaborative management used?

Collaborative management is useful where no single party has complete control or influence over a place or issue that two or more parties wish to manage. Typically, each party needs the support of the other to achieve the outcomes all need. Examples include:

- Management of migratory wildlife, species that move across different land tenures (sometimes on government land, sometimes on customary or private land, or crossing state or international boundaries);
- Where customary law and government law both apply to the same land, water or other natural resources including fisheries and wildlife;
- Where issues transcend land tenures, for instance in a mosaic of private and public landholdings in a river catchment (watershed or river basin);
- Where one person’s or party’s actions can influence the welfare of others, or other species, beyond the boundaries of their own land. For instance, where one party’s taking of water, or pollution of water, affects the amount or quality of water left for those downstream.

Co-management thus enables those with differing rights and responsibilities towards a natural resource to share management roles within an agreed structure and processes. The parties’ different capacities – knowledge, skills or resources - can be brought together for mutual advantage. For instance, in wildlife management, those who hunt a migratory or marine species may be keen to demonstrate responsible management in order to be permitted to continue to hunt. Hunters tend

to have good knowledge of species behaviour and are on location, whereas government would find it expensive to station officers in remote areas.. They are able to monitor species numbers, and report these to the other parties to their co-management agreement. Together the parties then make decisions to adjust the ways in which they manage the species and its habitat, to keep numbers plentiful.

Collaboration also works well where government regulation would be ineffective for various reasons, for instance where the public has little incentive to comply with legislation, or where practices may be legal, but damaging to the environment.

Why and how has collaborative management developed?

Arrangements start in various ways.

Collaborative management has been developed in different circumstances around the world to:

- *solve intense conflicts*, for instance in water allocation, or forestry impacts on rivers and fish;
- *share water access equitably* e.g. customary irrigation schemes, in some cases now supported by government through resourcing and policy;
- *solve problems of decline of a favoured species*, where cooperation is seen as more effective in managing threats than regulation or political decisions;
- *solve conflicting rights and responsibilities*, for example where two parties have rights or responsibilities in land.;
- *achieve effective, long-term public engagement*.

Examples

In northern **Canada**, a number of wildlife species including caribou, geese and some whale species are managed collaboratively between Indigenous peoples, provincial governments, and in some instances hunters and fishers. Later, as large areas of land

became co-managed under regional agreements negotiated to resolve Indigenous land claims, the agreements for co-managing particular species became incorporated within the regional agreements. Canada and parts of the USA also have numerous arrangements for co-managing fisheries: in these arrangements fishermen co-manage a fish species or fishing area with government (George *et al.* 2004).

In **Australia**, many national parks are co-managed between Indigenous people and government conservation agencies. This arrangement enables Aboriginal title to the land to be recognised and respected, both parties to contribute to the decision-making and hand-on management, and Aboriginal employment opportunities and small businesses to grow.

In **Japan**, governments and irrigators share management of what were once customary irrigation systems (Sarker and Itoh 2003). Irrigators continue to make the key decisions on water allocation, according to their own rules, but the government plays an important role in providing financial support to build the infrastructure. Similar arrangements apply in some other countries.

Integrated Catchment Management (ICM)

In **Australia**, ICM (also known under some other names) involves many parties with interests in land and water management working together to manage the lands and waters in catchments. Usually the land is owned by a vast range of private owners, mainly farmers with different types of farm, alongside government or Indigenous people holding protected areas or areas for other special purposes, town residents, and industry estates. The range of land uses is complex. Clearly governments could not legislate successfully to manage this wide variety of land uses, and the impacts on water quantity and quality. It is important that catchments be managed, however, as otherwise upstream water users could take, or pollute, too much water to the detriment of those downstream. In the most recent arrangements:

- Federal and state governments provide money, encouraging other parties to contribute funds and ‘in kind’ resources (such as volunteer labour, knowledge) as ‘partners’.
- A Board is elected or selected to represent the range of interests in the catchment, such as local government, Indigenous peoples, voluntary conservation groups, farmers, and secondary and tertiary industry. (Ideally state and federal government should participate also, but currently they do so through funding and approving plans, rather than sitting on the Boards).
- The funds allow a set of office staff to help the Board and all partners to write and implement management plans, and to distribute funds to partners to carry out land and water improvement projects.
- Board members and office staff need to communicate with the people and businesses in the catchment, for instance all the farmers.
- The catchment management body makes a plan, through extensive community consultation. It then implements the plan, through a set of projects and activities to which all partners contribute. For instance, a local government might work with voluntary conservation organisations to improve a wetland in their area, using local government funds, equipment and paid labour force, and voluntary group know-how and labour. The plans are updated at regular times.

While most fit this general description, there is a wide variety of specific arrangements, each with different histories, management arrangements and core purposes. The integrated catchment management arrangements have enabled major environmental problems such as soil erosion and salinity to be tackled, and they have done much to increase community awareness of the needs to change land and water use practices.

How does co-management work?

Co-management arrangements can start with an agreement and firm plan of action, or be allowed to evolve from a modest start as the parties learn to work together. The arrangements are usually negotiated between the parties, and expressed in a formal agreement. There is an agreed decision-making structure, for instance a Board representing all parties, and a way in which the Board communicates with all relevant members of the public. The larger co-management schemes have secretariats to assist with the work, or they may distribute resources among the parties to achieve the work needed. Some have sub-committees reporting to the Board, to specialise in planning and decision-making for important aspects of the work.

Bellamy et al (2002), in reviewing Australia’s integrated catchment management arrangements, noted four key features:

- The arrangements need to suit the local *context*, including the histories, the people, and the environmental issues.
- *Governance arrangements* need to include an effective *structure*, and effective *processes* to use that structure well. Particular challenges arise with horizontal linkages (the communication between different types of party to the arrangement, for instance local government with Indigenous people, voluntary groups and farmers, at Board level and ground level), and with vertical linkages (two-way communication between Board members and their many constituents; communication between the Board and state and national government). Resourcing is important for effective governance, and communication with the full set of participants.
- While the governance arrangements can deliver an effective collaboration, *informed* decision-making is necessary through good knowledge sources. These should include

science, and other forms of knowledge including local and traditional knowledge.

- A fifth feature, noted by Robinson *et al.* (2006) is that a collaborative management body should act *adaptively*. The parties should actively seek to improve both the management arrangements and their on-ground activities through cycles of planning, implementing, evaluating and adapting their strategies.

Opportunities in the Pacific

Co-management could be considered as an option in parts of the Pacific. Opportunities are:

- *Integrated catchment management* - holistic management of land and water resources over entire catchments, or a focus on particular issues within them (e.g. *water quality, fish stocks*).
- *Ground water management* – engage all relevant parties to manage surface land uses, urban development, polluting practices to avoid groundwater pollution, ensure adequate recharge and avoid over-extraction.
- *Manage water supplies* – engage landowners and industry with government to ensure purity of sources, quantity, infrastructure for drinking water, irrigation; share infrastructure development.
- *Manage land uses and rivers* - engage all relevant parties to avoid contamination of water supplies, contamination of marine areas and fisheries.

Concluding comments

Co-management is a strong and long-term form of public participation in environmental management. It works well where the parties need to resolve potentially conflicting rights and responsibilities towards a natural resource, and they have a commitment to work together. In other circumstances, alternative forms of

public participation and community engagement may be more suitable (see brief on *Public participation and community engagement for water resource management in the Pacific*).

References

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