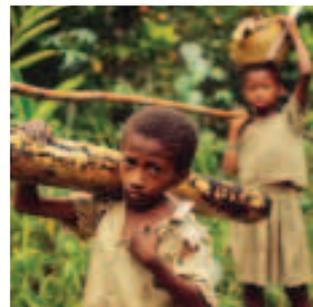


Changing Realities

Ecosystem
Approaches and
Sustainable Forest
Management



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A Question of Context

The last decade has seen the emergence of Ecosystem Approaches (EsA) to natural resource management. But where has this concept come from? How does it relate to the concept of Sustainable Forest Management (SFM)? And are EsA simply a set of vague principles or have their application actually been tested in practice?

This *arborvitæ* Special sets out to answer these questions and look at how EsA have been interpreted and impacted in different countries. The findings presented here are the summarized output of a study undertaken by IUCN, PROFOR and the World Bank to review and clarify the relationship between EsA and Sustainable Forest Management (SFM). A book based on this study will be published by Earthscan in early 2005.

We are using the concept 'Ecosystem Approaches' here as an umbrella term to cover recent innovative attempts to re-orient forestry management towards a broader, more collaborative approach. The term 'Ecosystem Approach', as defined by the Convention on Biological Diversity (CBD) is one such attempt, made within the context of international discussions on forests. Our objective here is to show that there are other interpretations of 'Ecosystem Approaches' that have been applied in a number of countries. The range of these practical applications represents a healthy diversity, as they have experimented with responses to the particular forest sector conditions in the countries concerned.



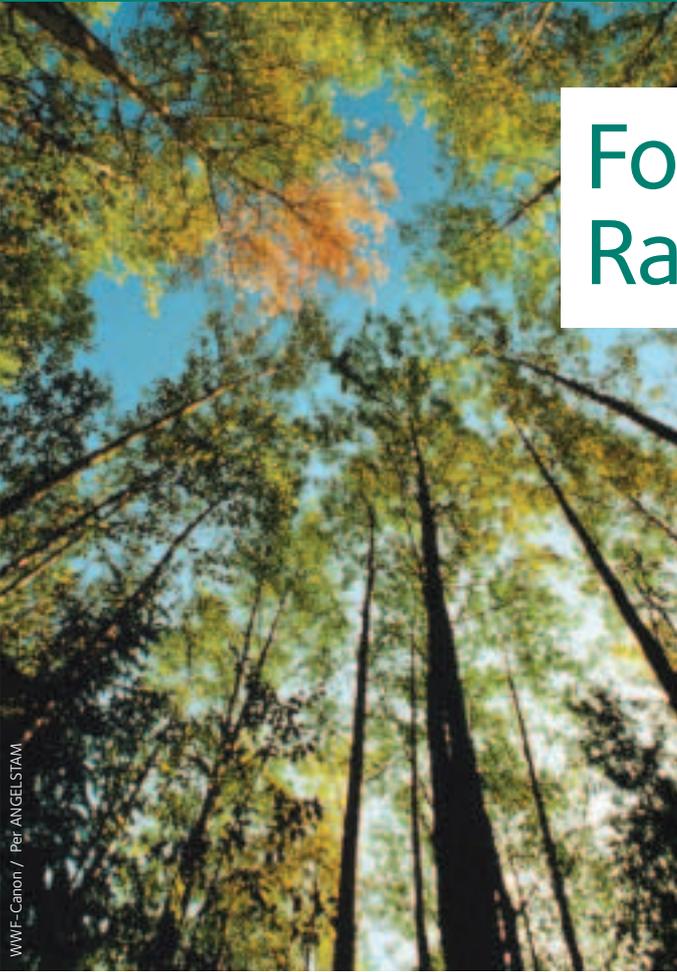
A Tale of Two Concepts

There is a perception within forestry circles that the Rio Summit spawned two parallel concepts for forest conservation and management. One has been that of Sustainable Forest Management, developing from classical forestry and pursued through the United Nations Forum on Forests (UNFF) and organizations such as FAO and ITTO. The other has been that of the Ecosystem Approach, developed primarily within the framework of the Convention on Biological Diversity (CBD). International fora on forests have discussed the two concepts and governments have committed to implementing them. Yet there is still a good deal of confusion about how the concepts relate to each other. This is more than just an esoteric problem of definitions. There is a risk that national agencies charged with implementing international commitments will get lost in pointless polemics.

To help clear this rather fuzzy picture, the CBD and the UNFF invited member governments and relevant organizations to provide clarification on the Ecosystem Approach and SFM concepts and develop proposals for their integration. The IUCN/PROFOR/World Bank study summarized here is a response to this call for clarity. It is based upon a preliminary discussion paper produced in February this year, an international workshop in May and regional and thematic case studies commissioned by IUCN.

The findings reveal an unexpected level of progress in the use of Ecosystem Approaches in many of the countries studied. Major shifts in forest management policy and practices have seen conventional, commodity production-oriented approaches replaced by more holistic, people-centred ecosystem-level approaches. In many ways, EsA practice has moved ahead of the theoretical discussions going on within international forest dialogues. Still, it is also clear that the adoption of EsA is not easy. There are real practical and institutional obstacles to its widespread application in the world's forests. ■

The study on which this *arborvitæ* special is based was led by Jeff Sayer, Stewart Maginnis, Michelle Laurie and Sandeep Sengupta. The following authors were responsible for the individual case studies: Per Angelstam, Horst Korn, Marine Kukurudza, Marius Lazdinis and Johan Törnblom (Europe case study), José Joaquín Campos Arce, Róger Villalobos and Bastiaan Louman (Central America case study), Ian Ferguson (Australia case study), Tim Forsyth (thematic study on the political ecology of Ecosystem Approaches), Bryan Finegan (thematic study on the role of norms and standards in Ecosystem Approaches), Richard W. Haynes, Robert C. Szaro and Dennis P. Dykstra (US Pacific Northwest case study), Sushil Saigal, Kinsuk Mitra and Pankaj Lal (India case study), Jeff Sayer, Cléto Ndikumagenge, Bruce Campbell and Leonard Usongo (Congo Basin case study), Gill Shepherd (Indonesia case study), Robert C. Szaro, Per Angelstam and Reidar Persson (thematic study on information needs for Ecosystem Approaches), Roger Sedjo (thematic study on the effects of macroeconomics on forest sustainability), and Victor Teplyakov and Elena Kopylova (Western Russia case study).



Forest Management: Raising Expectations

Most forest laws and institutions

evolved with relatively simple agendas. They were mainly driven by the need to protect timber and hunting 'rights' of royalty and other elites from the subsistence needs of peasants. Today's forestry institutions live in a very different world. Forest management now needs to integrate broader societal concerns and tackle conservation and sustainable use issues on a larger scale – using, for instance, multi-functional landscapes or eco-regions as the units of analysis and management. Similar trends towards integration and scaling up have also occurred in agricultural, grassland, coastal zone and marine management systems.

These and other recent trends in forest management, summarized in the box on this page, have created the need for management approaches that can take into account the greater complexities and trade-offs involved in today's world. EsA and, to a lesser degree, SFM can be considered two separate though related responses to these trends. ■

Recent Trends in Forest Management

Broadened objectives

At all scales, from the community to the global enterprise, foresters are being urged to deal with a much broader range of social and environmental issues than in the past. Forest management is moving from production objectives to multiple function objectives. Further, a patch of forest can now be claimed to have 'global values' that often do not correspond to the values perceived by local people. Society is making more explicit demands for longer temporal scales and broader spatial scales to be addressed in forest management.

Codifying good practice

Regulators, certifiers and civil society are developing criteria and indicators against which they can assess the 'quality' of forest management or the 'health' of forests. Governments want to apply norms and capture rents, local

people want to defend rights and assets and environmental groups want to foster best practice.

Recognition of pluralism

There is increasing recognition that different forests support different stakeholders and require different management systems. There is no single solution to fit all conditions. Also, it is becoming clear that many different systems of ownership and use of forests can qualify as sustainable.

Decentralization – devolution

As the locus of decision-making on some forest issues moves from the national to the global level, many governments are decentralizing control of forests and divesting themselves of forest assets. Responsibility for forests is being

placed in the hands of regional, municipal and local communities.

Globalization

Multi-national corporations, banks and trade regulations all have a strong impact on forest management and usually take it out of local control. Forest issues are also firmly in the global arena, as they are being included in a growing number of international fora.

Climate change

The uncertainties created by the potential impacts of different climate change scenarios have major implications for forestry laws and institutions. Eco-climatic zones are shifting by hundreds of kilometres, new pest and disease problems are emerging, and invasive weed species pose threats. Climate change adaptation will be the major challenge for all forest managers in the future.

EsA and SFM: Spot the Differences

An early milestone in the development of EsA was the public challenge to conventional forest management approaches that took place in the USA Pacific Northwest during the late 1980s, which resulted in the adoption by the US Forest Service of Ecosystem Management (see case study on the Pacific Northwest). This approach was basically a logical progression from SFM, with the incorporation of a broader set of management and participation objectives. As such, the Ecosystem Management approach was firmly anchored in a set of SFM tools and methodologies, as a practical, managerial approach.

Later the CBD adopted the term Ecosystem Approach as a set of general principles that can be applied in a wide range of circumstances. The CBD definition of the EsA is:

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.

An ecosystem approach is based on the application of appropriate scientific methodologies focussed on levels of biological organization, which encompasses the essential structures, processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of many ecosystems.

The CBD also developed a set of twelve principles for the Ecosystem Approach (see box opposite). It can be seen that EsA, as used within the CBD context, is not linked to any particular operational procedures and does not include clear targets or guidance for practical application. This lack of an operational framework has been one of the key criticisms levelled at EsA.

The principles behind Ecosystem Approaches include many elements found in the current wave of interest in learning organizations – knowledge management, adaptability and resilience. The table on the opposite page contrasts some of these principles with those of Sustainable Yield Forestry and Sustainable Forest Management, based on a review of the more general literature on SFM and the EsA. Some of the characterizations may seem arbitrary and will be contested, and the table is meant to serve as a starting point for discussion rather than as a definitive list or statement of consensus. ■

While Ecosystem Approaches and Sustainable Forest Management can be thought of as similar responses to the same set of underlying driving forces, there are important differences in the origins and philosophies of the two concepts. SFM has been developed and debated by forestry professionals, with their primary focus on producing goods and services from land under their control. SFM has been the object of extensive on-the-ground testing using criteria and indicators, including those developed for certification. There has been a short feedback loop and lots of opportunities for testing and learning. SFM is now firmly embedded in practical forest operations.

On the other hand, the EsA debate has been led by a more heterogeneous group of proponents more concerned with conservation. Thus the emergence of SFM came from a production agenda, while EsA was driven by a conservation agenda. As it has developed, EsA represents a compromise between a rich country 'precautionary' agenda and a developing country 'development' agenda where poverty reduction and economic growth

are predominant concerns. Perhaps its main significance is as a negotiated statement of the middle ground between conservation and development.

SFM is the latest in a line of forest management concepts that have sought to capture the notion of sustained flows of different forest goods and services and, more recently, to expand the range of these 'sustainable' goods and services. Thus the progression from Sustained Yield Forestry to Sustainable Forestry to Sustainable Forest Management has seen increased emphasis on a broader set of social and environmental goals. Many forestry institutions now practice various forms of SFM and a wide range of methods and tools are available that have been tested over time. The definition of the term SFM adopted by the FAO is:

The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

CBD's Twelve Principles of the Ecosystem Approach

- 1 The objectives of management of land, water and living resources are a matter of societal choice.
- 2 Management should be decentralized to the lowest appropriate level.
- 3 Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
- 4 Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:
 - (a) reduce those market distortions that adversely affect biological diversity;
 - (b) align incentives to promote biodiversity conservation and sustainable use;
 - (c) internalize costs and benefits in the given ecosystem to the extent feasible.
- 5 Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.
- 6 Ecosystems must be managed within the limits of their functioning.
- 7 The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.
- 8 Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.
- 9 Management must recognize that change is inevitable.
- 10 The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
- 11 The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.
- 12 The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

CRITERIA FOR COMPARISON	SUSTAINED YIELD FORESTRY	SUSTAINABLE FOREST MANAGEMENT	ECOSYSTEM APPROACHES
Primary concern...	...is on sustainable commodity production	...is on balancing conservation, production and use of forest goods and services	...is on balancing – and integrating – conservation and use of biological diversity
Tangibility of goals...	...is high – commodities.	...is high – products and services	...is low – equity and sustainability
Resource management objectives...	...are based on long-standing technocratic traditions and legal mandates, focused on production	...incorporate broader range of environmental and social objectives	...are a matter of societal choice
Control of resource management decisions...	...is generally centralized under responsible forest management agency	...is still usually centralized though other management options are emerging	...is decentralized to the lowest appropriate level
Hierarchical approach...	...is one of command and control – “we manage”	...is slightly more open – “we manage, you participate”	...is replaced by the concept of social learning – “we are learning together”
Spatial scale is considered...	...at site level only (i.e. management unit)	...primarily at site level, though with some consideration of externalities	...to incorporate the wider landscape –scale linkages
Knowledge is based on...	...scientific and technological knowledge	...expert knowledge, supplemented with broader stakeholder inputs	...a more balanced use of scientific and indigenous and local knowledge, innovations and practices
Sectoral approach is...	...narrowly focused	...broadly focused	...cross-sectoral
Assumes...	...predictability and stability	...adaptive management – but within defined limits	...need for resilience, anticipation of change
Associated tools...	...are those of classic silviculture	...include codes of forestry practices, criteria and indicators, etc.	...are not yet available. EsA have no case law and need practical testing



Forest debates make headlines in Australia

gains for one side translated as losses for the other. Things came to a head in 1992 after a massive public protest over a politically motivated renewal of a wood chip export license. Both the Commonwealth and State governments recognized that this type of political posturing was counterproductive to all stakeholder interests. In response the government introduced the concept of negotiated Regional Forest Agreements. This process introduced many elements of the EsA concept, seeking a balance between conservation and forest production and attempting to ensure broad public participation in the decision-making. Regional Forest Agreements were developed across the country, reflecting EsA principles in their codes of forest practice, management plans, sustainable yield calculations and environmental management systems. The same process also resulted in a National Conservation Reserve system, that includes a wider range of forest types and a larger and more consistent system than had existed previously. While the Regional Forest Agreements have also had their weaknesses, particularly in achieving resource security for wood-using industries and in taking account of indigenous heritage concerns, they represent a major step towards a more rational, balanced approach to forest management. ■

Australia: Politics and Polarity

The debate on forest management in Australia has been shaped by simplistic media treatment that has led to two polarizations: State governments versus the Commonwealth (Central) government and rural forest users versus largely urban conservationists. The heat of the forest dialogues has also been turned up by strong national stakeholder groups (including the forest industry, unions, landholder and environmental NGOs) and by Commonwealth and State governments

intent on making political capital from the issues. Typically the Commonwealth government’s position has been that a change in tenure from State Forest to National Park is the sole route to achieving effective conservation, while the State governments have argued that retaining State Forests is the only way to maintain wood production and dependent industries and employment.

This polarized debate has been termed one of ‘single tenure-single use’, with any

USA Pacific Northwest: Old Growth and Owls

Here is an excellent example of how a more demanding public, seeking broader forest benefits, has led managers of publicly-owned forests to adopt Ecosystem Approaches. The rapidly urbanizing society of the Pacific Northwest (PNW), whose ranks have swelled in the last few decades by immigrants attracted by the area’s environment and economy, has quite different expectations of forest functions to those of the resource-dependent rural communities. Landscape beauty and recreational opportunities are top priorities for these urban populations, and forest managers have had to respond to these demands by providing an acceptable mix of commodity production, amenity use, and environmental and biodiversity protection. Balance has had to be sought between addressing conservation concerns (including the endangered northern spotted owl,

dependent on the area’s old growth forests) and employment and other economic concerns.

The previous regime used in managing publicly-owned forests until the 1980s, was dominated by clearcutting, burning and replanting, with timber extraction as a primary objective (although within a multiple-use context). Strong public reactions to the visual and environmental impacts of this system, and the ensuing conflicts between the different stakeholder groups in the ‘jobs versus owls’ debate, resulted in the PNW becoming a test-bed for the development of operational ecosystem management, as the Forest Service sought ways of building consensus and defusing conflict. Similar Ecosystem Approaches have evolved elsewhere in North America but nowhere was the process as controversial and contentious as in the PNW.

The Ecosystem Approach concept is reflected in the area’s natural resource management plans developed during the 1990s, that now focus on ‘old-growth’ and multi-resource ecosystem management to provide habitat for threatened and endangered species (notably the northern spotted owl and wild salmon), protect riparian zones and promote biodiversity. State regulations for forest management also include many of the principles behind the ecosystem approach. It is particularly interesting that the Northwest Forest Plan, developed in 1993 as a long-term policy for managing northern spotted owl habitat, includes the designation of Adaptive Management Areas to allow for the testing and modification of conservation management assumptions and approaches. ■

India: Beyond Joint Forest Management



Forest produce is a vital component of rural livelihoods in India

The watershed event in the development of Ecosystem Approaches in India was the 1988 U-turn in government policy that saw commercial timber interests subordinated to conservation and local communities' needs as the primary objectives of forest management. The contrasting 'before' and 'after' policy statements included in the box below reflect this radical change.

Conflicts between local communities and the forest bureaucracy, and public protests against the earlier policy contributed to this important re-orientation of forest policy. Based on this new policy, and the encouraging results from some pioneering experiments in community-based forest management, the government started the ambitious Joint Forest Management (JFM) programme that shares many of the same principles as Ecosystem Approaches.

Over the past two decades, JFM has emerged as a major forest management strategy in the country and by September 2003 there were officially 84,632 JFM groups protecting and managing over 17 million hectares of state forest lands. The positive impacts of the JFM programme have included an improvement in the relationship between the Forest Department staff and local communities, increased income for participating communities and an improvement in the condition of forests. On the other hand, JFM has had several shortcomings, including a lack of firm legal basis, domination of JFM groups by the village elite, inequitable sharing of benefits within communities, and in some cases the programme has led to inter-community

conflicts. A key challenge has also been the limited empowerment of the JFM groups in real terms and the de facto control that the Forest Department still retains over them. Despite these problems, JFM still represents a significant improvement in forest management.

Alongside JFM, other initiatives have also promoted Ecosystem Approaches, including the Ecodevelopment programme and People's Protected Areas, both of which seek to address the conflicts between conservation and communities in and around protected areas. The Sustainable Forest Management work of the Indian Institute of Forest Management, which began in 1998 and the current preparation of the National Biodiversity Strategy and Action Plan, which

A New Science

The science of forest management needs to change quickly, to keep up with the evolving use of Ecosystem Approaches. Forest managers are now confronted with stakeholders demanding a broader range of goods and services, and a voice in decision-making. Public debates on forest use are becoming increasingly polarized, often causing value-laden conflicts. Science needs to be able to provide analysis and technologies based on multidisciplinary studies (including social and political dimensions) at multiple scales of space and time. Science should also serve to inform decisions and provide the basis for adaptive management. Finally, science has an important role to play in reducing polarity and conflict by quantifying social demands, weighing up trade-offs and presenting alternative choices and consequences.

strongly advocates the Ecosystem Approach, are further landmarks on the road to acceptance of this approach in India. The challenge is now to effectively coordinate these innovations and put into practice the new guidelines and recommendations on Ecosystem Approaches. ■

Local Communities: Helping or Hindering Forest Management?

The evolution of Ecosystem Approaches in India has entailed a major turnaround in the government's stance on the role of communities in forest conservation and management. The following extract from the National Commission on Agriculture, 1976, reveals a clear prejudice against local people's forest use:

"Free supply of forest produce to the rural population and their rights and privileges has brought destruction to the forest and so it is necessary to reverse the process. The rural people have not contributed much towards the maintenance or regeneration of the forests."

Contrast this with the following statement from the Tenth Five Year Plan (2002-2007):

"A broader livelihood approach, covering productive capacity, institutional and legal structures, market access and tenure, must be adopted that puts forests into the broader context of rural development. No strategy to conserve the forest eco-system would be successful unless the basic needs of the society are met."

Central America: Changing a Relationship

Historically, the relationship between people and forests in Central America has been a difficult one. Local people have seen little benefit in forest conservation, as land and property rights have been unequally distributed, forest landscapes have been highly fragmented and forest management sizes have been small. The region's high levels of poverty and population growth, small and stagnating economies and weak public institutions present additional barriers to achieving sustainable forestry.

Yet, in the face of these huge challenges, there are encouraging signs of progress. At the end of the 1980s the International Tropical Timber Organization reported that there were no good examples of sound forest management in the region, while today, the Forest Stewardship Council records show 691,346 hectares of certified forest in 42 units of natural and planted forests, including the community concessions of the Maya Biosphere Reserve. This move towards sustainability has been driven not by the region's forest industries, but by its research institutes. In particular, the Tropical Agricultural Research and Higher Education Center (CATIE) has spearheaded research and development for sustainable forest management based on an Ecosystem Approach. The academic attention on sustainable forest management and Ecosystem Approach principles was then taken up by governments and other actors throughout the region. The Ecosystem Approach found strong support from international donors and began to emerge in new policies and projects. The 1990s saw many Integrated Conservation and Development projects, which proved the viability of small-scale sustainable forest management and showed the need for local participation and benefits.

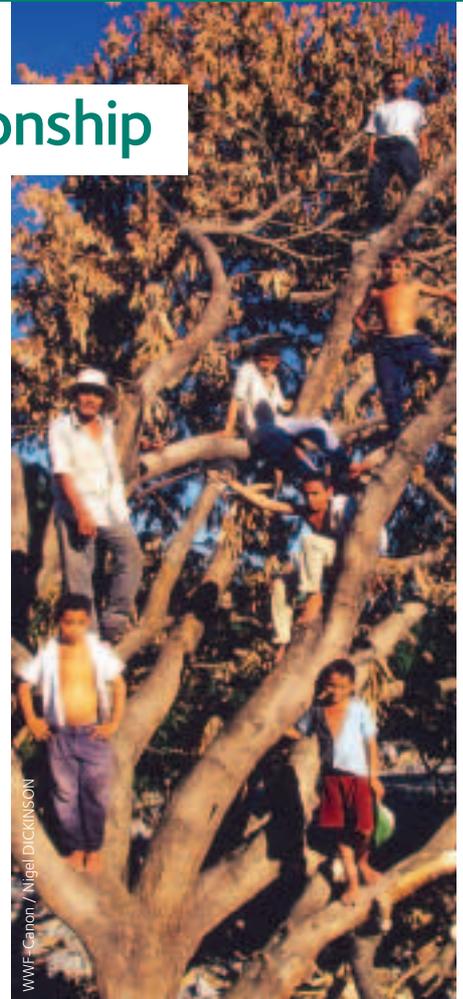
At the same time, there has been a gradual shift in how the region's peoples and governments view forests, following several natural disaster crises. Hurricane Mitch in particular revealed the link between climate, natural resources and people and forced Central American governments and international cooperation agencies to re-orient their development strategies to address social and ecological vulnerability, transparency, participation and local development. These natural disasters also emphasized the important role of forests in reducing and mitigating the impacts of

such events and helped to promote the development of integrated watershed management policies.

An important example of government reform, favouring an Ecosystem Approach, is the recent decentralization and reorientation of natural resource management in Costa Rica, which has put eco-regions as the basis for the country's national conservation area network.

The growing awareness among Central American states and societies that forest systems produce significant goods and services has helped reduce the historical incentives for forest conversion, and this has been the key to creating an enabling environment for Ecosystem Approaches. Important reforms and innovations in the region, that have further promoted Ecosystem Approaches, have included:

- modernization of central government institutions (as in Costa Rica);
- regional integration among the countries;
- strengthening of municipal governments, particularly in Honduras and Nicaragua;
- establishment of forestry producer organizations (particularly in Costa Rica and Guatemala) and the mobilization of civil society at large;
- establishment of community forestry concessions in Guatemala and the development of financial mechanisms that value forest ecosystem services, particularly in Costa Rica; and
- eco-regional approaches for the sustainable management of natural resources, such as the Mesoamerican Biological Corridor.



In the branches of a mango tree, uprooted by Hurricane Mitch in Honduras

For Ecosystem Approaches to become widely established in the region, there is a need for further institutional and policy changes. In particular, forest producers (especially small- and medium-scale ones) will need access to technical and financial resources and clarity over property and use rights for forests before they can participate fully in sustainable forest management and conservation. ■

Success Stories from Central America

The formalized participation of communities in forest management began in Honduras back in 1974 with the creation of the Social Forestry System. With support from international aid agencies, several social forestry projects in the country showed success in establishing sound forest management, enabling local people to share the economic benefits, and helping contain expansion of the agricultural frontier.

Community forestry concessions in northern Guatemala had similar success in linking conservation with socio-economic development. These concessions generated local jobs, improved community infrastructure and strengthened technical, organizational and administrative capacities, while also helping to prevent agricultural encroachment. The first of these concessions was created in the Maya Biosphere Reserve in El Petén.

Congo Basin: EsA Progress – Persistent but Patchy

The history of forest management in the Congo Basin did not provide a promising start for the development of ecosystem approaches. In the 1970s and early '80s, most forest management and conservation efforts went into either regulating logging concessions or establishing and protecting parks and reserves. This situation was in many ways the antithesis of ecosystem management, as local communities were largely excluded from forest governance, forest use was sharply segregated into protection and production zones and the central government controlled everything.

Even in the late 1980s, international donor support for forest management in the region paid very little attention to social or environmental objectives. The Tropical Forestry Action Plan (TFAP) for Cameroon, prepared with donor support, was rooted in a vision of sophisticated large-scale concession management for international markets with silvicultural treatments that would greatly increase future yields of commercial timber. The TFAP contained the implicit assumption that environmental benefits would be inevitable by-products of good forestry practice. The Cameroon TFAP was vigorously attacked by environmental NGOs for its pro-logging stance and its failure to address the needs of conservation and forest-dependent communities. The debate that followed influenced the development of a new and progressive forestry law in 1994, which contains many innovations that favour the interests of forest people and biodiversity.

Cameroon remains the main focus of innovation in forestry in the region, as intermittent periods of civil conflict in the Democratic Republic of Congo, Congo-Brazzaville and the Central African Republic have inhibited similar innovations in these countries. However, despite the civil unrest and declining or stagnant economies in the region, a raft of recent policy decisions and international commitments by the governments is pointing towards a more inclusive approach to forests. The preamble to the Congolese forest law of 2002, for example, refers to “forest ecosystems”, and the legal frameworks in all countries of the Congo Basin now show considerable progress towards the integration of ecosystem approach objectives. Progress on the ground is still very patchy, though it is still early days since these legal commitments have been made. Economic



WWF-Canon / Michel GUNTHER

Forest road, Gabon

difficulties across the region mean that their forest management capacities are stretched to the limit and innovation is difficult.

Still, there are a few success stories for forest ecosystem management in the region. One example is the work of the Wildlife Conservation Society (WCS) in and around the concession of the Congolaise Industrielle des Bois in northern Congo. Significant steps have been taken by the concessionaires, under pressure from environmental NGOs, towards sustainable forest management, including the provision of livelihood support for the resident BaAka pygmy communities and the monitoring of

large mammal populations in the area. Other successful efforts include the work of WWF in the Dzangha-Sangha region of the Central African Republic and the work of WCS in the Ituri Forest of the Democratic Republic of Congo. However, these examples all come from remote, sparsely populated and relatively inaccessible areas of the Congo Basin. The real challenge for Ecosystem Approaches lies in achieving success in the more densely settled and accessible forest areas especially near the coast and the main communication axes. Maintaining large mammal populations in such densely settled areas will remain a particular challenge. ■

Do Economic Shocks Rock the Forest?

Do macroeconomic policies disrupt attempts at ecosystem management?

There has been growing concern over the potential negative impact of corrective macroeconomic policies, associated with structural adjustment programmes, on developing country forests and biodiversity. The shock of these policies tends to reduce domestic incomes, depreciate exchange rates and encourage natural resource exports. In the forestry sector, the impacts could include a reduction in the national forest conservation and production budgets, shedding of civil service forest-related jobs, and an increase in the competitiveness of forest product exports. The potential is certainly there for increased pressure on forest resources. But, an examination of the literature reveals that this negative impact is not inevitable. While forest-rich countries may experience increased logging and forest conversion because of structural adjustment policies, countries with fewer forest resources may see little or no impact. However, since the nature of the impacts is difficult to predict – and hard to analyze in the crisis of restructuring – there is a need for some anticipatory analytical work in countries with important forest resources, prior to the implementation of adjustment programmes.

Russia: Gaining Momentum

The development of Ecosystem Approaches in Russia has seen some drastic alterations over the last two decades. The 'command and control' approach to forest management, firmly in place up until the early 1990s, was a classic version of SFM that focused on timber production and conservation, while largely ignoring any social concerns. Following the country's transition to a market economy, the collapse of this state-run system and the privatization of most industrial forest enterprises created a situation of great uncertainty. Harvesting volumes dropped sharply, social tensions erupted and illegal forestry activities soared. Recent years have seen some serious attempts at reorganizing the forest sector to achieve broader-based and more sustainable approaches. This has been most evident in the north-western federal district and the Republic of Karelia in particular.

Karelia's forests cover more than half of the Republic's territory and timber exports are an important contributor to the area's economy. Currently, 12 per cent of Karelia's forests are set aside as nature reserves, national parks and wilderness areas. Management policies for the remaining forest areas are now attempting to curb excessive felling while maximizing value added by promoting the exportation of processed timber. The citizens of Karelia are becoming more aware of the need for sustainably managed forests, as the basis for better employment opportunities and better livelihoods.

The potential impact of public debate, seen in other country case studies as a

driver of Ecosystem Approaches, is also evident here. One such debate started in the 1990s and centred on the fate of the virgin taiga forests at the border of Karelia (western Russia) and Finland. Local authorities and environmental groups took strongly opposing positions, national and international stakeholders became involved and a boycott was taken up against timber shipments from these forests. A productive dialogue was finally established and, with funds from the European Union and the Russian Federation budget, national parks were established to protect the forests.

Model forests have been established in several parts of Russia and these espouse the principles of Ecosystem Approaches. However, these successes are the exception to the norm and examples of integration of environmental and social concerns within Russian forest management regimes are still hard to find. The upcoming Northern Eurasia Forest Law Enforcement and Governance (FLEG) process presents Russia with an opportunity to consider how it can scale up some of the lessons learned from the successful applications of Ecosystem Approaches. ■



Mountain Taiga Reserve, Russia

The Politics of Ecosystem Approaches

Forest policies rarely develop in a vacuum – they are often tied to other political objectives. Governments may depoliticize controversial strategies by ascribing these decisions to the supposedly neutral 'scientific' world of forest agencies. The designation of protected forest areas, for example, may reflect a government's concerns about security in border regions or the control of insurgent populations.

Of course, forest agencies are political animals themselves and are often shaped by their political beginnings. Many developing country forest agencies were established during colonial times and their objectives were those of the colonial authorities. These objectives often saw forest ecosystems

simplified into single-function 'timber farms' and involved very limited social consultation. Re-orientation of forest departments towards Ecosystem Approaches challenges the attitudes behind these practices, as the agencies need to start acknowledging alternative forms of forest management and issues such as land tenure, citizenship and minority rights. To achieve this, forest departments will need help in strengthening their collaborative capacities and broadening their knowledge base and the skill-mix of their staff. These problems emphasize the need to diversify forest governance systems and go beyond a centralized, top-down, government-dominated approach.

Conclusions

The most important conclusion from our case studies is that many of the issues that the EsA principles highlight are being addressed on the ground in the countries and regions that we examined. The sort of thinking that led to the EsA principles is alive and well in the real world and has inspired much of the reform of policies and practices of forest management that has occurred in the past decade. And, while there are clear differences between EsA and the more traditional applications of SFM, many of the principles of EsA have already been incorporated into the more holistic SFM experiences. The real value of EsA therefore is not as a competing concept to SFM but as a set of general guidelines that help to enrich the debate and provide a broad conceptual framework for resource management.

Some surprising similarities emerge from our case studies. It is clear, for example, that the spark for developing Ecosystem Approaches often comes from adverse public reactions to inappropriate forest management policies. The impact of public pressure on governments and especially on large scale forestry corporations can not be underestimated. Another common thread running through the case studies is the need for fundamental shifts within forest



WWF-Canon / Credit: MKAAIL KAVANAGH

Forest guard discusses conservation proposals with Iban men, Malaysia

agencies. Forest management objectives and forest managers' skills and attitudes all need to change as the role of forest departments changes from an expert-driven, enforcement-oriented one to a collaborative, consensus-building one. Forest agencies of the future will have to provide the following services:

- Facilitating a dialogue among all forest stakeholders to establish a vision for their forests and to determine the limits within which forest owners and managers may operate;
- Establishing and maintaining multiple-resource databases on forests to detect emerging trends, threats and issues and

to allow for adaptive management (such as in the case of climate change);

- Providing a problem solving research capacity to deal with emerging problems of pests and diseases and to determine management requirements for specific targets (such as conservation of endangered species);
- Providing the overview, analysis and verification needed to make environmental service payments effective in supporting the production of the public good values of forests
- Developing, reviewing and enforcing regulations, and recommending any necessary adaptation of these regulations. ■

The Holy Grail of Forestry?

The principles of Ecosystem Approaches have emerged from an international process and are intended to provide general guidance on big-picture issues. They are ideals which one should strive to attain and are not, and were never intended to be, a management prescription. Recent attempts to codify best practice in the context of international negotiations on forests run the danger of downplaying the role of the forest manager's expertise and forcing us into a one-size fits all approach to forestry. This would be a serious mistake. Good forest management must be based on detailed local knowledge – knowledge not just of the forest and its ecology but of the people who use the forest and their economic and social needs.

Criteria and indicators, codes of practice and sets of principles are useful in providing a framework for debate and in setting the general context for management. But we should avoid being drawn into the quest for a single best model for forest management that can be applied everywhere. Neither SFM nor Ecosystem Approaches should be treated as the 'Holy Grail' of forestry. Criteria, principles and indicators should support and enrich the work of the forest managers, not lock them into a cookie-cutter approach to forests. Forest management approaches should be driven primarily by the problems and opportunities as they exist in the forests – i.e. from the bottom up.



WWF-Canon / Michel GUNTHER

From Concept to Practice

arborvitæ

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To help bridge the gap between the international debate on EsA and the provision of practical guidelines for incorporating these approaches into practical forest management we offer the following ten tenets of good EsA practice:

Implementing Ecosystem Approaches: Ten Tenets of Good Practice

- 1 There is no single Ecosystem Approach, but multiple approaches – Ecosystem Approaches will need to be adapted and applied pragmatically in each situation.
- 2 People are part of ecosystems – jobs, livelihoods and wealth generation are as important as the birds and the bunnies.
- 3 All environmental management must be adaptable: we manage, learn, adapt and manage again.
- 4 Ecosystem Approaches require tools that measure the performance of the whole system – both environmental gains and people’s livelihood improvements.
- 5 Clear and defensible land rights, democratic institutions and the rule of law are important elements of an enabling environment for Ecosystem Approaches.
- 6 Forestry professionals must be eclectic, have excellent inter-personal skills, must stand back from the fray and earn the respect of all stakeholder groups.
- 7 Science does not provide the answers but it helps us to learn from mistakes, adapt and explore innovative options.
- 8 The soft side of Ecosystem Approaches is more important than the hard side. These approaches are not just another formula – they entail a new attitude, approach, set of competencies and a broadened range of skills.
- 9 Many elements of Ecosystem Approaches are not directly under the control of forest departments, so these agencies have to learn to exert influence and broker deals.
- 10 Ecosystem Approaches will not make conflicts disappear; win-win situations remain rare. Ecosystem Approaches make trade-offs more explicit but there will always be winners and losers. Ecosystem Approaches can help reduce the power differentials between stakeholders and lead to more equitable outcomes, ensuring that society in general and specific stakeholder groups in particular are winning more and losing less.

The difficulty lies not so much in developing new ideas, as in escaping from the old ones
John Maynard Keynes

