THEME SECTION

4

Building capacity for local-level management through participatory technology development

by LILIAN GOREDEMA, IVAN BOND and RUSSELL TAYLOR

Introduction

This article describes how carefully managed partnerships between scientists and communities developed the technical skills and methods for communities to manage and use natural resources (especially wildlife), and simultaneously empowered these communities with knowledge, skills, confidence and information. This support for community-based management was the primary focus of the WWF's Natural Resource Management (NRM) Support to CAMPFIRE Project (known as the SupCamp project) during the period 1994-1998.[1]

Participatory technology development (PTD) is a framework for identifying, developing and implementing appropriate NRM methods with rural communities (Sutherland, Martin and Salmon, 1998). PTD combines scientific and indigenous technical knowledge (ITK), with the objective of enabling communities to participate more actively in managing their resources. The strength of the process lies in technical specialists, such as ecologists and economists, working in a structured manner with local communities.

At the outset, it was recognised that the methods developed had to be technically acceptable, and of practical value to the communities concerned. These tools were also intended to strengthen common property management regimes so that communities could benefit from and manage their wild resources responsibly, profitably and sustainably.

Box 1: Summary of the CAMPFIRE programme

- CAMPFIRE is a long-term programmatic approach to rural development that uses wildlife and other natural resources as a mechanism for promoting devolved rural institutions, improved governance and livelihoods.
- Its cornerstone is the devolution of rights to manage, use, dispose of and benefit from natural resources. It is premised on economic benefit, collective proprietorship and participation.
- Ideally, the unit of management, accountability and benefit should be the same, located at a sub-district level, i.e. the ward or village 'producer communities' and at a scale enabling the whole community to meet face-to-face.
- Programme leadership is provided by the CAMPFIRE Collaborative Group, a coalition of two government and three NGO support agencies, led by the political representation of CAMPFIRE districts through the CAMPFIRE Association.
- Although intended for all natural resources, the legal and financial reality was that the economic and financial success of CAMPFIRE was premised on high-valued trophy hunting safaris because the only agency that devolved user rights was the wildlife department.

[1] The Communal Areas Management Programme for Indigenous Resources.

The SupCamp team

Photo: the authors

The need for community-based NRM methods

In 1982, Zimbabwe's Parks and Wildlife Act of 1975 was amended to devolve the rights to manage, use and benefit from wildlife to communities. 'Appropriate Authority Status' was legally conferred on rural district councils (RDCs), with an understanding that RDCs would similarly devolve authority to communities at ward and village levels.[2,3] These legal and policy innovations enabled the CAMPFIRE programme (see Box 1) to move from concept to practice. Locally implemented management techniques were essential if community wildlife producers were to be genuinely effective proprietors and managers of wildlife and wild land. In 1992, the CAMPFIRE Collaborative Group asked WWF to help develop such techniques. This article describes how technical specialists worked closely with communities to develop appropriate techniques, using a PTD approach.

[2] In Zimbabwe, districts are comprised of wards, which are in turn made up of a number of villages. At the village level, representatives are elected to establish Ward Wildlife Management Committees (WWMCs).

[3] Athough the importance of legally empowered sub-district 'producer communities' was recognised early on, Zimbabwe's local government legislation precluded this.

The process of participatory technology development

'Professional' wildlife management often advocates 'scientific' methodologies that are too impractical and costly for communities to implement. Indeed, practical methods for managing wildlife in this context are often simply not available. The SupCamp project set out to identify what communities needed to manage their natural resources. Scientists then worked directly with local people to develop practical management tools.

One objective was to empower communities to manage their own natural resources, a right denied to them for many years. Another was the need to convince wildlife authorities and policy makers that communities could manage natural resources properly. CAMPFIRE aimed at a radical relocation of the power over wild resources from central government agencies to rural communities. Many officials, however, favoured centralisation or limited decentralisation. The survival of CAMPFIRE and its policy of devolution (Box 2) therefore required that communities take on genuine management responsibility.

Box 2: Decentralisation and devolution

According to Murphree (2000):
Decentralisation is the delegation of responsibility and limited authority to subordinate or dispersed units of hierarchial jurisdiction, which have a primary accountability upward to their superiors in the hierarchy.

Devolution involves the creation of relatively autonomous realms of authority, responsibility and entitlement, with a primary accountability downward to their own constituencies.

Pilot sites

The project worked with pilot communities from five wards in three districts in the Zambezi valley, selecting wards with different levels of resource endowment, population numbers and institutional structures. The aim was to test the robustness of the methods in varying ecological, social and economic settings. A pilot approach was used because effective testing of methods is expensive and requires the development of strong personal relationships and iterative learning over several years. Methods were only rolled out for wider application once they were properly tested.

Facilitating PTD

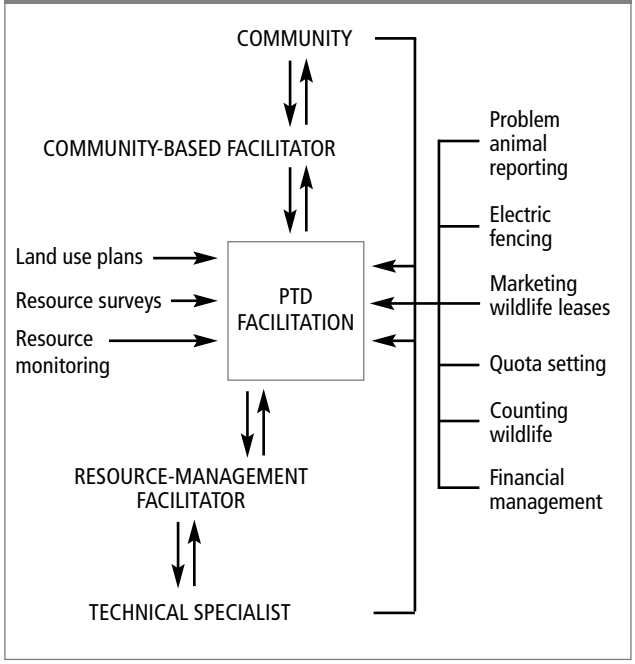
The first step in the PTD process was to use PRA techniques to facilitate communities to envision their future and identify key priorities, including environmental concerns, so that tools and aspirations could be matched. The priorities identified were:

- managing high-value trophy hunting;
- reducing conflicts between people and wildlife (especially elephants); and
- managing finances and projects arising from wildlife.

Cost-effective tools, matching the available human and financial resources to managerial priorities, were then developed. These methods needed to be rigorous and repeatable in a scientific sense, but sensitive to local managerial ability. Figure 1 shows how the PTD process was facilitated at each site.

At the village level, the project employed a resource-management facilitator (RMF). He or she helped the community to select their own community-based facilitator (CBF) who worked for the project part-time and was paid by the project. Both facilitators were resident at the field site for the three-year duration of the project. This combination of community and project facilitators provided in-depth information on community dynamics and aspirations, as well as feedback on whether the tools under development were being accepted and used. Local facilitators were particularly important for organising communities, for linking technical experts with the communities, and for providing continuity to local management processes. Making numerous household visits, each of the village RMFs and CBFs sought also to link the village/household levels into those tool development processes that were focused mostly at ward level.

Figure 1: Facilitating Participatory Technology Development



The bulk of the development and training work was done by the RMFs. The RMFs in turn received training in key technical and social skills from the technical specialists, as well as learning through experience. The well-qualified and experienced technical specialists guided the process, providing technical leadership, innovation and imparting values that emphasised devolution and participation. They also visited the communities regularly on a 'need to' basis, developed personal relationships with key community members, and worked to ensure acceptance of these methods at a higher policy level.

This structure helped to knit all the levels together, and to provide continuity and iteration. Care was taken to balance the logistical temptation to train a small élite within the community with the need for transparency and widespread participation. Consequently, the process involved meetings with the wider community, as well as with the elected wildlife committees, traditional leaders (including village headmen),

Facilitated PTD session

Photo: the authors

and the community's NRM employees such as community game guards and fence minders.

Results

The first phase of the project developed a number of NRM methods and tools at the different project sites. Subsequent phases of the project packaged these methods as user-friendly manuals and materials for wider delivery in a national training programme, targeted primarily at wildlife producer communities (see Goredema, Taylor and Bond, 2005). The twelve manuals and toolboxes in the WWF Wildlife Management Series (WMS) capture this generic knowledge (Box 3). Several of them were supplemented by trainer's manuals, simulation tools and games, and posters, which proved especially effective at 'leaving' knowledge in the community.

Community managers, employees and committees were given help in transforming the generic manuals into their own site-specific manuals, operational guidelines or posters. Having community leaders and employees write their own manuals increased uptake and commitment, and contributed to local technical capacity and institutional memory. Examples of local manuals include electric fence maintenance, counting wildlife, and financial management. In some districts and wards, problem animal reporters were trained using WMS Manual 1.

An example from one district shows how communities are able to adapt and improve systems. Initially, the community game guards and the ward wildlife committee acted as a conduit for reports on problem animals, and communicated these by radio to the district problem animal control unit

Box 3: The WWF Wildlife Management Series of guidelines and toolboxes

1. *Problem animal reporting*
2. *Electric fencing projects*
3. *Electric fence maintenance*
4. *Marketing wildlife leases*
5. *Managing safari hunting*
6. *Counting wildlife*
7. *Quota setting manual*
8. *Quota setting district toolbox*
9. *Project planning*
10. *Financial management manual*
11. *Financial management toolbox (including the CAMPFIRE Game)*
12. *Fire management*

All available as free downloads from
www.policy-powertools.org/related/campfire.html

some 100km away. Because this centralised system was too slow to respond the community negotiated a new strategy, working directly with the local safari operator to deal with problem animals and thus shortening response times and lowering the cost of reacting.

Over the past ten years another district council and its constituent ward communities have undertaken annual wildlife counts (WMS Manual 6), and used the results and additional data from hunting offtake records to set quotas (WMS Manuals 5 & 7 and *Quota Setting District Toolbox*). The council has then negotiated the marketing of the quota with the resident safari operator (Manual 4). These examples demonstrate both the long-term adoption of a set of complimentary tools, with continuity and even innovation after direct project support ended, and an understanding of the results linking investment in natural resources to benefit derived from them.

Positive outcomes

Effective PTD can give communities technical tools that they can sustain and adapt, with positive and lasting outcomes. PTD can also reinforce devolutionary empowerment. Not only does the consistent application of methods and tools such as quota setting demonstrate community capacity, but communities can also often accumulate more data for wildlife management decisions than does the central scientific authority. Local knowledge enables effective dialogue and argument, thus increasing the community's share of power. For example, the ability of communities to demonstrate the responsible application of quota setting to the wildlife authority has led to greater devolution of responsibility for quota setting to districts and communities. Another example is the WMS *Marketing Wildlife Leases* (Manual 4), which has been the platform from which RDCs have negotiated, on behalf of their constituent communities, substantially higher fees and stronger contracts with private sector safari operators.

There are other spin-off benefits. For example, the financial management toolbox, and especially the CAMPFIRE game (see article 7, this issue) stimulated great interest and transparency at community level, but it has also been tested by the Ministry of Education for incorporation into secondary school curricula. The quality of the tools has also led to demand-driven adoption (with adaptations) by communities throughout CAMPFIRE and elsewhere in southern Africa.

Lessons learnt: critical analyses

If PTD is well resourced, including effective technical leadership and a sufficient time period, it produces robust methods and good technical manuals. Village-based facilitators are the key to continuity and linkages between specialists and community. There is no substitute for extensive field work. Even with field-based facilitators, technical staff need to spend up to three-quarters of their time working with village communities in the field.

Local ownership of the process, retention of information and data, and the production of ward-level manuals, generates a moderate but important level of empowerment which complements the legal devolution of use rights. However, one of the long-recognised weaknesses of CAMPFIRE is that legal authority is vested in the RDC, so that implementation of PTD at sub-district levels requires the support of the political and executive hierarchy at district level. Being legally and technically stronger, RDCs may have benefited even more from these methods than did ward and village-level communities. Thus the approach sometimes failed to build strong co-management frameworks between district and sub-district institutions.

Developing the methods and tools required patience and time, and some methods, such as the CAMPFIRE game, needed further refinement at the end of the three years. Other methods and their accompanying guidelines, such as *Electric Fencing Projects* and *Electric Fence Maintenance* (Box 3), have become redundant over time as new, more cost-effective methods have been developed. Following the PTD phase, the project commenced materials development and training, including scaling up to district and national levels. This hampered field testing and wider application of methods developed later, such as fire management. Consequently, not all the tools have continued to be used, which

Playing the CAMPFIRE game

Photo: the authors

raises questions of timeliness, appropriateness and sustainability. Either fewer tools should be developed or more resources deployed to overcome delays and raised expectations following PTD-based field work.

The methods were mostly oriented to wildlife management, and could not easily be applied across different resources. This trade-off reflects the expertise of the project team and the fact that communities prioritised wildlife because it was both valuable to them and they had legal rights to use and benefit from it.

The assumption that robust local institutions, dynamic leadership and social cohesion are prerequisites for successful technical interventions is not necessarily valid. When some or all of these conditions are lacking, we have noticed that the technical intervention itself can contribute to institutional strengthening. We also noticed that the ability to develop capacity and the level of adoption differed between sites. Smaller groups tended to adopt methods and develop institutional memory more quickly. Adoption of a given method reflected its relevance in the eyes of the community, confirming that establishing convergence between community aspiration and methodological reform is essential. The project did not always achieve this congruence.

Conclusion

Community-based conservation and natural resource management in Africa reflects changing paradigms in the accomplishment of broader conservation and development goals. Old rules are being replaced by new rules, a process described as institutional change. In CBNRM programmes, this is enhanced by increasing economic benefit from, and strengthening proprietorship over, natural resources. In CAMPFIRE, both benefit and proprietorship have remained relatively weak thus far. With greater devolution we believe

a more rapid rate of adoption of the methods developed would have been possible. Nevertheless, through PTD, an innovative start to producing NRM tools has been made. Such tools not only empower communities to maximise their roles within the existing set of rules, they also allow the rules to be challenged. Under such conditions, necessary institutional change may be more likely. Having observed how important effective institutions are to sound resource management, a final observation is that (with the exception of financial and project management tools), PTD has not been applied to the critical matters of institutional development, transparency and governance.

CONTACT DETAILS
Lilian Goredema
WWF Southern Africa Regional Programme Office
PO Box CY1409
Causeway, Harare
Zimbabwe
Tel: + 263 4 252533/4
Email: Lgoredema@wwfsarpo.org

Ivan Bond
International Institute for Environment and Development
3 Endsleigh Street
London WC1H 0DD, UK
Tel: UK +44 20 7388 2117
Email:ivan.bond@iied.org

Russell Taylor
WWF Southern Africa Regional Programme Office
PO Box CY1409
Causeway, Harare
Zimbabwe
Tel: + 263 4 252533/4
Email: rtaylor@wwfsarpo.org

REFERENCES

Sutherland A., A. Martin and J. Salmon (1998) 'Recent experiences with participatory technology development in Africa: Practitioners' review.' *Natural Resource Perspectives* 25. London: ODI.

Goredema, L, R. D. Taylor, I. Bond and S. Vermeulen (2005) *Empowering rural communities to manage wildlife: lessons learned from WWF's Support to CAMPFIRE Project 1993–2002*. London: IIED.

Kothari, A., R.V. Anuradha and N. Pathak (1997) 'Community-based conservation issues and prospects.' Regional Workshop on Community-based Conservation: Policy and Practice. New Delhi.

Murphree, M. W. (2000) 'Boundaries and borders: the question of scale in the theory and practice of common property management.' Paper presented at the Eighth Biennial Conference of the International Association for the Study of Common Property, 31 May–4 June 2000. Bloomington, Indiana, USA.

Taylor, R. D. and I. Bond (2000) 'Participatory technology development for community-based wildlife management in Zimbabwe: the WWF Support to CAMPFIRE Project.' In A.E. Watson and G. Alpert (Eds) *Personal, Societal and Ecological Values of Wilderness*. Proceedings Sixth World Wilderness Congress, Bangalore, India, October 1998. Research, Management and Allocation, Vol II, Proc.RMRS-P-000. Ogden, UT: US Dept. Agriculture, Forest Service, Rocky Mountain Research Station.