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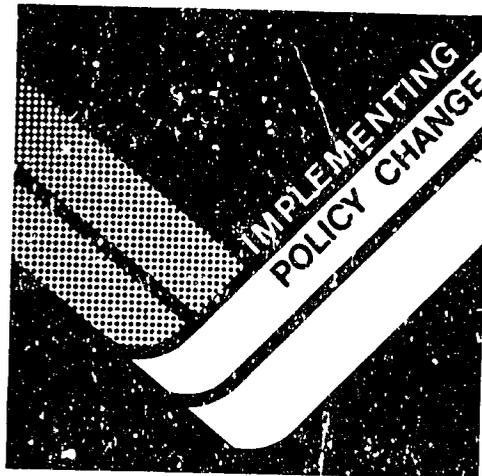
**IMPLEMENTING NATURAL RESOURCES MANAGEMENT  
POLICY IN AFRICA: AN ANNOTATED BIBLIOGRAPHY**

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This bibliography presents a selected, annotated set of sources that addresses natural resources management (NRM) policy and implementation issues with an emphasis on Africa. Development policy implementation in Africa is a challenge in all sectors. Several features of NRM policies, however, pose particular difficulties from an implementation perspective. These include: the underlying contradiction between sustainable NRM and the prevailing economic development paradigm, the short-term nature of NRM costs versus the long-term nature of the benefits, the proscriptive orientation embodied in NRM regulations and the opportunities for corruption present in selective enforcement, and the tendency for NRM issues to generate conflict.

The sources in this bibliography describe, analyze, and/or suggest ways of dealing with these characteristics of NRM policies. The majority of sources included here were the subject of a document and literature synthesis conducted for A.I.D.'s Africa Bureau, Office of Analysis, Research, and Technical Support (AFR/ARTS/FARA), funded through a buy-in to the Implementing Policy Change Project.<sup>1</sup> The bibliography can be seen as a companion piece to the study report, although the list of sources is not exactly the same. Some sources have been added subsequent to the completion of the ARTS/FARA study, and others deleted.

The annotations were written with two emphases in mind. First, they summarize the contents of the sources and provide examples of the arguments, findings, and conclusions of the authors. Second, they highlight the particular points and recommendations made of interest to developing country NRM policy makers and implementors, and international donor agency staff who design and oversee NRM policy reform programs and projects.

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<sup>1</sup> Brinkerhoff, Derick W., James D. Gage, and Jo Anne Yeager. 1992. "Implementing Natural Resources Management Policy in Africa: A Document and Literature Review." Washington, DC: U.S. Agency for International Development. Implementing Policy Change Project, April.

## BIBLIOGRAPHY

- Adeyoju, S. Kolade. 1976. "A Study of Forest Administration Problems in Six Selected African Countries." Rome: Food and Agriculture Organization of the United Nations.
- Ahmed, Alawiyya Jamal Mohammed. 1990. "Environmental Education in Sudan: The Need for New Content and Methods." In Rodger Yeager, ed. Conservation for Development in Botswana, Kenya, Somalia, Sudan. Hanover: New Hampshire: African-Caribbean Institute, pp. 59-64.
- Alberti, Marina and Jonathan D. Parker. 1991. "Indices of Environmental Quality: The Search for Credible Measures." Environment Impact Assessment Review, Vol. 11, pp. 95-101.
- Aluma, John, et al 1989. Settlement in Forest Reserves, Game Reserves and National Parks in Uganda. Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No. 98.
- Anderson, Dennis 1987. The Economics of Afforestation: A Case Study in Africa. Washington, DC: World Bank, Occasional Paper No. 1/New Series.
- Anderson, Dennis and R. Grove, eds. 1987. Conservation in Africa. Peoples, Policies and Practices. Cambridge: Cambridge University Press.
- Associates in Rural Development. 1989. Options for Promoting User-Based Governance of Sahelian Renewable Natural Resources. Bamako, Mali: Paper presented at the CILSS-sponsored conference, Regional Encounter for a Better Sociological Balance in the Rural Sahel, March 13-20.
- Associates in Rural Development. 1991. A Conceptual Approach to the Conservation & Management of Natural Forests in Sub-Saharan Africa. Washington, DC: U.S. Agency for International Development. Office of Technical Resources, Bureau for Africa Publication Series No. 91 - 4.

- Atta Moula, Mutasim E. 1990. "The Role of Traditional Institutions in Managing the Forest Resource: A Sudan Case." In Rodger Yeager, ed. Conservation for Development in Botswana, Kenya, Somalia, Sudan. Hanover, NH: African-Caribbean Institute, pp. 13-20.
- Ayanda, J.O. 1988. "Incorporating Environmental Impact Assessment in the Nigerian Planning Process: Need and Procedure." Third World Policy Review, Vol. 10, No.(1), 1988, pp. 51-64.
- Bailey, Robert C., Serge Bahuchet and Barry Hewlett. 1990. "Development in Central African Rain Forest: Concern for Forest Peoples." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de l'Quest, November 5-9.
- Baker, Russell. 1988. "Public Administration and Natural Resources Management in Developing Countries." Society of Public and Environmental Affairs (SPEA) Review. Vol. 10, No. 1, Fall 1988, pp. 3-7.
- Barrows, Richard and Michael Roth. 1989. Land Tenure and Investment in African Agriculture: Theory and Evidence. Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No. 136.
- Blackwell, Jonathan M., Roger N. Goodwillie, and Richard Webb. 1991. Environment and Development in Africa: Selected Case Studies. Washington, DC: World Bank, Economic Development Institute, Policy Case Series No. 6.
- Brinkerhoff, Derick W. and Arthur A. Goldsmith, eds. 1990. Institutional Sustainability in Agriculture and Rural Development: A Global Perspective. New York: Praeger.
- Brown, Michael, Ruth Buckley, Alex Singer and Leslie Dawson. 1990. Buffer Zone Management in Africa: Searching for Innovative Ways to Satisfy Human Needs and Conservation Objectives. Washington, DC: PVO-NGO/NRMS Project.
- Bruce, John W. and Louise Fortmann. 1989. Agroforestry: Tenure and Incentives. Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No. 135.

- Bruce, John W., Mark Freudenberger, and Gene Summers. 1990. Tenure Constraints and Opportunities in Natural Resource Management in The Gambia. Madison: University of Wisconsin, Land Tenure Center.
- Catterson, Thomas M. 1988. "Mechanisms to Enhance Popular Participation." In Francois Falloux and Aleki Mukendi, eds. Desertification Control and Renewable Resource Management in the Sahelian and Sudanian Zones of West Africa. Washington, DC: World Bank, Technical Paper No. 70, pp. 28-42.
- Cernea, Michael M., ed. 1985. Putting People First: Sociological Variables in Rural Development. New York: Oxford University Press.
- Christophersen, Kjell A. 1988. An Economic Approach to Arid Forestry Project Design: Experience from Sahelian Countries. Washington, DC: Energy/Development International.
- Cohen, Andrew, ed. 1991. Report on the First International Conference on the Conservation and Biodiversity of Lake Tanganyika. Bujumbura, Burundi: U.S. Agency for International Development. March 11-13.
- Davis, Ted J. and Isabelle A. Schirmer, eds. 1987. Sustainability Issues in Agricultural Development: Proceedings of the Seventh Agricultural Sector Symposium. Washington, DC: World Bank.
- Dejene, Alemneh and Jose Olivares. 1991. Integrating Environmental Issues into a Strategy for Sustainable Agricultural Development: The Case of Mozambique. Washington, DC: World Bank, Technical Paper No. 146.
- Dorm-Adzobu, Clement, Okyeame Ampadu-Agyei, and Peter G. Veit. 1991a. Community Institutions in Resource Management: Agroforestry by Mobisquads In Ghana. Washington, DC; World Resources Institute, From the Ground up Case Study No. 3, March.

- Dorm-Adzodbu, Clement, Okyeame Ampadu-Agyei, and Peter G. Veit. 1991b. Religious Beliefs and Environmental Protection: The Malshegu Sacred Grove in Northern Ghana. Washington, DC: World Resources Institute, From The Ground Up Case Study No. 4, July.
- Elbow, Kent. 1991. "Popular Participation in the Management of Natural Resources: Lessons From the Baban Rafi Forest, Niger." Madison: University of Wisconsin, Land Tenure Center. Unpublished dissertation proposal.
- Elbow, Kent and Alain Rochegude. 1990. A Layperson's Guide to the Forest Codes of Niger, Mali, and Senegal. Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No 139.
- Falloux, Francois and Alain Rochegude. 1988. "Land Tenure as a Tool for Rational Resource Management." In Francois Falloux and Aleki Mukendi, eds. Desertification Control and Renewable Resource Management in the Sahelian and Sudanian Zones of West Africa. Washington, DC: World Bank, Technical Paper No. 70, pp 10-28.
- Falloux, Francois and Aleki Mukendi, eds. 1988. Desertification Control and Renewable Resource Management in the Sahelian and Sudanian Zones of West Africa. Washington, DC: World Bank, Technical Paper No. 70.
- Falloux, Francois, Lee Talbot, and Jeri Larson. 1991. Progress and Next Steps for National Environmental Action Plans in Africa. Washington, DC: The World Bank.
- Freudenberger, Karen Schoonmaker. 1991. "Mbegue: The Disingenuous Destruction of a Sahelian Forest" Bulletin of the Institute for Development Anthropology, Vol. 9, No. 2, pp. 2-12.
- Fultang, Benedict. 1990. "The Efficiency of the Forestry Taxation System in Cameroon." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de l'Ouest, November 5-9.
- Gambia, Republic of the. 1990. National Natural Resource Policy. Banjul: Author. Final Policy Document.

- Gamman, John K. 1991. "Creating an Open Decision Making Process to Improve Environmental Policy Implementation: Applying Negotiation Strategies to International Development." Washington, DC: Paper prepared for the U.S. Agency for International Development.
- Gartlan, Stephen. 1990 "Practical Constraints on Sustainable Logging in Cameroon." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de l'Ouest, November 5-9.
- Gilbert, V.C. and A. Camara. 1990. Kiang West National Park: An Integrated Conservation and Village Development Project. Washington, DC: Biodiversity Support Program
- Gregerson, Hans, Sydney Draper, and Dieter Elz, eds. 1989. People and Trees: The Role of Social Forestry in Sustainable Development. Washington, DC: World Bank, Economic Development Institute.
- Gregersen, Hans, Peter Oram, and John Spears, eds. 1992. Priorities for Forestry and Agroforestry Policy Research: Report of an International Workshop. Washington, DC: International Food Policy Research Institute.
- Groenfeldt, David J. 1992. Natural Resources Policy Reform in Africa: A Provisional Assessment of USAID's Experience. Washington, DC: World Resources Institute.
- Hannah, Lee. 1992. African People, African Parks: An Evaluation of Development Initiatives as a Means of Improving Protected Area Conservation in Africa. Washington, DC: Biodiversity Support Program and Conservation International. Report prepared for the U.S. Agency for International Development.
- Hassan, H.M, B. Wayne Luscombe and Felipe Villagran. 1990. "Natural Resources Information Management in Africa: An Integrated Approach." Washington, DC: World Bank, Environment Department.

- Heermans, John and Greg Minnick. 1987. "Guide to Reforestation and Management in the Sahel Based on Case Studies at the National Forests of Gousselbodi and Gorou-Bassounga, Niger." Washington, DC: U.S. Agency for International Development.
- Hirji, Rafik and Leonard Ortolano. 1991. "Strategies for Managing Uncertainties Imposed by Environmental Impact Assessment: Analysis of a Kenyan River Development Authority." Environmental Impact Assessment Review. vol. 11, 203-230.
- Honadle, George. 1990. "People, Markets, and Trees: Institutional Dimensions of Tropical Deforestation." Los Angeles: Paper presented at the 51st National Conference, American Society for Public Administration, April.
- Honadle, George and Lauren Cooper. 1989. "Beyond Coordination and Control: An Interorganizational Approach to Structural Adjustment, Service Delivery, and Natural Resource Management " World Development, Vol. 17, No. 10, pp. 1531-41.
- Kyle, Steven. 1989. "Structural Adjustment and Natural Resources. An Overview of the Issues." Ithaca, NY: Cornell University. Cornell Agricultural Economics Staff Paper.
- Land Tenure Center. 1991. Workshop on Tenure and Management of Natural Resources in Sub-Saharan Africa. Arlington, VA: University of Wisconsin for USAID. February 13
- Lawry, Steven W. 1988. "Trip Report to USAID/Mali." Madison: University of Wisconsin, Land Tenure Center. Unpublished Document.
- Lawry, Steven W. 1991. "Structural Adjustment and Natural Resources: The Role of Tenure Reform." Madison: University of Wisconsin, Land Tenure Center.
- Ledec, George. 1985. "The Political Economy of Tropical Deforestation." In H. Jeffrey Leonard, ed. Divesting Nature's Capital: The Political Economy of Environmental Abuse in the Third World. New York: Holmes and Meier, pp. 179-226.

- Ledec, George and Robert Goodland. 1988. Wildlands: Their Protection and Management in Economic Development. Washington, DC: World Bank.
- Leonard, H. Jeffrey. 1985. "Political and Economic Causes of Third World Environmental Degradation." In H. Jeffrey Leonard, ed. Divesting Nature's Capital: The Political Economy of Environmental Abuse in the Third World. New York: Holmes and Meier, pp.93-136.
- Mallya, Fred and Kirk Talbott. 1990. "Constraints and Opportunities for Building Local Participation in the Uganda Environmental Action Plan." Washington, DC: World Resources Institute, Center for International Development and Environment.
- McLain, Rebecca J. 1991a. "Final Report: Village Reforestation Project Land Tenure Study." Madison: University of Wisconsin, Land Tenure Center, October.
- McLain, Rebecca J. 1991b. "Report 4: Forest Agency Survey. Land Tenure Project, Mopti, Mali." Madison: University of Wisconsin, Land Tenure Center, July.
- Miller, Morris. 1991. Debt and the Environment: Converging Crises. New York: United Nations Publications.
- Millington, S.J., Anada Tiega and J.E. Newby, ed. 1991. Biological Diversity in Niger: A Preliminary Assessment Commissioned by the United States Agency for International Development. Gland, Switzerland: World Wildlife Fund for Nature, International.
- Morell, David with Joanna Poznanski. 1985. "Rhetoric and Reality: Environmental Politics and Environmental Administration in Developing Countries." In H. Jeffrey Leonard, ed. Divesting Nature's Capital: The Political Economy of Environmental Abuse in the Third World. New York: Holmes and Meier, pp. 137-179.
- Muir-Leresche, Kay. 1989/90. "Forest Policy: An African Perspective." Journal of the Board of Agriculture, Vol. 19, Nos. 1&2, pp. 121-134.

- Nagle, George S. 1990. "The Forestry Sector of Madagascar." Washington, DC: Nawitka Renewable Resource Consultants Ltd. Paper prepared for USAID/Madagascar.
- Nagle, George S. 1991. "Structural Adjustment Programmes and the Forestry Sector." Ottawa: Canadian International Development Agency, Forestry and Conservation Sector.
- Niamir, Maryam. 1990. "Community Forestry: Herders' Decision-making in Natural Resources Management in Arid and Semi-arid Africa." Rome: Food and Agriculture Organization of the United Nations.
- O'Keefe, P., J. Kirby and I. Cherrett. 1991. "Mozambican Environmental Problems: Myths and Realities." Public Administration and Development, Vol. 11, pp. 307-324.
- Okigbo, Bede N. 1990. "Sustainable Agricultural Systems in Tropical Africa." In Clive Edwards et. al; eds. Sustainable Agricultural Systems. Ankeny, IA: Soil And Water Conservation Society. pp. 323-353.
- Peuker, Axel. 1990. "Debt-for-Nature Swaps." Washington, DC: World Bank.
- Poore, Duncan and Jeffery Sayer. 1988. The Management of Tropical Moist Forest Lands. New York: United Nations Tropical Forest Programme.
- Repetto, Robert. 1989. "Economic Incentives for Sustainable Production." In Gunter Schramm and Jeremy J. Warford, eds. Environmental Management and Economic Development. Washington, DC: World Bank, pp. 69-87.
- Romm, Jeff. 1986. "Forest Policy and Development Policy." Journal of World Forest Resource Management, Vol. 2, pp. 85-103
- Ross, Bruce and Amore Getahun. 1987. "Support for Technology to NGOs and PVOs Promoting Forestry in Africa." Washington, DC: Energy/Development International. Concept Paper.

- Sayer, Jeffrey A. 1990. "Institutional Arrangements for Forest Conservation in Africa." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de d'Quest, November 5-9.
- Schramm, Gunter and Jeremy J. Warford, eds. 1989. Environmental Management and Economic Development. Washington, DC: World Bank.
- Shaikh, Asif et al. 1988. Opportunities for Sustained Development: Successful Natural Resources Management in the Sahel. Washington, DC: U.S. Agency for International Development, Bureau for Africa, Office of Technical Resources and Sahel Office, Vols. I and II.
- Slade, Grant and Keith Weitz. 1991. Uganda Environmental Issues and Options. Chapel Hill, NC: Duke University, Center for Resource and Environmental Policy Research. Working Paper No. 91-3, May.
- Steinbarger, Douglas M. 1990. "Tenure and Alley Farming: A Literature Review, with Particular Reference to the West African Humid Zone." Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No. 138.
- Stryker, J. Dirck et al. 1989. "Linkages between Policy Reform and Natural Resource Management in Sub-Saharan Africa." Medford, MA: Tufts University, Fletcher School of Law and Diplomacy and Associates for International Resources and Development. Paper prepared for U.S. Agency for International Development, Grant No. AFR-0467-G-SS-88038-00, June.
- Talbot, Kirk. 1988. "Report on PVO/NGO Survey for West Africa IIED/USAID NRMS Project." Washington, D.C.: World Resources Institute.
- Thomson, James T. 1985. "The Politics of Desertification in Marginal Environments: The Sahelian Case." In H. Jeffrey Leonard, ed. Divesting Nature's Capital: The Political Economy of Environmental Abuse in the Third World. New York: Holmes and Meier, pp. 227-262.

- Thomson, James T. 1991. "Cost Effective Renewable Resources Governance: The Kayes Fisheries, Traditional Institutions and the Forest Service." Burlington, VT: Associates in Rural Development.
- Thompson, John. 1991. Combining Local Knowledge and Expert Assistance in Natural Resource Management: Small-scale Irrigation in Kenya. Washington, DC: World Resources Institute, From the Ground Up Case Study No. 2, February.
- Thomas-Slayer, Barbara, Charity Kabutha and Richard Ford. 1991. Traditional Village Institutions in Environmental Management Erosion Control in Katheka, Kenya. Washington, DC: World Resources Institute. From the Ground Up Case Study No. 1.
- Tukahirwa, Eldad M. and Peter G. Veit. 1992. Public Policy and Legislation in Environmental Management: Terracing in Nyarurembo, Uganda. Washington DC: World Resources Institute. From the Ground Up Case Study No. 5.
- Wamalwa, Betty Nafuna. 1990. "Learning From the Past: Traditional Land Management Systems in Kenya." In Roger Yeager, ed. Conservation for Development in Botswana, Kenya, Somalia, Sudan. Hanover, New Hampshire: African-Caribbean Institute, 1990. Pages 5-11.
- Warford, Jeremy J. 1989. "Environmental Management and Economic Policy in Developing Countries." In Gunter Schramm and Jeremy J. Warford, eds. Environmental Management and Economic Development. Washington, DC: World Bank, pp. 7-23.
- Warsame, Amina Mohamoud. 1990. "The Role of Somali Women in Forestry: Key Issues in Forestry Assistance Programs." In Rodger Yeager, ed. Conservation for Development in Botswana, Kenya, Somalia, and Sudan. Hanover, NH: African-Caribbean Institute, pp. 21-25.
- Wilson, Kathleen and George E.B. Morren, Jr. 1990. Systems Approaches for Improvement in Agriculture and Resource Management. New York: Macmillan.

- Winterbottom, Robert. 1990. "The Tropical Forestry Action Plan and Indigenous People: The Case of Cameroon." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de l'Ouest, November 5-9.
- World Bank, 1990a. "Forest Policy: An Approach Paper." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de l'Ouest, November 5-9.
- World Bank, 1990b. National Environmental Action Plans for Africa. Proceedings from a workshop organized by the Government of Ireland, the Environmental Institute, University College, Dublin, and the World Bank. Dublin, Ireland, December 12-14.
- World Bank, 1991a. Issues Facing National Environmental Action Plan in Africa. Report from the Club of Dublin Workshop, Mauritius, June 17-19.
- World Bank. 1991b. The World Bank and the Environment: A Progress Report, Fiscal 1991. Washington, DC: Author.
- World Bank. 1992. World Development Report 1992: Development and the Environment. Washington, DC: Author.
- Yeager, Rodger, ed. 1990. Conservation for Development in Botswana, Kenya, Somalia, Sudan. Hanover, NH: African-Caribbean Institute.

## ANNOTATIONS

Adeyaju, S. Kolade. 1976. "A Study of Forest Administration Problems in Six Selected African Countries." Rome: Food and Agriculture Organization of the United Nations.

**Abstract:** This study is a review and analytical survey of the historical development of public forest administrations in Cameroon, Ghana, Kenya, Liberia, Nigeria and Tanzania. It examines their institutional base and organizational structure for forest resources management, and describes aspects related to the legal framework, national forest policies, administrative responsibilities, staffing patterns and forest finance, and examines major problems which have limited the operational capacity of national forest services.

In the first chapter of the study, attention is focused on the evolutionary stages of development and on various factors affecting the nature and purpose of forest services. Then the resources at the disposal of the forest services are analyzed, and the effects of political and social changes on the supply of much needed resources and on the growth of these services are also examined. The last part of the study is devoted to a discussion of the major problems and feasible ways and means of improving the institutional strength of the forest services.

The situation in each country is largely dependent upon its political and educational history, and in particular on the extent of government involvement in the forestry sector. Nevertheless, attempts have been made to identify some causes of persistent difficulties; suggestions have also been made on how to improve forestry's claim to better resources in the increasingly complex national economies.

Ahmed, Alawiyya Jamal Mohammed. 1990. "Environmental Education in Sudan: The Need for New Content and Methods." In Rodger Yeager, ed. Conservation for Development in Botswana, Kenya, Somalia, Sudan. Hanover: New Hampshire: African-Caribbean Institute, pp. 59-64.

**Abstract:** A major omission in the Sudanese formal education system is the lack of emphasis on society's relationship with its physical environment and resource base. The author calls for dramatic changes in human behavior because the mismanagement of natural resources, combined with harsh ecological conditions, have resulted in massive degradation and consequently in threats to future survival. The author hypothesizes that this change will be enabled by an improved education system which teaches students about the environment and its capabilities.

Recommendations for environmental education include:

1. A curriculum which incorporates topics such as deforestation, famine and pollution;
2. A change in the "lecture" method of teaching to one which encourages student involvement;
3. A focus on certain groups, such as those less educated or most affected by the present environmental problems; and
4. An application of the acquired knowledge to daily life.

The suggestions reflect a participatory approach to natural resources management and discourage the imposition of government controls by central authorities.

Alberti, Marina and Jonathar D. Parker. 1991 "Indices of Environmental Quality: The Search for Credible Measures." Environment Impact Assessment Review, Vol. 11, pp. 95-101

**Abstract:** This article states that indicators of environmental quality will not influence the policy-making process unless there is agreement on the choice and the design of such measures. Measurement is an integral part of the process of identifying problems and searching for solutions, yet the increased capacity to collect, analyze, and manage information will not have an impact on policy-making unless more care is taken regarding the information selected. Scientific disputes and incomplete knowledge have serious implications of irreversible environmental changes underscore the responsibility of the scientific community to take part in the policy-making process.

To enhance their ability to monitor environmental change, national and international organizations have recently specified sets of indicators. For example, the Organization for Economic Cooperation and Development (OECD) is developing environmental indicators in three specific areas: 1) reporting on environmental conditions and trends, 2) integrating environmental considerations into sectoral decision-making; and 3) incorporating natural resources into overall economic accounts. These indicators will be used to monitor the state of the environment and its evolution over time; evaluate the performance of projects, programs, and plans; and communicate with the public and among decision makers.

The Environmental Protection Agency (EPA) Environmental Monitoring and Assessment Program (EMAP) indicators are designed to answer critical questions such as 1) What is the current status, extent, and geographic distribution of ecological resources? 2) What proportions of these resources are degrading or improving, where, and at what rate? 3) What are the likely causes of adverse effects? and 4) Are adversely affected ecosystems responding as expected to control and mitigation programs? The authors state that the EPA approach is well structured and responds to accepted statistical principles, but does not address the problem of subjective judgment of specific indicators.

Designing appropriate measures to monitor environmental problems requires the ability to balance scientific, social, and political considerations in the process of designing and applying these measures. This process will inevitably reflect tradeoffs between political and social actors, and effective and comprehensive policy making requires increased sophistication in assessing conflicts between scientific experts as well.

Aluma, John, et al. 1989. Settlement in Forest Reserves, Game Reserves and National Parks in Uganda. Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No. 98.

**Abstract:** This study examines social, economic and tenurial causes of agricultural encroachment and human settlement in Uganda's forest reserves, game reserves, national parks and other public lands reserved for various public projects. Since the early 1970's forest reserves, in terms of actual forest cover, has been reduced by 40%. Contributing factors to forest loss include: unregulated commercial exploitation; encroachment of human settlement and agriculture on public lands; government policies of the 1970's ("double production" and "freedom to settle anywhere"); underfunded and understaffed Forest Department; and growing demand for fuelwood and the lack of alternative sources of energy. Case examples are given for the Kibale Game and Forest Reserves and the Mabira Forest Reserve

Questions the authors identify that need to be answered before formulating policy are:

1. To what extent is encroachment caused by land shortage and lack of income earning opportunities in places of origin?
2. Why did settlers secure land in reserves and parks and not elsewhere in the country? Are there aspects of Uganda's land tenure systems which inhibit the movement of population in relation to available land?
3. To what extent do encroachers have land elsewhere (or could secure land elsewhere) or have other income earning opportunities, but weak enforcement presented opportunities for low-cost expansion of agricultural production into reserves and parks?
4. Taking account of the different social, economic, and tenurial factors contributing to migration to reserves and parks, what practical options are available to encroachers for resettling elsewhere?
5. What will be the social costs of resettlement, and how might these costs be minimized through effective government action?

Anderson, Dennis. 1987. The Economics of Afforestation: A Case Study in Africa. Washington, DC: World Bank, Occasional Paper No. 1/New Series.

**Abstract:** In large areas of developing countries the loss of trees causes erosion and soil loss, posing severe problems for sustainable development. This study translates the ecological benefits of reforestation projects, treeplanting and shelterbelts, into economic terms, showing that investments in environmental protection can benefit the economy as well. Both the actions of forestry services and tree plantings by farmers are needed to halt and reverse deforestation. With special reference to Africa, the author discusses the underlying reasons for deforestation, suggests policy changes to promote the planting and care of trees, and identifies issues for research.

A case study of the arid zone of northern Nigeria illustrates the benefits of establishing windbreaks and encouraging farmers to plant trees. Besides preventing soil erosion, improving soil fertilizer, and thus increasing crop production, trees provide fruit, livestock fodder, and fuelwood and building materials. The author compares the increase in farm incomes as a result of a reforestation program with the decrease in incomes if deforestation and soil erosion were to continue.

Anderson, Dennis and R. Grove, eds. 1987. Conservation in Africa: Peoples, Policies and Practices. Cambridge: Cambridge University Press.

**Abstract:** The impact of famine and human tragedy in Africa during the 1980s has had the effect of widening the debate on conservation, bringing the social context into conservation strategies. The principal aim of this book is to contribute to this broadening approach to conservation in Africa by stimulating a greater dialogue between scientists and social scientists. These sixteen essays assert that the social context has been missing from much that has been written about conservation in Africa.

This book addresses which conservation practices and policies in Africa today relate to the process of rural development and social change, and the significance of past conservation strategies in shaping the way that present problems are viewed and tackled. The essays warn that many of the prescriptions for environmental management made for Africa by development "experts" may prove as hazardous for the people and wildlife of Africa as recent policies for rural economic development have been.

The essays gathered in this volume share a common perspective, although they are written by people with widely differing academic backgrounds and training, ranging from anthropologists and historians to ecologists and zoologists. The organization of the book has grouped chapters around themes, and not disciplines. These themes are: past and present conservation ideologies in Africa, conservation in the context of wildlife and game parks; conservation priorities for rural communities; and the present relationship of conservation to development. Each of the four parts of the book is prefaced by a short introduction, which seeks to highlight the broader themes and significance of the chapters that follow

The authors add that while many African governments now consider conservation to be "a good thing", policies for National Parks, game reserves, forest protection and soil conservation programs are unlikely to be successfully implemented if they fail to involve the participation and cooperation of the rural people whose lives they invariably alter. They stress that the essential complementarity of ecological and sociological analyses of the African rural environments be kept firmly in focus during this participatory process.

Associates in Rural Development. 1989. Options for Promoting User-Based Governance of Sahelian Renewable Natural Resources. Bamako, Mali: Paper presented at the CILSS-sponsored conference, Regional Encounter for a Better Sociological Balance in the Rural Sahel, March 13-20.

**Abstract:** Of critical importance to the survival of contemporary Sahelian societies is the management of renewable natural resources (RNR). The consensus of Sahelian observers is that renewable resources are under severe and growing pressure, and the rules and institutions for RNR are inappropriate. These factors explain the relative inertia of Sahelian societies in the face of the threat resource degradation poses to their very survival. This paper addresses issues relating to the management of RNR by Sahelian societies by presenting a case studies on:

1. Top-down imposition of resource management projects (USAID's Niamey Department Development Project, World Bank Eastern Senegal Livestock Project, and CARE Majjia Valley Windbreak Project);
2. Autonomous, local-level efforts to manage renewable natural resources (water-harvesting in Burkina Faso, irrigation in Senegal, and wadi irrigation in Chad); and
3. Combined participatory and top-down approaches (USAID/Senegal's Southern Zone Water Management Project, Natural Forest Management Extension Effort of the Forestry Land Use Management Project (Niger), and World Bank Mopti Livestock Project)

The chapters on (1) policy implications, and (2) strategies to enhance popular control over and participation in management of Sahelian renewable natural resources, provide an excellent treatment and discussion of policy implementation issues for decentralization. Subjects addressed include: institutional requirements; fitting institutions to natural resources (private, common property, open access, and public good resources); structuring authority relationships for efficiency; enhancing dispute resolution capabilities to promote efficiency; and enhancing public financing capability of local natural resources management regimes.

Associates in Rural Development. 1991. A Conceptual Approach to the Conservation & Management of Natural Forests in Sub-Saharan Africa . Washington, DC: U.S. Agency for International Development. Office of Technical Resources, Bureau for Africa Publication Series No. 91 - 4.

**Abstract:** This comprehensive document is written for natural resources sector policymakers and senior managers/leaders. After an historical perspective and introductory comments, it is divided in two major sections: (1) implementing natural forestry management; and (2) managing the forests.

The implementing natural forestry management section elucidates the need for an operating policy framework. This framework provides the linkages between national development priorities and goals (i.e., meeting basic needs, socioeconomic growth, food self-sufficiency, commodity production, energy dependence, environmental stability) and the natural forestry management issues (i.e., deforestation and forest conservation). Factors to consider in the policy environment include: constitutional legislative framework, government priorities, economic factors, ecological factors, social and cultural factors, state-of-the-art technical research, policies in other sectors, and operational/administrative realities. Other considerations for implementation are local participation, knowledge of the resource base, knowledge of the ecology, biotic interactions, degradation and conservation, assessment tools and analysis, and economic and financial analysis.

The managing the forest section includes a suggested process by which an unmanaged public territory is converted to a common resource base to be exploited and maintained within a participatory management scheme. The three steps suggested are:

1. an agreement in principle by the government to allow a local user group to have control over a particular territory;
2. the organization and training of a local user group; and
3. the preparation and acceptance of a legal management document to define the policies and management strategy by which the forest will be exploited and maintained.

The major elements needed for a management plan are outlined, with a section especially devoted to range management.

Atta Moula, Mutasim E. 1990. "The Role of Traditional Institutions in Managing the Forest Resource: A Sudan Case." In Rodger Yeager, ed. Conservation for Development in Botswana, Kenya, Somalia, Sudan. Hanover, NH: African-Caribbean Institute, pp. 13-20

**Abstract:** This paper emphasizes the important role played by traditional institutions, particularly traditional leaders and courts, in natural resources management. A traditional leader is respected and trusted by villagers, and can use his influence as a holy man to achieve voluntary compliance and cooperative action to preserve the resource base. In mixing the traditional role with present day realities, the "administrative" sheikh (who rules with the "religious" sheikh) is responsible for tax collection in the village, allocating grazing rights, settling disputes, and protecting the forest reserves.

In spite of its harsh environment, the African village of El Sheikh El Siddig has maintained sustainable levels of livestock, farm and forest production. The author supports a policy which incorporates traditional structures because the government administration of natural resources through secondary organizations (such as the Department of Forestry) is flawed: the policies are formulated and adopted in a fragmented manner, and there is a lack of inter-agency coordination. In contrast, the organization and management of resource utilization on the local level is more successful due to unity, cooperation, and institutionalization of practices.

This article, however, does not clearly state how local practices can be incorporated into a policy at a higher level. It is widely held that due to the characteristics of natural resources management policies, their formulation and implementation require much government intervention. Nevertheless, the article's emphasis on the importance of legitimacy, consensus and popular involvement in local conservation efforts is justified.

Ayanda, J.O. 1988. "Incorporating Environmental Impact Assessment in the Nigerian Planning Process: Need and Procedure." Third World Policy Review, Vol. 10, No. 1, pp. 51-64.

**Abstract:** This article states a common problem: how to design a development program which emphasizes economic benefits while at the same time shows concern for the environment. The author discusses the important role of EIA and analyzes the procedure by which EIA could be incorporated into the Nigerian planning process. He states that the sole use of economic impact analyses has been a contributing factor to the failure of project planning and implementation in the developing world.

In writing about the conditions for incorporating EIA in the Nigerian planning process, the author touches upon the use of strategic management. First, the centralization of authority must be discontinued in order to allow effective participation in projects by lower levels of authority. Second, the incorporation of EIA into policy planning must be made compulsory. There has to be an institutionalized system which provides incentives for commitment to NRM regulations. Third, it is necessary to restructure and/or reorganize the administrative system; the roles of the government ministries must be evaluated to determine the correct assignment of responsibility.

The importance placed on EIA by multilateral institutions and donors (WHO, UNDP) provides a strong incentive for the Nigerian government to comply. A second incentive is that environmental problems in Nigeria are increasing, and EIA can help reduce them while at the same time improve development plans. These incentives are crucial, considering that policy makers have not been receptive to EIA and that without government commitment a responsible national NRM policy cannot be established. However, due to the government's tainted past (corruption and embezzlement), its support of a policy will do little to stimulate the general population to make any sacrifices or investments. Additionally, while there are many qualified people in Nigeria to aid in the country's development, few have been given the chance to participate in decision-making; there will still be hesitancy on their part and the government's part to change or modify roles.

The recognized need to define objectives clearly, encourage popular participation (and indigenous technology) and develop a process for monitoring and evaluation will facilitate project implementation. However, the reorganization of the government structure and modification of habits may prove to be obstacles which thwart any possible change in policy.

Bailey, Robert C., Serge Bahuchet and Barry Hewlett. 1990. "Development in Central African Rain Forest: Concern for Forest Peoples." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de l'Ouest, November 5-9.

**Abstract:** Approximately 200 million hectares of forest lie within the boundaries of six Central African countries: Cameroon, Central African Republic (CAR), The Peoples Republic of the Congo (PRC), Equatorial Guinea, Gabon, Rwanda, and Zaire. This area of forest represents 20% of the world's diversity of flora, fauna, and human cultures. Based on their observations of the processes of development and acculturation underway in central Africa, the authors offer recommendations to those engaged in planning and administering development projects in central Africa

These recommendations include:

1. Land in Central Africa should be considered as free and available only after careful study, including exhaustive interviewing of local and adjacent indigenous farmers and foragers;
2. The land rights of all forest peoples must be recognized;
3. The value of a nomadic lifestyle should be recognized as an effective strategy for exploiting the tropical rain forest in a sustainable way and as vital to the economic, social, and psychological well-being of forest peoples; and
4. For any development project, forest peoples should be an integral and early part of the planning process.

Baker, Randall. 1988. "Public Administration and Natural Resources Management in Developing Countries." Society of Public and Environmental Affairs (SPEA) Review. Vol. 10, No. 1, Fall 1988, pp. 3-7.

**Abstract:** The author reports that development technicians and consultants tend to think of themselves as neutral problem-solvers and they frequently fail to recognize and understand the political and social environment which affects the implementation of recommendations. The purpose of this article is to examine the political and administrative framework within which technical assistance and consultancy work abroad must function. The author suggests that development experts recognize that governmental structure in developing countries is likely to be organized in narrow sectors, that it may not be skilled in management techniques, and that it may have a rather short time-perspective.

The article states that most natural resource problems are, by definition, of a complex nature involving several disciplines crossing the boundary between natural and social sciences. A highly integrated team is necessary to translate a project appraisal or research work into action. A critical problem which impedes implementation occurs when the findings of a team cannot be communicated effectively to a host country administration because it is structurally incapable of absorbing information involving a high level of aggregation, integration and inter-sectoral activity.

The author concludes by stating that to ignore or externalize the system of government of a host country is to remove a critical variable from the process of analysis of development policy.

Barrows, Richard and Michael Roth. 1989. Land Tenure and Investment in African Agriculture: Theory and Evidence. Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No. 136.

**Abstract:** This paper uses both economic theory and empirical evidence from scholarly studies to analyze the hypothesis that individualization of land tenure increases tenure security and agricultural investment. Empirical evidence from three countries - Kenya, Uganda, and Zimbabwe - supported by literature on land registration from elsewhere in Africa are used to examine the hypothesis and make recommendations. Two conclusions emerge. First, the economic theory used to analyze land tenure is an overly narrow application of economic principles. A broader theoretical perspective that uses some elements of institutional economics and the theory of imperfect markets provides more insight into the behavioral response to conversion of traditional tenure to an individualized system. Second, whether individualization is preferable to the evolving system of traditional tenure in attaining specific agricultural development objectives is an empirical question that cannot be resolved by theory alone. The effects of individualization are determined by the context in which the tenure policy is applied. Policymakers should consider alternatives to individualization, including policies that simply remove impediments to evolution of traditional systems.

Blackwell, Jonathan M., Roger N. Goodwillie, and Richard Webb. 1991. Environment and Development in Africa: Selected Case Studies. Washington, DC: World Bank, Economic Development Institute, Policy Case Series No. 6.

**Abstract:** The study examines the environmental orientation and impact of bilateral and multilateral aid projects, as well as government-initiated projects, in Sudan, Tanzania, and Zambia. This report has a threefold purpose: to understand approaches to the measurement and valuation of environmental elements within development projects, to explain why projects are environmental "successes" or "failures," and to educate policymakers on how to frame projects so that environmental damage is minimized and sustainable development ensured.

Lessons learned from the case studies are listed below, categorized by issues:

1. In sustainable development, a long-term view is needed, and planners must think in terms of the replicability of the effort.
2. In appropriate technology, understanding local research is critical for success. High-technology systems to maintain environment improvements will not work in the long run. These projects may achieve their objectives the fastest, but tend to run into technical problems.
3. In community involvement, the case studies in this report found both success and failure from community participation. Stakeholders will have to be persuaded to change habits of living or working. Failure to address technical innovations to all stakeholders will result in maintenance problems and/or the local perception that the project is not theirs.
4. In monitoring, the authors found relatively little appraisal, monitoring, and evaluation taking place. Problems include the feeling that the life of the project is so short in measuring environmental impact monitoring is not worth pursuing, and that actually acquiring adequate data is difficult.

According to the authors, projects that meet the following conditions are likely to succeed environmentally: they take a broad, long-term, and all-embracing view of the development process; they use technology that is appropriate, affordable, understandable and serviceable; they have the confidence and support of the group whom they aim to help; and the controlling agencies can examine in relatively disinterested manner the inputs, methods and technology adopted in the project.

Brinkerhoff, Derick W. and Arthur A. Goldsmith, eds. 1990. Institutional Sustainability in Agriculture and Rural Development: A Global Perspective. New York: Praeger.

**Abstract:** Throughout the global community, the challenges of finite resources, budget deficits, and growing interdependence and complexity have forced governments and the private sector to do more with less. In the foreign assistance realm, this has translated into a donor mandate to promote self-sustaining development in the Third World, a key component of which is the institutional framework that conceives, plans, funds, implements, and manages activities. This book, based on the results of a multi-year applied research project, focuses on institutional sustainability and its role in agriculture and rural development. It concentrates on collaboration between international donor organizations and developing countries to design and implement projects aimed at introducing performance and capacity improvements.

The collection of fifteen essays is divided into three subject areas. Part one examines the sustainability dimensions of agriculture and rural development, with chapters that focus on the range of meanings of sustainability and the relationship between it and continued benefit flows, a conceptual model that draws on systems theory, organizational contingency theory, and political economy; and the action-research methodology for applying the model in the field. Part two is made up of nine chapters, each of which uses the model to analyze a particular case where an international donor-funded intervention sought to develop a sustainable institution. The cases range geographically across the world. Finally, part three draws on the case experiences to highlight strategies for promoting institutional sustainability. Lessons are derived from a comparative analysis of several of the cases, and a chapter incorporating the points made in all of the cases is also provided.

Brown, Michael, Ruth Buckley, Alex Singer and Leslie Dawson. 1990. Buffer Zone Management in Africa: Searching for Innovative Ways to Satisfy Human Needs and Conservation Objectives. Washington, DC: PVO-NGO/NRMS Project.

**Abstract:** This report synthesizes discussion and results of the Buffer Zone Management in Africa Workshop in Uganda, October, 1990. Managing buffer zones successfully is viewed as a promising, though difficult approach to conserving biodiversity. The zones provide a "shock absorber" between human activities and natural resources - both flora and fauna - that lie within or near core protected resources areas.

Key issues and challenges for buffer zone management include:

1. A lack of consensus as to whether buffer zones should be inside or outside parks, what their functions should be, and what criteria should determine the area, shape and permitted uses of the zone;
2. Serious negotiations among the entire cast of stakeholders have not been an integral part of protected area planning and management in Africa. Two major reasons can be suggested here: (a) national planners and conservation NGOs believe they have a mandate to place conservation priorities over the needs of local resource users; and (b) national planners and conservation NGOs control political power and resources and can influence the implementation of their agendas;
3. With the myriad of stakeholders, buffer zones become "bargaining zones." The key players include: (a) local residents expressing their basic needs; (b) park and game managers describing the resources they are charged to protect; (c) donor agencies outlining strategies to improve quality of life; (d) researchers explaining requirements for the preservation of environmental conditions; and (e) conservation NGOs trying to develop compromises between biological conservation and human needs; and
4. Developing common neutral language can enhance the negotiating process. Examples are settler versus squatter, hunter versus poacher, and western versus advanced.

The report also includes lessons learned from planning and implementing the workshop that groups in similar workshops should keep in mind. Categories of suggestions include preparation, workshop structure, case studies, field trips, and evaluation and follow-up.

Bruce, John W. and Louise Fortmann. 1989. Agroforestry: Tenure and Incentives. Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No. 135.

**Abstract:** There are three quite different tenure situations in agroforestry: trees on the agricultural holding; trees as commons (communal forests, village woodlots, and trees on commons not devoted primarily to forestry); and trees in reserves managed by the state. The concern of the authors for the analysis of the tenure situation in the three circumstances above is to avoid serious miscalculations in agroforestry projects concerning incentives and responses to opportunities concerning trees.

After a description of the three tenure situations, a section on assessing tenure issues in project design contains a series of questions on the rights of tree planters and users, how resources are defined, how groups interact when resources are viewed to be held in a commons area, and how resources within a protected area are exploited (albeit illegally). Sample questions from when resources are held in a commons area are:

1. Are non-members prevented from using the commons? What institution does this, and how?
2. How does the institution make decisions? Does it make the rules? Does it execute them? Are there others responsible for executing its for executing its decisions? If so, who are they, and how are they chosen?
3. What sanctions can the institution mobilize against members when its rules or orders are disobeyed? Can it cut off use rights, temporarily or permanently? Can it fine or imprison? Are there other sanctions used, such as corporal punishment? For what offenses are particular penalties characteristically imposed? Are they effective?
4. What sanctions can the institution mobilize against non-members?
5. Is a particular ministry or government agency responsible for institutions of this type? If so, what is the nature of the relationship?
6. Are government officials or the courts ever asked to enforce a decision made by the institution?
7. How are disputes concerning use of the commons settled? Disputes among members? Disputes between members and non-members?

Bruce, John W., Mark Freudenberger, and Gene Summers. 1990. Tenure Constraints and Opportunities in Natural Resource Management in The Gambia. Madison: University of Wisconsin, Land Tenure Center.

**Abstract:** This report examines tenure strategies for better resource management, relates them to the statutory framework and customary law on the management of land and other natural resources, and discusses implications for The Gambia. It focuses these strategies on three situations: the farm, and in particular tenure issues in on-farm forestry; tenure issues in management of grazing resources; and tenure issues in forestry.

Research by the World Bank, USAID, and the Land Tenure Center has shown that state interventions intended to enhance security of tenure by replacing customary tenure systems with state-conferred tenure, such as land registration or use permit systems, were found to have been largely ineffective. The findings, according to the authors, imply a fundamental shift in tenure policy from a "replacement" to an "adaptation" paradigm. Policy makers need to rethink the model which sees customary tenure systems as dysfunctional and static and envisages their systematic replacement by the state with tenures such as freehold or leasehold (the "replacement" paradigm). Instead, a more appropriate model sees such systems as evolving and, if recognized by the state and provided with a supportive legal and institutional environment, capable of developing to meet changing needs (the "adaptation" paradigm). Those needs include increased productivity, food security, safety-net functions and demands for more equitable access to resources by disadvantaged groups such as women and certain castes.

Other policy recommendations are also provided for on-farm customary tenure, resolving conflicts between herders and farmers vis-a-vis grazing rights, common property management, co-management arrangements between government and communities for forest resources, increase of incentives of the local people to protect forest resources, and gender issues are also provided.

Catterson, Thomas M. 1988. "Mechanisms to Enhance Popular Participation." In Francois Falloux and Aleki Mukendi, eds. Desertification Control and Renewable Resource Management in the Sahelian and Sudanian Zones of West Africa. Washington, DC: World Bank, Technical Paper No. 70, pp. 28-42.

**Abstract:** This chapter argues for the need for and desirability of popular participation in natural resources management. Local people must have control over their resources because NRM is not feasible without local autonomy. Sahelian governments, however, are uncomfortable with a potential political powerbase being created in rural areas.

Catterson indicates that co-management of natural resources, between local residents and government provides the most feasible blend of cost savings and appropriate incentives. Giving people authority to manage their resources opens the way for management entrepreneurship at the local level, and the costs of changing rules will be lowered greatly if binding decisions can be made there. Successful local experimentation can have significant spread effects through replication of successes. The rate at which schemes and approaches can be tested and the rate of generation of new approaches should increase radically over time. Learning among local jurisdictions should also increase, because more examples will arise. Costs to the state for management will drop off noticeably if local people find management in their interest and begin to co-produce and manage natural resources, thereby sharing the burden of making and enforcing rules about NRM with state officials.

Cernea, Michael M., ed. 1985. Putting People First: Sociological Variables in Rural Development. New York: Oxford University Press.

**Abstract:** The basic tenet of this book is that people are, and should be, the starting point and the end goal of development interventions. This means making social organization the explicit concern of development policies and programs, and constructing projects around the mode of production, cultural patterns, needs, and potential of target populations. Lessons from many World Bank-funded projects are discussed, and Bank experience with sociological and anthropological work in rural development projects are reviewed.

Chapters deal with sociological analysis in the rural development subsectors of: irrigation, agricultural settlements, livestock, fisheries, forestry and roads. In fishery projects, for example, the different types of production modes (harvest vs. aquaculture) and their associated technologies need to be investigated, along with variables such as the amount of producer cooperation, economic stratification, shifting residence and irregular work hours, unpredictability of resources, and the high perishability of the product. The interactions and impacts of these factors entail unusual consequences and requirements for development interventions.

In forestry, for example, the challenge for social analysis is how to involve farmers and local communities in tree planting and growing, for without their cooperation forest departments cannot stem or reverse the current rates of consumption and destruction. Authors address beneficiary participation in social forestry projects, changes in forester skills and attitudes called for by social forestry, land tenure systems and patterns of group organization, and approaches to social analysis of forest resource users.

Additional chapters focus on general issues of evaluation, participation, and data collection methods. The chapter on evaluation demonstrates the sociocultural analysis makes a significant difference in the chances for project success: adequate social analysis doubled the average economic rate of return for rural development projects. The discussion of participation looks at the nuts and bolts of organizing participation: who, how, and in which project phase, with examples from Ghana, Mexico, and Nepal. The methodology chapter reviews rapid rural appraisal techniques for data gathering.

Christophersen, Kjell A. 1988. An Economic Approach to Arid Forestry Project Design: Experience from Sahelian Countries. Washington, DC: Energy/Development International.

**Abstract:** Economics, according to the author, should contribute to the planning of forestry projects at the outset of the planning process, not at the end when all the critical decisions on what to do and how and when to do it have already been made. This manual illustrates the clear advantages of using economics to its fullest potential during the planning and implementation phases, and is written to make project planners and decision makers more aware of the importance of performing in-depth economic analyses. The author bases the recommendations in field realities: what can be done if little or no reliable data are available, how can assumptions be specified, what is the link to management alternatives, how can results be interpreted for implementation, and how can sensitivity analyses be conducted?

Recommendations suggested by the author include:

1. Institute a standardized analytical approach concerning the use of forest economics in project planning and evaluation between donors and host countries, between projects, and between countries.
2. Conduct market studies at the early phase of project planning. A market study will give a better indication of the end products for which the resources should be managed.
3. Do economic and financial analyses in collaboration with foresters and other involved professional disciplines. Jointly determine which alternatives to test and why.

Cohen, Andrew, ed. 1991. Report on the First International Conference on the Conservation and Biodiversity of Lake Tanganyika. Bujumbura, Burundi: U.S. Agency for International Development. March 11-13.

**Abstract:** Environmental threats to Lake Tanganyika are as diverse as water pollution, excessive siltation caused by deforestation, habitat destruction, and over fishing. The First International Conference on the Conservation and Biodiversity of Lake Tanganyika was convened in order to coordinate planning, conservation and research activities with the lake's basin and disseminate information and policy recommendations among the riparian states of Burundi, Tanzania, Zaire and Zambia. The conference was attended by 65 representatives from 12 countries, and the proceedings feature recommendations and speeches given at the conference.

Anecdotal information from participant speeches on NRM strategies for organization and management include the following:

1. A fisheries regulation in Tanzania prohibits the use of poisons and explosives for killing fish. The fine, however, was so small that most culprits easily pay it and go away to repeat the same offense,
2. Two problems noted for the management of underwater reserves are: (a) the accommodation of the interests of the lakeshore people located in and near reserves, including traditional fisherman, and the involvement of these people in the aims of the reserve, and (b) the special requirements of tourist visitors upon whom revenues will depend;
3. In Zaire, fisheries legislation is poorly enforced, and there has been a lack of interest by successive governments of Zaire. This lack of interest has resulted in several administrative transfers of the fisheries unit between the Ministries of Agriculture and Tourism and the Ministry for Environment and the Conservation of Nature;
4. The management of natural resources around Lake Tanganyika is difficult due to (a) the failure to control human activities of all types (deforestation, cultivation, and illegal fishing both in the lake and around the lake), (b) the failure to coordinate legislation and protective measures between the four countries concerned; (c) little or no education concerning the value of the lake, its biodiversity, and the protection of that diversity to spark the conscience of the population; and (d) the absence of a permanent international technical commission, charged with coordinating policies of conservation and biodiversity research on the lake.

Davis, Ted J. and Isabelle A. Schirmer, eds. 1987. Sustainability Issues in Agricultural Development: Proceedings of the Seventh Agricultural Sector Symposium. Washington, DC: World Bank.

**Abstract:** These proceedings report on a World Bank symposium held in January 1987 that examined sustainability in agriculture from three different perspectives: institutional development for sustained agricultural development, managing natural resources for sustainability, and diversification issues in sustainable production systems. The document contains the papers presented at the symposium and rapporteur commentary on each paper.

The institutional development session opened with an overview by Vernon Ruttan of the institutional requirements for sustainable agriculture, which reviewed the dynamics of institutional and technical innovation, and the range of institutions involved (e.g., irrigation, fertilizer, credit, marketing, research and extension). Other papers dealt with the human resource dimensions of sustainable institutions, local government, the need for ministry effectiveness, agricultural marketing and privatization, farmers' organizations, and institution-building for research and extension.

Robert Repetto presented the overview of natural resources management (NRM) for sustainability, looking at problems of resource degradation and the economic undervaluation of natural resources, and highlighting issues of institutional failure (private market failure to conserve resources for the future, and public sector failure in effective NRM). Papers in this session focused on soil conservation and watershed development, land tenure and management, on-farm forestry, desertification, soil salinity, fisheries, and preservation of germplasm.

The diversification session was opened with a presentation by the director-general of CIMMYT, who reviewed the historical and economic tensions between production specialization and diversification, and the interaction among biological, economic, and institutional factors. Session papers covered diversification in rice, crop diversification in irrigated agriculture, commodity analysis, research and extension needs, upstream needs (information, inputs and credit), post-harvest considerations, and economic policy for diversification.

Dejene, Alemneh and Jose Olivares. 1991. Integrating Environmental Issues into a Strategy for Sustainable Agricultural Development: The Case of Mozambique. Washington, DC: World Bank, Technical Paper No. 146.

**Abstract:** The civil war and displacement of two million people is currently a key environmental problem in Mozambique. About 30% of the population in the 40 priority districts included in the Government's agricultural development strategy consists of displaced people. The displaced population is concentrated near the major towns of the coastal zones and safe rural areas, creating severe shortage of land, increasing the demand for woodfuel and fishery resources, and threatening the mangroves. Any strategy to promote sustainable development should identify vital environmental risks associated with the development of natural resources and suggest alternative ways to reduce these risks and to ensure sustainability.

Major environmental policy issues for Mozambique in sustainable agricultural development are identified. They include:

1. Land tenure - All land is property of the state. The practice of shifting cultivation and bureaucratic inefficiency for renewing land lease agreements hinder conservation activities;
2. Construction of large dams for hydropower - The Cahora Bassa and other dams have provided power to both Mozambique and surrounding countries, but has adversely affected fisheries, wildlife, and agricultural activities downstream;
3. Depletion of forest resources - Although 70% of the country has good forest cover, urban areas and areas where displaced people are concentrated are facing localized deforestation;
4. Stumpage rate policy - The stumpage fee is fixed at an extremely low level and does not reflect the economic cost of replacing forest resources; and
5. Legislation, manpower and institutional issues in forest protection and development Legislation regarding management of forests was written in colonial times and does not reflect the increasing threat to the resource base. The forest law also does not take into account local administration and individual initiative for the protection of trees. The Forest Department has neither the adequate manpower nor the institutional capacity to enforce regulations in rural areas, and staff shortages are on the increase.

Dorm-Adzobu, Clement, Okyeame Ampadu-Agyei, and Peter G. Veit. 1991a. Community Institutions in Resource Management: Agroforestry by Mobisquads In Ghana. Washington, DC; World Resources Institute, From the Ground up Case Study No. 3, March.

**Abstract:** In Goviefe-Agodome, Volta Region, a local self-development cooperative initiated by the government has successfully turned land that was considered infertile into productive farmland through various agroforestry practices. Some of the proceeds from the communally run farms are used for community development activities; the rest is divided equally among members. The cooperative has emerged as the village's most active community development institution capable of mobilizing labor and resources of both members and nonmembers.

Four elements contributed to the success of the community development efforts:

1. With the support of local leader and institutions, the actions are designed, implemented and managed by a local organization acceptable to the community. The local mobilization squad ("mobisquad") was organized in 1983, and used the support of the council of elders and the leaders of the women's movements to acquire communal land and initiate activities;
2. The agroforestry efforts yield immediate financial and other benefits to the cooperative members and their households. The mobisquad diversified activities to planting leucaena and teak trees, crops and cotton. In the first four years of operation, they have netted more than \$9,850 and have constructed improved latrines and a clinic for the village. Members also have access to low-interest loans from the mobisquad bank account;
3. The resource management activities are locally sustainable and involve practices and techniques familiar to the members. Their efforts emphasized the production of staple food crops through traditional work parties. Tree planting and management are also known, and farmers have traditionally nurtured native trees for fuelwood, medicines and building materials; and
4. The community has benefited from accessibility to major urban areas and has received much assistance in its development activities. Many of the adults have travelled throughout Ghana, have a high state of health and education, and have links to government or donor organizations that will benefit the community. USAID, World Vision, and FAO have all provided assistance.

Dorm-Adzodibu, Clement, Okyeame Ampadu-Agyei, and Peter G. Veit. 1991b. Religious Reliefs and Environmental Protection: The Malshegu Sacred Grove in Northern Ghana. Washington, DC: World Resources Institute, From The Ground Up Case Study No. 4, July.

**Abstract:** Ghanians are increasingly looking for ways to secure fuelwood and other products, and are endangering the local forests. As the coverage of viable forest declines in sub-Saharan Africa, governments are taking notice of the methods - including local-level initiatives - that appear to preserve and manage the forests. Malshegu's success in this endeavor may prove a useful example.

The principal driving forces behind Malshegu's effective protection of its sacred grove include: a strong religious belief in the grove as the sanctuary of the local god - in good measure a result of the effectiveness of the religious leader; the rules and practices established centuries ago to guide people in their use of the forest and its resources; and the growing regional importance of the sanctuary as other local sacred groves become degraded or lost. These elements, noted in this case study, lead to policy implications that are supported by research from sacred groves elsewhere in Africa and Asia, and by studies of other sacred natural areas.

The government of Ghana's recognition of the importance of traditional religious beliefs in local-level natural resources management and its recent policy, legislative, and programming actions to further empower communities to take greater control of their resources have the potential to lead to improved local initiatives in environmental protection and management. Other governments and international development assistance agencies concerned with natural resource management may learn from Ghana's example.

Elbow, Kent. "Popular Participation in the Management of Natural Resources: Lessons From the Baban Rafi Forest, Niger." Madison: University of Wisconsin, Land Tenure Center. Unpublished dissertation proposal.

**Abstract:** This paper discusses the forest cooperative of Baban Rafi, established in July 1989, which represents the Nigerian government's attempt to devolve rights and responsibilities of natural resources management to local populations in order to achieve more substantial and self-enforced resource management practices. The incentive for this reform is that the Nigerian government has failed to preserve the natural resource base by imposing and enforcing rules on local populations. The author notes that this policy change also reflects expression of a "nouvelle politique," the central logic of which is that local populations will manage resources sustainably if they are assured a stake in the benefits of resource exploitation.

The Nigerian government promoted a collaborative (government, NGO, local population) effort, yet apparently did not study all the implications of changes resulting from its new policy. Two considerations are that the losers are not adequately compensated and are left ready and able to sabotage the new policy, and that the locals' appetite for land will be whetted due to an increase in land value (because of recently introduced agroforestry and soil management techniques). Elbow states the importance of recognizing the consequences of clearing forests for farmland--the incentive of which is equal to that of levelling trees for cash.

The author states that a serious effort must be made to understand current resource practices and rights of each of the local user groups in order to sustainably manage and preserve the Baban Rafi Forest. The paper brings up questions to address regarding the implementation of policy change, two of which are: 1) Does the government possess the ability and/or mechanisms to modify a policy which already has been initiated? and 2) What kind of safeguards are there to ensure that a "saboteur" group is discouraged from action?

Elbow, Kent and Alain Rohegude. 1990. A Layperson's Guide to the Forest Codes of Niger, Mali, and Senegal. Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No 139.

**Abstract:** The Sahelian Forest Code decree of 1935 had two principal objectives at the time of its creation: to protect forests from overuse by regulating extraction of such forestry products as firewood, charcoal, and lumber; and to protect and restore ecologies of forest areas which had become degraded. The objectives were implemented through restricting or suspending use rights, and were regulated by forest agency personnel who were actively recruited from the ranks of the military and police.

The spirit and provisions of the 1935 code survive in the policies of present day Mali, Niger and Senegal, but there is a growing recognition that the region's problems will not be solved simply through state regulation of resource use. Foresters, policy makers and donor agencies are examining ways of amending forestry legislation to provide greater incentives for individuals and communities to plant and manage trees for their own benefit. This study outlines some of key provisions of the forestry codes in Mali, Niger and Senegal, and comments on implications for state, community and private rights.

The central legislation in force for Mali was enacted in 1986; for Niger, the principal laws were enacted in 1974; and for Senegal, laws passed in 1965 and 1974 are in force. Issues included in each of the country sections include: forest classification and the jurisdiction of the state over those resources; restrictions assigned to state controlled land (i.e., clearing of land); protected species of trees; permits and fines; and policing powers over the land and resources. The authors conclude that although there has been progress toward granting additional rights to farmers, the states are still reluctant to relinquish complete management rights over forest resources.

Falloux, Francois and Alain Rochegude. 1988. "Land Tenure as a Tool for Rational Resource Management." In Francois Falloux and Aieki Mukendi, eds. Desertification Control and Renewable Resource Management in the Sahelian and Sudanian Zones of West Africa. Washington, DC: World Bank, Technical Paper No. 70, pp. 10-28.

**Abstract:** This chapter highlights the importance of dealing with land tenure issues in sustainable NRM. The authors note several implementation impediments to changing land tenure and use policies:

1. Overly complex, centralized, and non-operational institutional framework. Numerous ministries and departments, each with responsibility/authority for a portion of land tenure/use policy. This leads to duplication of effort, overburdening of clients to gain access to services, and too little technical expertise in any single agency;
2. Insufficient and uncoordinated data collection, inadequate technologies, nonfunctional management systems. Donor-funded, tied-aid technologies (e.g. aerial photomapping equipment) lead to disparate equipment pools, and are hard to maintain. Files, photos, and maps disintegrate and are lost;
3. Governments are determined to improve land management. African governments press ahead with ambitious policy agendas and new laws; this leaves implementors farther and farther behind; and
4. Donors are sensitive about intervening in tenure questions because of political dimensions. This was more true of the past than now.

The authors also note that land policy has numerous links to other sectors. They state that adjustment of land law, although necessary to halt resource degradation, is far from sufficient. In addition, rural services (research, extension, input supply, credit and marketing) must be restructured to promote intensive production.

Falloux, Francois and Aleki Mukendi, eds. 1988. Desertification Control and Renewable Resource Management in the Sahelian and Sudanian Zones of West Africa. Washington, DC: World Bank, Technical Paper No. 70.

**Abstract:** This volume is a compendium of papers presented at the "Workshop on Desertification Control and Renewable Resources Management" held in Oslo, Norway in June 1986, and sponsored by the Norwegian Ministry of Development Cooperation, the Canadian International Development Agency and the World Bank. The main objective of the workshop was to develop workable guideline for addressing the problem of resource depletion in the Sahelian and Sudanian zones of West Africa.

Major policy areas covered included land tenure, water management, household energy use, production systems and migration. The contributors describe how existing control and incentive schemes can be modified to encourage the establishment of sustainable resource management in those areas, and to define the political, institutional and economic responsibilities involved.

The section on land tenure advocates simplified land laws, enhanced security of tenure, and greater popular participation in land administration. The prescription for the household energy sector is aimed at reducing urban demand for fuelwood. Recommendations concerning water management include institution building, the use of appropriate technology, and the development of human capital. Traditional production systems are discussed from sociological and economic standpoints, with emphasis on more autonomous local organizations (such as pastoral associations). The migration strategy outlined attempts to strike a balance between spontaneous, but badly organized, migration and slow and costly state-sponsored migration schemes. A recurring theme is that smaller organizational units (e.g., village or pastoral associations), for which a tradition exists in Africa, are better equipped - psychologically, physically and legally - to manage their own resources. This belief is shared by all the authors and underlies the strategies for improving production systems and land use.

Falloux, Francois, Lee Talbot, and Jeri Larson. 1991. Progress and Next Steps for National Environmental Action Plans in Africa. Washington, DC: The World Bank.

**Abstract:** Africa faces an environmental crisis unprecedented in history. Rapid deforestation, loss of soil fertility, low agricultural productivity, disappearing biodiversity, and an unmanageable urban environment have thwarted the continent's social and economic development. These problems in turn are rooted in social and political ills, such as the population explosion, unsustainable policies, weak institutions, lack of information, and other external influences. To deal with the crisis, 18 African countries have initiated, or are considering, National Environmental Action Plans (NEAPs). The World Bank's Africa Region has provided the initial impetus for the development of NEAPs, but NEAPs are intended to be an in-country, demand-driven process based on local participation. The NEAP aims to define a time-bound plan of actions including environmental policy, institutional and legal reforms, corrective measures for continuing development programs, and new investment programs.

Recommendations are provided for the NEAP process, content, implementation, and external support. Those recommendations for NEAP implementation are:

1. Effective implementation of a NEAP requires a high-level environmental policy and coordination unit within or with authority from the highest level of government;
2. An environmental agency is needed to prepare material for the consideration and action of the policy and coordination unit, and to implement its policies and decisions;
3. Regulatory functions dealing with issues of pollution, land, and other resource use and management are required as part of any NEAP. These functions should be handled by line agencies, under the coordination of the environmental agency; and
4. The participation of the public and private sectors and NGO community is essential for the effective implementation of the NEAPs.

Freudenberger, Karen Schoonmaker. 1991. "Mbegue: The Disingenuous Destruction of a Sahelian Forest" Bulletin of the Institute for Development Anthropology Vol. 9, No. 2, pp. 2-12.

**Abstract:** In April, 1991 the Government of Senegal decided to permit the transfer of 45,000 hectares of protected forest used by agropastoralists to peanut fields controlled by the Mouride Islamic brotherhood. The author traces the historic precedents for such transfers, and the increasing competition between the agricultural interests of a highly-value export crop like peanuts controlled by the politically powerful Mouride brotherhood, and the transhumance and pastoral needs of the FulBe herders.

In the context of natural resource management, the government's decision was questionable. The Mbegue Protected Forest is on fragile sandy soils, and intensive agricultural production (common with peanuts) will deplete the soils quickly. Lands controlled by the Mouride brotherhood have not traditionally practiced soil conservation measures - they have, throughout the last century, been able to petition the colonial and then the Senegalese government for natural forest land once their fields become infertile. There is no government or donor program aimed at forest regeneration that can balance the loss of 45,000 acres; the author points out that a 15-year German project attempting to restore 30,000 hectares of land similar to Mbegue has cost more than \$5 million and has not been particularly successful.

The losers in this transfer are the agropastoralists. Because livestock is seen in Senegal as a less productive land use, future judgements in the government and courts will probably go against them. The Mouride brotherhood has emerged as the short-term winner, but its strategy of claiming virgin forest through political power has alienated the group in some government circles. The author raises questions about the role of both the government of Senegal and the reaction of the international donors. The government has clear statutes and laws which should have protected the Mbegue forest, and it is coming under increasing pressure from a small number of donors. Donor reaction has been somewhat muted because of the role of Senegal in the Gulf War. The World Bank has been the most outspoken, concluding after a mission to the area that "the policies of participative management of natural resources subscribed to by the Government are no longer credible."

The author concludes by stating, "the destruction and avaricious exploitation of national and international resources by a relative few has been permitted by the negligent, complacent, and ultimately complicit silence of the many." This use is a clear illustration of the importance of the political dimension of NRM policy implementation.

Fultang, Benedict. 1990. "The Efficiency of the Forestry Taxation System in Cameroon." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de l'Ouest, November 5-9.

**Abstract:** This paper looks at the forestry taxation system in Cameroon, which provides for the collection of various sums from forest exploitation activities. These funds are controlled by the Forestry Department in the Ministry of Agriculture. As the economy of Cameroon and the entire population is dependent on the forest, the government's goal is to utilize the forest for maximum benefit while preserving it for the future.

The collected taxes go to the state, local councils and a fund for reforestation. The author highlights the positive aspects of the system, such as the fact that every economic sector that is concerned with the development of the natural resource gets some portion of taxes as an incentive for continued participation in the conservation and development of resources. Strong enforcement mechanisms and the flexibility of the system are also highlighted.

The author points out the flaws of the system as well: the inability of the Forestry Department to follow-up or to know which bills have been effectively settled and which are outstanding, and a complicated and inefficient tax calculation and recovery procedure. These problems indicate that while a policy may appear to be sound, it will not be effective if the government institutions charged with implementation are not able to handle their assigned responsibility.

Gambia, Republic of the. 1990. National Natural Resource Policy. Banjul: Author. Final Policy Document.

**Abstract:** The overall objective of the Natural Resource Policy in The Gambia is to bring about the long-term sustainability of its natural resource base. An Ad-hoc Task Force assigned to the development of this policy document recognized that organizational problems, lack of a clear mission, and lack of government support (i.e., staffing and funding) hamper the implementation of a comprehensive natural resource policy.

Conclusions and recommendations in the document include:

1. Although laws have been passed focusing on NRM and donors have expended large sums of money, change in the quality of life cannot be documented. Many policies, projects and programs have not been implemented due to lack of funding and staff, unfocused priorities leading to watered down efforts, and non-existent local institutional incentives and a lack of local involvement;
2. A cabinet level group for NRM should be charged with coordination of donors, conducting NR assessments at five-year intervals, and promoting multisector comprehensive environmental education programs;
3. The National Environmental Management Act (NEMA) should be amended to clarify the mission of the environmental unit, and to create local natural resource conservation districts; and
4. Natural resource interventions should be incorporated into existing schemes and methods, have an education and training strategy, develop technology that is transferable, not require large capital outlays, consider constraints imposed by land tenure, have measurable impacts, provide opportunities for local participation, self-help and ownership, and within the capabilities of the recipients to operate and maintain.

Gamman, John K. 1991. "Creating an Open Decision Making Process to Improve Environmental Policy Implementation: Applying Negotiation Strategies to International Development." Washington, DC: Paper prepared for the U.S. Agency for International Development

**Abstract:** This paper argues that a key reason why environmental policies are not implemented is the failure to include all the relevant stakeholders in the policy making process. A more open process is required to design strategies for environmental policy implementation that integrate politics, economics, and culture, transcending the barriers erected by the traditional approach to development which treats them as separate components. An open process needs to account for the interests of a broad range of stakeholders, including donor agencies, national politicians, resource users, and NGOs. If any one group is left out, a gap is created that the others can use to pursue their own interests, often to the detriment of environmental policy reforms.

An open decision making process depends upon several preconditions: participation of relevant groups, representation and assistance for weak parties, legitimacy, an appropriate convener, neutral facilitation, and accountability. The author proposes seven steps to make the process work:

1. Evaluate institutional capacity of the implementor.
2. Conduct cultural stakeholder analysis.
3. Choose facilitator or mediator.
4. Design elicitive model for negotiation process.
5. Initiate negotiations for implementation strategy.
6. Create performance standards for implementation.
7. Agree on timeframe and procedures for performance evaluation.

Gartlan, Stephen. 1990. "Practical Constraints on Sustainable Logging in Cameroon." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de l'Ouest, November 5-9.

**Abstract:** Achieving sustainable timber harvests in tropical moist forests depend on the length of logging cycles, the breeding systems of the trees, and successional processes. In Cameroon, government-control of logging operations in Cameroon and the common procedures of logging companies largely preclude sustainable logging. The article highlights the present government policies and industry practice and makes recommendations for future action.

Government policies include. (1) requirements for licenses and concessions on "national land" where logging operations come into conflict with rural villages, (2) a requirement to process 60% of the raw material locally, even though outmoded machinery makes the process inefficient; (3) encouraging farming on land that has been cleared through logging rather than re-planting; and (4) little legislation concerning the methods of logging or for the imposition of ecologically friendly logging techniques.

Logging company procedures and practices include: (1) little or no contour mapping and insufficient grade control; (2) low standards of road planning, construction, and log extraction routes, (3) considerable wood waste at the logging site and at the sawmill; (4) secondary payments to local villagers in order for the companies to be permitted to carry out operations, and (5) clear violations of regulations governing Wildlife Reserves in the Cameroon, including lack of a management plan and regeneration of the site

The only sustainable logging presently occurring in Cameroon, states the author, is that by default - where population is low and only the most valuable logs are removed. To achieve sustainable logging, the Government must allow the companies long-term leases which will allow and require long-term responsibility for the concession area. Logging companies need to improve their technical standards for tree extraction and improved sawmills.

Gilbert, V.C. and A. Camara. 1990. Kiang West National Park: An Integrated Conservation and Village Development Project. Washington, DC: Biodiversity Support Program.

**Abstract:** The project described focuses on the Kiang West National Park, one of The Gambia's most significant natural areas, and on development of the villages in the surrounding area. The Kiang West project is intended to be a model of conservation and sustainable use of natural resources to contribute to the development of The Gambia.

Among the key issues and recommendations regarding conservation and development are:

1. National and local administrative structures are needed to coordinate individual agency and community contributions to integrate programs of conservation and development. A National Agency for Conservation and Development (NACD) should be established in the Office of the President. At the local level a Technical Advisory Committee should be established particularly for interaction with the Department of Wildlife Conservation, and to allow participation of the local population in decisions that affect their uses of the natural resources of the area;
2. The Department of Wildlife Conservation must be strengthened so that it can effectively manage the park. This will include development of plans for improved infrastructure, staff recruitment and training;
3. Improve the management of the forestry sector in association with the park and develop saleable products and marketing systems with the goal of changing villagers' attitudes toward woodlands and minor forest products;
4. Give high priority to environmental education and extension, and focus on recommendations for the participation of village residents in designing and carrying out a program to conserve the natural resources in the park and in their own village areas. Also, an environmental component should be included in the teacher training programs at the Gambia College.

The report also contains individual annexes which specify information on rural sociology, park management, environmental education, and resource economics.

Gregerson, Hans, Sydney Draper, and Dieter Elz, eds. 1989. People and Trees: The Role of Social Forestry in Sustainable Development. Washington, DC: World Bank, Economic Development Institute.

**Abstract:** Through the ages, trees have been essential to mankind's well-being; this book details their role in sustainable development. Part I deals with the contributions that social forestry makes to solving some major development problems. Chapter 1 provides an overview of the contributions of social forestry environmental protection and sustainable development. Chapter 2 focuses on how social forestry relates to environmental protection and sustainable development, and chapter 3 highlights ways in which trees can be incorporated into farming systems to increase agricultural productivity and contribute to food security. In chapter 4, the discussion turns to the contributions of social forestry to programs for overcoming the rural fuelwood crises that affect so many nations. Finally, chapter 5 focuses on the ways in which social forestry and related, traditional, small-scale processing activities can help to reduce unemployment and provide opportunities for generating income and investment returns for rural people.

Part II deals with social forestry project planning and implementation issues. Chapter 6 summarizes a basic planning framework and comments on the process of applying the framework in practice. The chapter also highlights substantive issues of particular concern in social forestry projects planning and implementation and shows how they are related. Chapter 7 through 14 discuss specific issues, such as local participation, incentives, and research, in detail. Chapter 15 provides a review and a checklist of topics and ideas that project planners and administrators might consider when planning and implementing social forestry projects.

Gregersen, Hans, Peter Oram, and John Spears, eds. 1992. Priorities for Forestry and Agroforestry Policy Research: Report of an International Workshop. Washington, DC: International Food Policy Research Institute.

**Abstract:** This report documents the outcomes of a July 1991 workshop and contains the background papers used as springboards for discussion. Five thematic working groups discussed the following topics and identified policy research priorities:

1. Population distribution and growth, deforestation, and land use in wet tropic forest zones. Research should be geared toward reducing migration to agricultural frontiers and speeding the transition to more sustainable forms of land use;
2. Options for reclamation and utilization of degraded forest lands in dry regions. Studies of improvement in land use to increase rural welfare should be undertaken to reflect the range of social and economic conditions that are often a function of ecological potential in dryland areas;
3. Intensive, sustainable land-use systems involving trees in upland watersheds and the preservation of woodlands. Research should be designed to evaluate how the quality of life of people in these areas can be improved, and how environmental conditions in uplands can be maintained in a way that benefits populations both upstream and downstream;
4. The role of trees in rural income and welfare security. Proposed research priorities focused on the relationship of trees to household income and subsistence; such as, patterns of demand for tree products, markets (including pricing) for tree products, land and tree tenure, and institutional support (e.g., extension, credit); and
5. Intersectoral policy issues. Research is needed to assess the effects on forests and trees on farms of policies in other sectors; in particular, macroeconomic policies, agriculture and forest interactions, and institutional implications of linkages. Policy measures are required to reduce negative and enhance positive intersectoral effects.

Groenfeldt, David J. 1992. Natural Resources Policy Reform in Africa: A Provisional Assessment of USAID's Experience. Washington, DC: World Resources Institute.

**Abstract:** The policies that govern the use of natural resources are often cited as the ultimate causes, as well as the best potential solutions, for resource degradation. Development projects that limit their scope to field level are often evaluated as having minimal effect because policy factors were not addressed and/or because of the small scale of the field effort. At the same time, however, field studies often show a very inconsistent link between national policies and a government's operational ability to implement those policies at the local or community level. This paper looks at approaches that USAID has taken in its efforts to influence natural resource policies in Africa, and takes case studies from Ghana, Niger, Rwanda, and Madagascar.

The non-project assistance (NPA) approach is concerned with the policy environment within which development assistance projects are implemented. The author presents a table outlining the resources for NPA support for policy reform (i.e., cash transfer program sector assistance, PL 480 Food Aid, and Title I and Title III loans) and their application (i.e., structural adjustment, long-term economic development in a sector, food aid as an incentive). The NPA approach is also discussed vis-a-vis the actions of other donors and the need for its effective management.

The paper concludes by focusing on three specific components of the NPA-stimulated policy reform process:

1. Levels and types of policies - (a) focus on rationalizing agricultural policies and rely on secondary influences on natural resource policies (e.g., Ghana's Agribusiness Development Program); (b) link agricultural and natural resources policies (e.g., Niger's ASDG-I); and (c) focus on biological conservation (e.g., Madagascar's SAVEM and KEAPEM);
2. Effective USAID actions - NPA has achieved policy results in the short-term, but conventional types of project activities also play an important role in policy change. Institutional strengthening is an effective strategy in conventional projects as well as NPA; and
3. Policy sustainability - Factors which appear to condition long-term viability of policies include; (a) taking into account existing policies and conflicts; (b) grounding the policy in reality and understanding local capacity; (c) communicating and agreeing on proposed policy changes with the government agencies; (d) being consistent with other donors; and (e) ensuring institutional and technical capacity are in place in order to implement the policies.

Hannah, Lee. 1992. African People, African Parks: An Evaluation of Development Initiatives as a Means of Improving Protected Area Conservation in Africa. Washington, DC: Biodiversity Support Program and Conservation International. Report prepared for the U.S. Agency for International Development.

**Abstract.** This study evaluates the success of recent donor-funded efforts to improve the effectiveness of managing protected areas, which in many African countries have been subject to increasing population pressures and economic development needs. These projects have tried to involve local people in park management and offer development benefits to local communities. Ten projects were evaluated, located in Burundi, Kenya, Madagascar, Niger, Rwanda, and Zambia. The projects have an average implementation life of about five years. Development activities promoted include agricultural improvement, local institution-building, agroforestry, and wildlife utilization (including tourism).

Lessons from the study for the design and implementation of successful area conservation interventions include:

1. Technical assistance: include top level experts in at least the first five years of implementation;
2. Development approach: tailor development methods to local conditions, respect local leadership and culture, and use both bottom-up and top-down techniques;
3. Local and national support: build support at all levels, with donors, developing country governments (national, regional, and district), and local communities;
4. Enforcement: strengthen enforcement side by side with community development, building on traditional resource management strategies wherever possible; and
5. Project timeframe: plan a long project life, allow for project errors, learn from mistakes, be adaptive.

Hassan, H.M, B. Wayne Luscombe and Felipe Villagran. 1990. "Natural Resources Information Management in Africa: An Integrated Approach." Washington, DC: World Bank, Environment Department.

**Abstract:** There is a keen awareness that long-term economic development in Africa depends heavily on the sustainable management of its natural resources. The past several decades have witnessed an accelerated process of environmental and resource degradation in almost all parts of the continent. Information on the current condition and changes in the resource stocks is a critical component of any strategy for combatting these degradational processes and for preparing sustainable development programs. This paper examines the issues of natural resource information management activities in Africa, and proposes a strategy for developing a demand-driven, integrated, and coordinated approach.

The study focusses on issues concerning problem identification, institutional requirements, technological compatibilities, and donor coordination. It proposes a strategy for developing a coordinated and integrated approach amongst the various agencies and countries involved in resource management. This strategy emphasizes a comprehensive consideration of the problems regarding the requirements at regional, national, and local levels as well as the interactions and coordination between and within these levels.

Heermans, John and Greg Minnick. 1987. "Guide to Reforestation and Management in the Sahel Based on Case Studies at the National Forests of Guesselbodi and Gorou-Bassounga, Niger." Washington, DC: U.S. Agency for International Development.

**Abstract:** This volume provides a comprehensive case study of the creation of forestry cooperatives at the national forests of Guesselbodi and Gorou-Bassounga based on the results of work conducted through the USAID Forest and Land Use Planning (FLUP) project. It includes many of the operational strategies used by the local resource users, the government and various technical assistance groups to form new management and administrative structures.

Successful strategies used in forming the forestry cooperatives include:

1. Sound technical management, including the creation and use of resource maps, site and species evaluation, and applied research within the technical assistance framework.
2. Sound economic principles, where forests are chosen based on their economic potential, and where the management of the forests is treated like a business (with reinvestment, building capacity, professional staff, and contract agreements).
3. Wide inclusion of interested stakeholders at the formation of the project by the technical assistance agency (Cooperative League of the United States of America - CLUSA). This included separate planning meetings with youth, women and other interest groups to determine needs and benefits.
4. Long-range financial planning which included a 20-year cost benefit analysis based on actual and project costs and revenues, and which assumed a need for one-time investments and recurrent costs. The 20-year timeframe was divided into three periods: (a) initial startup (infrastructure and studies); (b) restoration and management; and (c) maintenance and management.

Hirji, Rafik and Leonard Ortolano. 1991. "Strategies for Managing Uncertainties Imposed by Environmental Impact Assessment: Analysis of a Kenyan River Development Authority." Environmental Impact Assessment Review, Vol. 11, pp. 203-230.

**Abstract:** Using an example in Kenya, this article presents a case of conflicting priorities: a focus on hydroelectric power projects and irrigation, which generate short-term results, versus plans which promote sustainable development, and conservation of the environment through compliance with Environmental Impact Assessment (EIA) recommendations. One problem with the latter choice was the lack of strong incentives for the enforcement and compliance with EIAs. The general population did not have any strong concerns about environmental protection and did not support institutions set up for this purpose, and there were no strong enforcement mechanisms. International donor conditionality, however, is shown as an incentive for EIA compliance.

The authors offer suggestions to donors for projects to address environmental concerns. These include:

1. Provide consistent and rigorous oversight of the implementation of EIA requirements (including the delineation of terms of reference and the selection of consultants) and carefully evaluate the need for action on EIA recommendations;
2. Understand that delays occasioned by protracted negotiations over EIA funding and scope can result in EIA recommendations being presented after hard-to-change project decisions have already been made;
3. Improve communication and coordination among development assistance organizations working in the same river basin; and
4. Recognize that minimizing a development agency's role in EIA can reduce the chances of positively influencing the agency's approach to environmental issues.

Honadle, George. 1990. "People, Markets, and Trees: Institutional Dimensions of Tropical Deforestation." Los Angeles: Paper presented at the 51st National Conference, American Society for Public Administration, April.

**Abstract:** This paper discusses organizational and institutional factors that influence attempts to contain tropical deforestation. It analyzes the major causes of deforestation in the tropics, identifies key roles played by formal organizations in natural resources management (NRM), and outlines the institutional considerations relevant to strategy and tactics for reducing deforestation

Honadle calls for a combination of research and technical assistance to address institutional issues. Three types of studies are needed: 1) comparative assessments of the relative institutional strengths and weaknesses among sectors and countries (e.g., percent of public budgets for natural resources protection, presence or absence of key NRM policies and incentives); 2) case studies of how particular institutional configurations evolved with attention to informal mechanisms that promote performance, and 3) examination of traditional NRM systems used by indigenous people that can serve as input for institutional innovation.

Seven targets of technical assistance are recommended:

1. Changing the budget allocations of NRM agencies relative to resource exploitation agencies (e.g., ministries of agriculture);
2. Strengthening organizational incentives for NRM agencies;
3. Assisting in NRM agency reorganizations and clarification of their jurisdiction and authority;
4. Generating opportunities for villagers to engage in non-destructive natural resource use as part of their livelihood strategies;
5. Review of land tenure systems and their effects on deforestation, land use, and land distribution;
6. Developing NRM policy analysis units in finance ministries; and
7. Building management capacity in NR protection agencies, NGOs, local government units, and community organizations.

Honadle, George and Lauren Cooper. 1989. "Beyond Coordination and Control: An Interorganizational Approach to Structural Adjustment, Service Delivery, and Natural Resource Management." World Development, Vol. 17, No. 10, pp. 1531-41.

**Abstract:** A common assumption in development programs is that single implementing agencies can control the actors and resources needed to achieve significant progress. The authors report, however, that recent experience with structural adjustment, service delivery, and natural resource management suggests that many development problems must be attacked at an interorganizational level. This requires abandoning counterproductive approaches to management control and coordination and analyzing ways to bring various stakeholders into the program process. The authors present a field-tested method for doing this while facilitating sustained institutional development through the strengthening of local interorganizational networks.

The authors state that efforts to reduce environmental decay and conserve natural resources are unlikely to succeed without cooperation among numerous institutions and social groups. For instance, efforts to save rapidly depleting coastal resources must cut across sectors, jurisdictions and institutions. Natural boundaries do not follow organizational boundaries. Similarly, wildlife, tree, and soil conservation need cooperative efforts by all sectors of society at the local, regional and national level.

The authors offer advice on such cooperation. They state that national programs that focus on natural resource bases invariably encounter jurisdictional dependencies which management control as impossibility. Effective influence strategies for dealing with key stakeholders may make the difference between success and failure for many resource management programs. Influencing human behavior is key to conserving and renewing resources, and giving resource managers and protectors institutional knowledge and tools is as crucial as giving them technical know-how.

At the community level, resource management calls for successful local organizations that establish linkages with other community and national organizations and engage in active exchanges with them. The approach advocated in this article seeks to facilitate such exchanges, reverse environmental deterioration, and builds elements of the institutional development necessary for sustained development.

Kyle, Steven. 1989. "Structural Adjustment and Natural Resources: An Overview of the Issues." Ithaca, NY: Cornell University. Cornell Agricultural Economics Staff Paper.

**Abstract:** Kyle discusses the effects of the World Bank structural adjustment (SA) programs on agricultural and natural resource use in Sub-Saharan Africa. The thrust of the policy reform packages is to promote increased production of traded goods (mainly agricultural in origin); this signifies pressure on agricultural resources, particularly land. The change in patterns of land and water use imply changes in the environment. Given that agricultural development is desirable, actions have to be taken to make this development sustainable. The paper concludes with recommendations for the World Bank to alleviate adverse environmental effects of structural adjustment programs. In sum, the author advocates slow implementation of flexible reforms, emphasizing that prescriptions to promote environmental concerns must focus on the overall aims of structural adjustment programs

The author states that given the need for World Bank involvement, and the potential for the Bank to have a significant influence, there are a variety of ways to improve performance. Some of these relate to long-term effects of SA programs or Bank operations while others are of a short run or transitory nature. These actions include restraint in privatization, provide funds needed to make investments which will promote environmentally sustainable development, increased emphasis on research and extension, and evaluate carefully the risks of proposed projects. The author concludes that what is needed is recognition of the problem (adverse effects of SA programs) and a will to implement "reforms of the reforms." The author also advocates debt relief to facilitate growth and development.

Land Tenure Center. 1991. Workshop on Tenure and Management of Natural Resources in Sub-Saharan Africa. Arlington, VA: University of Wisconsin for USAID. February 13.

**Abstract:** "Tenure" is a bundle of rights which a user or group of users have in a resource, and the distribution of these rights to land trees, and other resources among individual farmers, communities, and the state affect the management of those resources. The Land Tenure Center, University of Wisconsin, pursues three tenure situations within its examination of NRM in Africa: (1) individual farm holdings; (2) common grazing and forest resource situations; and (3) where plant and wildlife resources merit protection as a reserve.

Four case study papers from the workshop outline the issues of tenure and management of natural resources in Sub-Saharan Africa. They are as follows:

1. "Tenure and the Adoption of Agroforestry Resources," by John Bruce, emphasized factors in tree tenure which included the characteristics of the right-holder, the tree characteristics, and the tenure on the land on which the trees were planted;
2. "Forest Codes," by Steven Lawry, outlined the 1935 French West Africa Forest Code, and how Mali, Senegal and Niger are interpreting the Code. In general, the NR rights of individuals have decreased, permits and fines are important sources of operational revenue for the forestry services, and regulatory policy does not take into account farmers' overlapping interests in agriculture, forestry, and grazing;
3. "Buffer Zone Management: Access Rules and Economic Realities," Peter Bloch, outlines the concept of buffer zones for local peoples, nations and the international community in terms of who incurs the costs and who receives the benefits from their creation. Customary access rules are often different than formal NRM legislation, and the economics of present value and future value of NR to a range of beneficiaries are complex; and
4. "Whose Forests: Land Tenure Dynamics on Zaire's Ituri Forest Frontier," Richard Peterson, outlines the spontaneously evolved tenure arrangements, concessionary claims and smattering of national parks and forest reserves that complicate tenure relationships in Zaire. Specific tensions include different needs of farmers versus populations of hunter-gathers, lack of clear legal protection for customary tenure, and confusion over the roles of traditional administration and customary administration.

Lawry, Steven W. 1988. "Trip Report to USAID/Mali" Madison: University of Wisconsin, Land Tenure Center. Unpublished Document.

**Abstract:** The stated purpose of this trip included: (1) to inform USAID/Mali of services available under a new Africa Bureau grant between the Land Tenure Center to examine relationships between tenure and natural resource management in Sub-Saharan Africa; (2) to review with the Mission how tenure issues may be affecting implementation of Mission programs and activities in specific natural resource areas; and (3) to collect case materials for a paper prepared for a Club du Sahel/CILSS conference on environmental management problems in the Sahel.

The author reviews tenure and NRM issues specific to the Village Reforestation Project (VRP) and issues affecting integrated resources management in the Niger River Delta. In the VRP, the aim of the project was to transform the Forest Service from a NR policing force to one that emphasized extension and protection. The collection of fines was suspended, and the project provided a differential payment for the loss of fine income. Although village attitudes toward NR were evaluated to be changing, poor leadership and management were limiting factors. Regulatory practices by state and local government officials were arbitrary and economic returns to farmers were sufficiently uncertain as to discourage tree planting on farms

The Niger River Delta has been subject to increasing population pressures and intensive agricultural use, exacerbating conflict between herders, fisherman and irrigated rice producers. Former traditional systems of tenure have been replaced by state control at the time of independence, and the delta is now void of any institutional or tenorial basis for resource management and control. The government of Mali, aware of the severity of the problems, is encouraging (with donor support) a land use plan study which identifies areas of conflict between resource users, and an assessment of traditional institutional arrangements for managing common property issues.

Lawry, Steven W. 1991. "Structural Adjustment and Natural Resources: The Role of Tenure Reform." Madison: University of Wisconsin, Land Tenure Center.

**Abstract:** The World Bank, states the author, has no readily discernable package of structural adjustment interventions driving its policies toward NRM in sub-Saharan Africa. This is in some respects understandable, since NR problems are diverse and complex, and that it has been only recently that the World Bank and other donors have addressed these problems in a deliberate fashion.

Reasons for resolution of tenure laws, rules and conventions include: insecure tenure can lead to under-investment because of uncertain long-term land and tree tenure rights; and increasing off-farm income has reduced the attractiveness for economic incentives for NR investment. The prescription of individual titling and registration schemes, often suggested by the World Bank and other donors as a greater measure of security for individual farmers, has often not been stronger than customary systems, and does not justify the high costs and revision of administration structures.

A sound donor strategy for tenure policies should include:

1. Strengthening the security of tenure on individual farms and on the commons, but not necessarily with land titling at the core of the intervention;
2. According local communities greater control over their common property natural resources with accompanying technical assistance to form new management structures, legislation, and linkages to state agencies; and
3. Assistance in reforming agency functions away from policing and administration of resource use, and toward providing extension services and technical assistance to users.

Ledec, George. 1985. "The Political Economy of Tropical Deforestation." In H. Jeffrey Leonard, ed. Divesting Nature's Capital: The Political Economy of Environmental Abuse in the Third World. New York: Holmes and Meier, pp. 179-226.

**Abstract:** Ledec identifies five causes of tropical deforestation: 1) slash-and-burn agriculture, due to population pressures and transmigration policies; 2) commercial timber exploitation; 3) cattle raising; 4) fuelwood gathering; and 5) commercial agriculture and plantations. Analyzing deforestation in terms of winners and losers, he notes that the most acutely affected losers from tropical deforestation are the rural poor, who are not of primary political significance to national policy makers. Many present-day rural victims of deforestation are also the perpetrators, due to the livelihood strategies they pursue.

Foremost among the winners are government leaders for whom deforestation serves as a short-term safety valve that alleviates political pressures resulting from an unwillingness or inability to confront major problems effectively, e.g., effective land reform, population control, and expansion of modern-sector employment. To the extent that sincere efforts to control deforestation are made, their effectiveness is impeded by weak institutions, lack of trained personnel, insufficient budgets, and widespread corruption.

The benefits of tropical forest conservation are usually diffuse (watershed services, for example, are a public good), difficult to measure, and largely in the future. Meanwhile, the costs of conservation directly affect important constituencies, are very easy to measure, and occur in the present. This is true of both direct costs, such as patrolling protected areas, and opportunity costs, such as foregoing the revenues from timber exports.

Ledec, George and Robert Goodland. 1988. Wildlands: Their Protection and Management in Economic Development. Washington, DC: World Bank.

**Abstract:** In a 1986 policy statement, the World Bank formally recognized that provision for some kind of wildland management should be part of any development project that affects wildlands and that wildland management should be considered in economic and sectoral planning. This book comprehensively discusses issues and tradeoffs that arise in carrying out this policy in widely differing circumstances around the world. The book is intended for development professionals worldwide, including the staffs of international development organizations and government agencies that deal with natural resources. The authors show how wildlands contribute substantially to economic development and to the well-being of the population, particularly in the long term, and how the policy of incorporating wildland management into development plans has been applied in specific cases and address some of the practical considerations in establishing and administering protected areas.

This volume has a number of useful sections pertaining to wildland and natural resource management, including: a glossary of natural resource management terminology; an economic analysis of wildland management; an analysis of accommodating the needs and interests of local people in wildland management, selected wildland management World Bank projects worldwide, an analysis of and a list of other resources for integrating wildland management concerns into project design; criteria and categories for wildland management areas; a management analysis of wildland management areas; selected international agreements; and organizations concerned with wildland management.

Leonard, H. Jeffrey. 1985. "Political and Economic Causes of Third World Environmental Degradation." In H. Jeffrey Leonard, ed. Divesting Nature's Capital: The Political Economy of Environmental Abuse in the Third World. New York: Holmes and Meier, pp.93-136.

**Abstract:** Leonard argues that the most serious resource and environmental problems in developing nations are more motivated by political and economic circumstances rather than by gaps in technical expertise and knowledge. Deeply rooted political and administrative structures and economic incentives induce the poor and not-so-poor to cut trees, abuse the earth's soil or cram into unhealthy living quarters. Corrupt officials, overly centralized bureaucracies, inequitable land tenure patterns, or pressures for short-term successes and projects may make reckless use of the land both rational and lucrative. Two economic problems that predominate in the rural sector in many developing countries-- pricing policy for agricultural goods and gross underemployment--are major contributors to long-term environmental problems such as soil erosion, loss of soil fertility, and deforestation.

Over-consumption or abuse of the local environment is built into the socioeconomic structure in many parts of Africa. Governments find it difficult to implement policies that ultimately would improve the long-term outlook for all, and few have found the will to force adjustments in the behavior of individual cultivators even when the future consequences of failing to do so are clear

The author draws the following conclusions:

1. Technical assistance and environmental guidelines for large projects will not by themselves lead to better overall environmental management;
2. Much greater attention should be devoted to overall development policy and incentives as a means to reducing local environmental abuse; and
3. In many countries, the direct dependence of surplus people upon the land must be broken through rural works programs.

Mallya, Fred and Kirk Talbott. 1990. "Constraints and Opportunities for Building Local Participation in the Uganda Environmental Action Plan." Washington, DC: World Resources Institute, Center for International Development and Environment.

**Abstract:** In response to the Uganda Government's request for World Bank assistance in preparing a National Environmental Action Plan (NEAP), a World Bank team visited Uganda in the fall of 1990. The purpose of the mission was: 1) to identify principal issues and problems involved in the initiation of a NEAP, and 2) to seek agreement with the Government of Uganda on procedures for developing the Uganda NEAP. Also, the team was to examine the local participation component of the NEAP process.

The specific objectives of the effort were to: 1) identify local level institutions that can be effectively utilized to mobilize grassroots participation in the NEAP process; 2) conduct a preliminary assessment of possibilities and constraints for encouraging local-level involvement in the NEAP process; and 3) recommend next steps for the NEAP team for encouraging local participation.

The recommendations for the NEAP team include:

1. Develop and administer a questionnaire in order to incorporate the basic environmental concerns of the local people in the planning process;
2. Avoid unnecessary competition and overlap in NGOs work by organizing NGO workshops and seminars at the district and national level;
3. Identify communities that have retained the institution of chieftaincy, as traditional institutions will form an important channel through which local popular participation can be enhanced in the NEAP process;
4. Involve people in activities which directly benefit them economically;
5. Strengthen women's NGOs and ministries that focus on women to increase their capacity to co-ordinate women's activities in the rural areas.

This report is meant as a first step in devising an effective strategy, building on other NEAP experiences, and involving all levels of Ugandan society in an action plan that addresses the fundamental priorities and needs of the people.

McLain, Rebecca J. 1991a. "Final Report: Village Reforestation Project Land Tenure Study." Madison: University of Wisconsin, Land Tenure Center, October.

**Abstract:** Malian forest policy, according to the author, is characterized by a concentration of power in the hands of the state and the virtual disengagement of rural people from responsibility over tree management. Given the Forest Service's limited resources and a general rejection of the forest code by the general population, an atmosphere of fear and antagonism exists between foresters and farmers, and is incompatible for forestry extension and management of natural resources.

A two-year study of land and tenure issues in the Fifth Region revealed that:

1. The Malian Forestry Code restricts landowners to cut and prune trees on their own land, and there is a general disincentive to protect and plant trees on the land;
2. The forest agents do not clearly understand the rights of individuals and the rights of the State. There is a wide interpretation of key clauses of the Forestry Code by individual agents, and many agents lack knowledge in forest legislation and basic legal principles; and
3. Mali's Forest Code currently fails to clearly designate what rights private individuals and groups have to trees located outside of state forest domains. Many agents see on-farm trees subject to the same laws as protected forests.

Recommendations for changes to the forestry code include: the development of a national guideline forest law, with specific regulations developed at the regional and sub-regional level; restrictions on protected species developed according to ecological zones; specifications for pruning and harvesting; and the lowering of minimum fines to reflect the financial means available at the village level.

McLain, Rebecca J. 1991b. "Report 4: Forest Agency Survey. Land Tenure Project, Mopti, Mali." Madison: University of Wisconsin, Land Tenure Center, July.

**Abstract:** A problem in implementing forestry policy is the misapplication of forestry regulations, fostered by inadequate training of agents in the provisions of the Forest Code, and the public's reliance on agents to inform them of their rights and obligations. This report presents the findings of a survey of 37 Malian forest service agents to identify the sections of the Code that are the source of greatest confusion about individual and public rights, or that serve as disincentives to tree planting and protection on cultivated land.

The survey showed that most foresters believe the Code requires villagers to contact them prior to pruning or cutting trees on private land. Most foresters require fees for cutting permits, although the Code allows agents to issue cutting authorizations free of charge, this is rarely done. Many villagers are unaware of this provision.

Forestry agents are ill trained in forest legislation and basic legal principles. Some training centers do not have the updated text of the Code. The Code is written in French, and no explanatory materials in local languages are available. Agents rarely hold village meetings to explain the Code, and most use interpreters for communication with local populations. Most foresters feel the Code needs to be revised; minimum fines are too high, the role of the state is unclear, and private rights to trees outside of state forests are not clearly designated.

The report's recommendations include:

1. The Code should be revised to clarify both public and private rights in the forest and non-forest domains. Regional and local regulations, rather than national, need to be developed with villager input, within a set of national guidelines;
2. The free cutting authorization process should be eliminated for trees on private and non-forest land, and a new system of protection for state forest trees be developed because effective enforcement is not feasible; and
3. Training of agents in the provisions of the Code needs to be improved, along with materials and curriculum development. Translation of regulations into local languages for distribution to the public should be undertaken, and a simplified manual developed. A cassette version of the manual should be produced for non-literate villagers.

Miller, Morris. 1991. Debt and the Environment: Converging Crises. New York: United Nations Publications.

**Abstract:** The world is in crisis due to the high indebtedness of many countries, and due to the environment's deterioration. The premise of this book is that the way populations live today results in progressive environmental deterioration; and continued, increasingly high indebtedness prevents alleviating that deterioration. The author explains how these twin crises reached their present magnitude - how third world debt and growing U.S. foreign debt (the "second debt crisis") have combined with looming environmental emergencies to create urgent challenges to those promoting economic development.

Conditions necessary for resolving the dilemma include the creation of congenial international conditions, financial assistance and leadership roles of key players. Miller assesses major obstacles to change, then reviews market-based and debt-reduction proposals for tackling the crises.

Miller demonstrates how development, debt, and the environment are dependent upon each other, and proposes a new global regime to reverse the mistakes that brought on the current crises. He suggests a massive restructuring of international lending and a renewed commitment by the economic superpowers to clean up both their environments and their balance sheets, and to help the developing world do the same. Miller proposes a drastic reform of decision-making processes and institutions that determine the current policies in environmental and debt managements, yet political realities appear to preclude his recommendation. But his work brings attention to the seriousness of the debt and environmental issues.

Recognizing that previous economic regimes, norms and practices have not been friendly to the environment, The author would incorporate many environmentally oriented facets into his proposed New Bretton Woods agreement, a monetary regime that would set the rules for trade and capital flows and reestablish pre-1970s controls over mounting debt. These facets include funding of international-scale programs to study technological, economic and social aspects of the environment, such as how trade and capital flows affect the environment. In addition, there would be more debt relief through debt-for-nature swaps, technical assistance to developing countries, and the establishment of minimum acceptable international environmental standards. Drawbacks to Miller's proposal are that he does not outline a system of rewards and penalties that would overcome international collective-action problems, and that substantial financial outlays from the wealthiest countries are required to implement his recommendations.

Millington, S.J., Anada Tiega and J.E. Newby ed. 1991. Biological Diversity in Niger: A Preliminary Assessment Commissioned by the United States Agency for International Development. Gland, Switzerland: World Wildlife Fund for Nature, International.

**Abstract:** This preliminary assessment of the biological diversity in Niger is presented in four parts: (1) the status of biological diversity and its conservation; (2) the economic value and uses of biodiversity; (3) the institutional aspects of biological diversity; and (4) recommendations. The purpose of the study was to provide a starting point for further consideration of biological diversity concerns and issues in Niger and encouragement to integrate biological diversity conservation in the economic and cultural development of the country.

A need for revision of the Niger Forest Code and protection of natural resources led to a national debate which proposed three long-term goals: (1) to assure food self-sufficiency; (2) to satisfy energy needs; and (3) to protect and restore the environment. A tension however, exists between the drive for food self-sufficiency (and clearing of lands for agriculture) and environmental concerns. The authors also outline: international conventions ratified by Niger, national environmental plans aimed at formulating a coherent national natural resource management strategy; traditional cultural and religious significance of biodiversity, governmental, non-governmental, and international organizations involved; training establishments and strategies; and research agencies and educational initiatives.

Fifteen detailed recommendations are provided, which include:

1. Fully incorporate and integrate biological diversity concerns into the national NRM strategy;
2. Produce a strong policy statement, backed by appropriate legislation for the banning of hunting of large animals and birds by the military and other influential groups;
3. Support selected interventions on a pilot basis to optimize biological diversity conservation while decentralizing rights and responsibilities to local user groups, including a monitoring and evaluation component;
4. Explore opportunities to support local environmental NGOs; and
5. Investigate the possibilities for involving the private sector in commercial enterprises favoring biological diversity conservation (ie, ostrich farming).

Morell, David with Joanna Poznanski. 1985. "Rhetoric and Reality: Environmental Politics and Environmental Administration in Developing Countries." In H. Jeffrey Leonard, ed. Divesting Nature's Capital: The Political Economy of Environmental Abuse in the Third World. New York: Holmes and Meier, pp. 137-179.

**Abstract:** This chapter examines the political and administrative context of environmental policies. Many of the laws and regulations in developing countries contain admirable rhetoric: strong goals, strict standards, actions designed to alleviate ecological damage or avoid new problems. Most legal frameworks for environmental policy stress centralization and the role of the state. In reality, however, enforcement of these laws has been weak or nonexistent. Organization and manpower are often inadequate to cope with basic economic and political problems, let alone with environmental problems. Most new environmental institutions in developing countries are small or ineffectual in the face of their powerful competitors for bureaucratic power.

Governments rarely undertake serious environmental policies in the absence of political pressure from societal groups (or from foreign governments). Administrators have a strong urge to avoid the political conflicts inherent in environmental policy, which is typically very controversial. Corruption provides the prevalent mechanism for nonenforcement of applicable laws, standards, and regulations. Governments respond mainly to their urban elite constituencies, and the political weaknesses of rural people and the massive difficulties in implementing rural programs constrain the political salience of rural environmental issues.

The authors ask whether, given the inability to enforce existing statutes, it is better to have many strong regulations that go unenforced, or to have instead a small number of strategically selected enforceable regulations that begin to change behavior incrementally. No public administration apparatus can do everything, priorities have to be established. The danger, however, is that personal favoritism and political opportunism will overwhelm technical criteria in environmental policy formulation.

Muir-Leresche, Kay. 1989/90. "Forest Policy: An African Perspective." Journal of the Board of Agriculture, Vol. 19, Nos. 1&2, pp. 121-134.

**Abstract:** The author describes policy as "a deliberate intervention by the state in the existing order so as to improve human welfare or to redistribute assets and income." She then discusses various policies in Africa which directly affect the maintenance, development and utilization of forest resources and their impacts on attitudes toward trees. Stating that rural communities are not inclined to deliberately degrade the environment, she emphasizes that national policy reform must be designed with community concerns and participation in mind

The article highlights the coordination of interests in forest policy, and recommends that the objectives of all interested parties be clearly stated for maximum understanding. An assessment of results in relation to stated objectives will facilitate the measurement of policy success or failure. The author cites rural afforestation activities in Africa as projects which have often failed in the past largely due to the lack of clearly outlined objectives and /or seriously conflicting objectives between client populations and implementing agencies. Thus, project failure cannot necessarily be attributed to poor execution but to wrongly conceived policies and mechanisms.

Nagle, George S. 1990. "The Forestry Sector of Madagascar." Washington, DC: Nawitka Renewable Resource Consultants Ltd. Paper prepared for USAID/Madagascar.

**Abstract:** The document is a brief review of the forestry sector in Madagascar. The conclusions include: 1) the extent of natural tropical forest which is being deliberately managed for sustainable timber production in Madagascar is negligible on the national scale; 2) progress on effective controls is far behind the current rate of destruction; 3) priceless ecosystems, on a global scale, are severely at risk; fortunately awareness of these risks to biodiversity is growing in Madagascar and in the world; 4) the future existence of natural tropical forests (moist and dry) in Madagascar depends on the development of economic sustainable management systems - preservation or exclusion approaches cannot do the whole job, and 5) there is a need for modification of public forest management policies and the creation new policies to clarify and restructure the essential processes of bringing "tree technologies" into the farm and range landscapes of Madagascar, outside classified forest, in order to reduce the demands for utility wood and fuels from the residual natural forest.

The existing forest policy and legislation framework in Madagascar is not, according to the author, the principal problem. Most of the necessary legal framework exists for sustainable natural forest management. The major problems lie in the details of natural forest and farm forest policies/programs. To make sustainable natural forest management an operational reality, these highly valuable public assets must be treated as such. Special techniques and practices must be developed and extended to farmers, and tree and land tenures in rural areas need to be compatible with woodlot and pasture improvements over time, rather than inhibiting/preventing such developments. To enable field execution of these changes in the diverse regions of Madagascar, the responsible agency must have a local presence, knowledge, management, and communication systems with local residents, farmers, and forest workers.

Three fundamental problems or issues of natural resources management in Madagascar exists, under which the detailed regulatory and technical issues can be integrated. These are: 1) the management of public forests as national assets; 2) the indigenization of forest values (to local level) and 3) the enhancement of tree management in the farm landscape.

Nagle, George S. 1991. "Structural Adjustment Programmes and the Forestry Sector."  
Ottawa: Canadian International Development Agency, Forestry and Conservation  
Sector.

**Abstract:** This study is a review of the objectives and impacts of Structural Adjustment (SA) Programs in developing countries, with particular reference to their impact on forest management and forest resource conservation. In addition, recommendations regarding CIDA planning and in sustainable forest sector development, within the new economic environments being generated through various SA programs, are included.

The study and the recommendations involved review and analysis of:

1. Planned impacts of various SA measures in developing economies - e.g. currency revaluation, increased freedom of trade, more restrictive fiscal and monetary policies, and legislative, institutional and market reforms;
2. Impacts of these and other tools of economic adjustment on forest sector structures and institutions, forest utilization and land use, and resource sustenance over time,
3. Important social or distribution impacts in the forestry sector, due to SA reforms:  
and
4. Examples or ways in which revised development of forestry and conservation projects might contribute toward the macroeconomic objectives of structural adjustment.

Niamir, Maryam. 1990. "Community Forestry: Herders' Decision-making in Natural Resources Management in Arid and Semi-arid Africa." Rome: Food and Agriculture Organization of the United Nations.

**Abstract:** This report is one of a series of studies designed to clarify local decision-making, priorities, and knowledge in the management of tree and forest related resources. The report fits into the overall objective of helping the FAO analyze the role that local knowledge and management systems (LKMS) of natural resources can play in FAO's development projects and programs. The approach of this report centers on literature review of existing information on arid and semi-arid Africa. This includes North Africa, the Sahara, the Sahel, the semi-arid parts of the Sudan zone, and the arid zones of southern Africa

The majority of production systems in these arid zones in one or another rely on livestock. Thus, pastoral systems is the main focus of the report, and emphasis is placed on the use and management of natural resources, primarily vegetation and water. Other production systems that rely on resources in their natural state, such as hunting, gathering, fishing, and wood collecting, are also considered. Additionally, the authors state general conditions that need to be met before LKMS can be used in development programs

As part of their conclusions, the authors report that in general, if a traditional practice or knowledge is still in use, even if by a small portion of the population, it can be considered to be viable. If social cohesion and political authority are still intact then communal cooperation for natural resource management is still viable even if de jure land tenure has been destroyed

The authors also conclude that national policy on land tenure is often one of the stumbling blocks for proper management of natural resources. Decentralization of the tenure structure to give greater control over natural resources to the local people would be a probable solution. However, resource tenure decentralization is also a politically sensitive issue with a potential for creating or aggravating regional competition and conflicts.

O'Keefe, P., J. Kirby and I. Cherrett. 1991. "Mozambican Environmental Problems: Myths and Realities." Public Administration and Development. Volume 11, pp. 307-324.

**Abstract:** This article assesses the resource potential and environmental problems facing Mozambique, stating that the current war gravely affects the development potential of the country. The problems are identified on a local, not national level, as the war has forced civilians to migrate to certain "safe" areas and exploit the resources available there; in general, there is a lack of popular pressure on and utilization of rich resources. In wartime, no reasonable environmental management strategy can be initiated; disruptions of the war will determine both short and long-term problems and use of the environment. However, despite obstacles, small-scale schemes to promote responsible development can be attempted. Small-scale schemes encourage the participation of the family sector, which is a strong social unit and one more "reliable" than other associations during war time, and are less likely to become targets of guerrilla activity.

In sum, within such a development context, natural resources management project possibilities are limited, survival is the goal. Any efforts must start from accepting a level of inevitability about new settlement patterns developed during war-time.

Okigbo, Bede N. 1990. "Sustainable Agricultural Systems in Tropical Africa." In Clive Edwards, et al, eds. Sustainable Agricultural Systems. Ankeny, IA: Soil And Water Conservation Society, pp. 323-353.

**Abstract:** A sustainable agricultural production system is a dynamically stable and continuous production system that achieves a level of productivity satisfying prevailing needs and is adapted continuously to meet future demands for increasing the carrying capacity of the resource base. Sustainability can be achieved only when resources, inputs, and technologies involved are within the capabilities of the farmer to own, hire, maintain, and orchestrate with increasing efficiency to achieve desired levels of productivity in perpetuity, without adverse effects on the resource base and environmental quality. This chapter evaluates agricultural systems in tropical Africa, and the author offers recommendations toward sustainable agriculture in the region.

These recommendations include.

1. Develop policies, strategies, and measures aimed at integrated natural resource conservation and management, of which sustainable agricultural production is a component.
2. Base all agricultural development projects on sound ecological principles to ensure that each program is carried out in areas that have the highest potential for producing the commodities.
3. Develop technologies that address the needs and problems of women, who in certain operations are more involved in farming than men.
4. Seek institutional linkage and collaboration of sufficient scope among developing countries and with developed countries to take advantage of advances in emerging technologies, such as biotechnology.
5. Provide more conferences on agriculture to ensure updating in research and development. A special project should be launched on the collation and assessment of indigenous knowledge systems and technologies in sustainable agriculture.

Peuker, Axel. 1990. "Debt-for-Nature Swaps." Washington, DC: World Bank.

**Abstract:** This paper examines some important issues surrounding the desirability of Debt-for-Nature Swaps, i.e., debt conversion related to environmental investments. It shows that, though these Swaps are no panacea for debt or environmental problems, they can be an attractive instrument for NGOs, creditor countries can debtor countries alike.

The author introduces the concept of a Debt-for-Nature Swap and provides a description of some of the varieties of such a Swap. Next, he briefly describes two Debt-for-Nature Swap operations undertaken in Madagascar, and analyzes the benefits of such swaps for the various actors involved. Attention is then given on the role multilateral development agencies can play to further Debt-for-Nature Swaps

In the last section, the author states his conclusions. While benefits and motivations may differ across actors, on the whole there are good economic, political, and public relations reasons for pursuing Debt-for-Nature Swaps. NGOs are the main beneficiary of these transactions. Creditor countries can use these Swaps as a convenient mechanism to strengthen public support for official debt relief while at the same time contributing to the preservation of fragile eco-systems which often are of global importance. Debtor countries can attract additional funds by offering leverage and direct them to environmental activities which are in their long run interest. The potential role of multilateral agencies consists mainly in serving as a broker and providing information and technical assistance concerning Debt-for-Nature transactions.

Poore, Duncan and Jeffery Sayer. 1988. The Management of Tropical Moist Forest Lands. New York: United Nations Tropical Forest Programme.

**Abstract:** Every policy in tropical developing countries - in particular, agriculture, energy and industry - has an impact upon tropical forest resources: and the effects of all these sectors are, in turn, greatly influenced by national economic, financial and social policies. In addition, the fate of tropical forests can be determined by policies set in other countries, through the often dominant effects of trade, aid and debt. According to the authors, more tropical forest degradation is caused by the direct or indirect effects of poor policy outside the forestry sector than by forestry policy alone.

The authors divide their government policy review into: policy review and formulation national conservation strategies, economic, financial and fiscal policies; trade and international relations; sectorial policies, and social and settlement policies. After each section are practical guidelines to consider for policy implementation, twenty-six guidelines in total. For example, guidelines for the trade and international relations section include:

1. Industrialized countries should formally recognize their dependence upon tropical forest by ensuring that trade and foreign relations policies encourage the sustainable development of tropical forest lands;
2. Commodity agreements should be formulated with the participation of producer and consumer nations on equal terms;
3. Tropical forests should not be exploited for short-term gains to repay foreign debts; and
4. Aid-assisted projects in tropical forest lands should only go ahead following a thorough economic, social and environmental analysis, preferably as part of a national strategy and with the assurance that their implementation will be sustainable.

Repetto, Robert. 1989. "Economic Incentives for Sustainable Production." In Gunter Schramm and Jeremy J. Warford, eds. Environmental Management and Economic Development. Washington, DC: World Bank, pp. 69-87.

**Abstract:** In this chapter, Repetto illustrates the scope for policy reform through discussion of some government policies that grossly violate both economic and ecological principles. He stresses that, to channel development activities into sustainable patterns that preserve the productivity of natural resources, appropriate economic incentives for millions of households, farmers, and small producers in developing countries need to be implemented. Incentive problems arise both from market failures, such as externalities, and from policy failures, e.g., price distortions.

Policies can be improved in ways that promote resource conservation, reduce environmental damage, and simultaneously raise economic productivity, decrease government budget deficits, and ameliorate rural poverty. Revising inappropriate pricing policies for agricultural outputs and purchased inputs, such as fertilizer and pesticides, can help. Reforming the financing of public irrigation systems may improve their performance and promote better water use. Changing inappropriate revenue systems and incentives for the use of forest resources could discourage wastage. Among countries heavily dependent upon their natural resources for sustained income growth, there is no conflict between good resource management and sound development policy.

Romm, Jeff. 1986. "Forest Policy and Development Policy." Journal of World Forest Resource Management, Vol. 2, pp. 85-103.

**Abstract:** Two approaches to the formulation of forest policy are distinguished. The traditional or "professional" approach treats forest in isolation from the welfare and behavior of nations in which they are located. The alternative "historical" approach suggests that forest conditions are greatly determined by the influence of population growth and economic development. While the professional approach is simplistic the historical approach could be considered fatalistic, as if the major determining forces were beyond control and use of the professional approach was justified after all.

This paper proposes an alternative view in which, if external social forces do indeed determine forest conditions, then governmental influences upon these forces offer appropriate levers for implementing forest policy. If the forest is determined primarily by happenings outside its boundaries, then the leverage for forest policy is similarly located elsewhere. If governments systematically influence the size and composition of their economic base, the size and distribution of their population, the allocation of power between central and local systems of authority, or the kind and degree of their international exchanges, then such existing policies can be used to achieve preferred forest effects. As governments influence these social relations by rather strong policy instruments, e.g. taxation, public investment wage and price management, the balance of economic and political priorities, exchange and interest rates, etc., forest policy is appropriately treated as the exercise of these instruments to achieve desired forest effects.

The author states that this view offers a particular challenge to the policy analyst, for there is a dearth of work on the forest consequences of policies that reflect dominating governmental concerns and enjoy the preponderance of government control. The challenge is to integrate the sectoral concerns of conventional forest policy within the more powerful and dynamic frameworks of national planning and policymaking. To be effective, such integration must be built upon valid tests of relationships between specific policy levers and their observable forest consequences. Tests at village and regional levels may involve comparative analyses of areas that have developed under different policy conditions. At the national level, there is ample room to explore the effects of specific policy instruments of the variables to which they apply. The relevance of this alternative approach is shown by application to the formulation of forest policy at village, regional and national levels in developing countries.

Ross, Bruce and Amore Getahun. 1987. "Support for Technology to NGOs and PVOs Promoting Forestry in Africa." Washington, DC: Energy/Development International. Concept Paper.

**Abstract:** This concept paper was commissioned by the Office of Environment and Natural Resources in AID's Bureau of Science and Technology; its aim is to facilitate the development of AID activity to meet the technology transfer need of NGO and PVO projects. Information was developed in three ways: (1) structured interviews conducted in the United States and Africa with 68 officials of NGOs, PVOs, agriculture research organizations, development assistance organizations, and African government officials; (2) workshops in Africa in which all these categories of personnel participated to discuss needs, what works, and what could and should be done to support transfer of technologies to field agents of NGO/PVO projects; and (3) a study of published literature and of unpublished reports within AID and within the PVOs and NGOs

One conclusion is that existing technology transfer mechanisms are not sufficient. AID should create the position of technology transfer facilitators, who would be responsible for such activities as workshops, journals, information exchange, and to promote comprehensive planning for technology transfers and monitoring their implementation, to alleviate this problem.

Other conclusions are: PVOs/NGOs are not likely to develop adequate technology transfer without intervention from A.I.D. or other donors; technology transfer networks should be organized on a national and multi-country basis, instead of an ecology-zone basis; and adequate technology transfer to promoters of farm forestry in Africa is not occurring because most of the necessary conditions for this transfer are not being met.

These conditions include: (1) Knowledgeable and capable people at the source and receiving end of the transfer; (2) participation of a facilitator who understands the technology transfer process, the market for the technology and its products, and the constraints and opportunities affecting the other actors; (3) involvement of users and transfer agents in choosing the technologies to be transferred and in planning the transfer process; (4) demonstrations in physical, social and financial environments that are similar to actual conditions where the recipient is expected to apply the technology; and (5) initial identification of resources sufficient to support the technology transfer process until it is self-supporting.

Sayer, Jeffrey A. 1990. "Institutional Arrangements for Forest Conservation in Africa." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Foret Dense d'Afrique Centrale et de d'Quest, November 5-9.

**Abstract:** As pressures continue to build on biological resources in tropical developing countries, a number of agencies (i.e. the World Bank, the World Commission on Environment, and the United Nations) are working with governments to help them to develop their institutional capacity to manage these resources. Structural adjustment loans often address explicitly the institutional arrangements for a broad range of activities, including forest conservation. This paper presents factors that need to be considered in this process, and reviews the various institutional arrangements for conservation which exist, especially in Africa.

The author's recommendations are:

1. Governments need to have their own capacity to manage resources, including planning, implementation, and evaluation;
2. Many government sectors have impacts on forest resources, and some institutional mechanism is required to coordinate the policies and actions of the different sectors;
3. A strong scientific base is required for modern resource management;
4. The private sector needs to operate within the resource management policies of government;
5. Conservation includes local, national and international dimensions, so institutional arrangements are required at each level; and
6. All institutions should have the capacity to adapt to changing conditions, including training, research, and monitoring; and they need to be sustainable in the long term.

The author concludes that African nations need to build their own institutional capacity to deal with the broad spectrum of conservation issues, ranging from research to management to community affairs to international trade. Innovation will be required, and should be built on local requirements, local capacities, and local self-reliance.

The authors recommend that conservation institutions link the approval of financial plans to the approval of environmental plans, recognizing the fundamental environmental yardsticks that should be applied to both.

Schramm, Gunter and Jeremy J. Warford, eds. 1989. Environmental Management and Economic Development. Washington, DC: World Bank.

**Abstract:** Environmental degradation threatens the productivity of agricultural and forest resources on which developing countries depend for their economic growth. The problem is most pervasive in the poorest countries, where poverty and population pressures compel people to deplete the natural resources to meet their immediate needs for survival. Forests are burned to make room for food crops, the soil is depleted when cow dung must be used for cooking fuel instead of fertilizer--and both the environment and prospects for economic betterment suffer.

This volume shows clearly that much environmental damage is the result of either shortsighted policies or lack of knowledge, as when insecure land tenure, artificially low farm prices, and illiteracy keep farmers from practicing soil conservation. The authors analyze the relation between environmental factors and economic development and focus on how developing countries can protect and even improve their natural environment while continuing to improve the economic and social welfare of their people. They look at analytical and methodological questions, illustrate in detail many of the problems, and point to possible solutions.

Contrary to other recent studies, this book finds cause for some optimism: governments are turning their attention to these issues, examining the environmental effects of various economic policies, and taking steps to preserve the environment and prevent further damage. One of the more hopeful findings is that economic development and environmental protection do not stand as unalterably opposed choices, but often walk hand in hand. Systematic evaluations and assessments of economic costs and benefits often prove that sensible policies and actions that protect the environment can at the same time contribute to economic progress.

Shaikh, Asif et al. 1988. Opportunities for Sustained Development: Successful Natural Resources Management in the Sahel. Washington, DC: U.S. Agency for International Development, Bureau for Africa, Office of Technical Resources and Sahel Office, Vols. I and II.

**Abstract:** This report presents the results of a study of local-level NRM initiatives in Mali, the Gambia, Niger, and Senegal. Volume I contains the case analyses and synthesis, and Volume II summarizes the 70 cases. The assessment focused on identifying the factors associated with successful NRM in the Sahel. Drawing on the assessment's findings and the recurring cross-case themes, the authors draw the following NRM strategy guidelines:

1. Provide clear, consistent policy signals on resource tenure, local management rights, national political support and mobilization, prices, and access to credit. National policy reform should be supported by coordinated donor positions;
2. Focus on incentives for local participation. Assure that options provide adequate short term return until long term benefits come on stream. Offer a range of technical and socio-economic options and allow for flexibility and adaptation in implementing projects;
3. Increase emphasis on local training and mass sensitization. Farmers are receptive to NRM knowledge, but rural extension agencies are hampered by inadequate skills and information. Local trainers and intermediaries are more efficient and cheaper than outside agents;
4. Build on the success of local models. Policies for encouraging successful smallholders need to be strengthened. "Model farmers" and resource managers provide strong and positive demonstration effects. The ability of successful farmers to create employment for the poorest rural dwellers should not be ignored; and
5. Assure a stable, long-term commitment to the natural resources sector. The learning curve may involve long lead times. The rural economy is changing rapidly, and short projects fail to capitalize on those changes. Abandoned projects have a negative demonstration effect.

Slade, Grant and Keith Weitz. 1991. Uganda Environmental Issues and Options. Chapel Hill, NC: Duke University, Center for Resource and Environmental Policy Research. Working Paper No. 91-3, May.

**Abstract:** The Government of Uganda, supported by donors, has initiated a process to identify major environment issues and develop a national environmental action plan (NEAP) for dealing with them. The purpose of this paper is to assist Ugandan authorities and donors in the analysis of some of Uganda's environmental issues. Issues selected for treatment in this paper include: costs of environmental degradation; environmental institutions; legal framework; land tenure; and environmental education. The issues were selected following discussion with colleagues at Duke and the World Bank.

The concept of Sustainable Net National Product (SNNP) is discussed and SNNP principles are used to develop estimates of the cost of environmental degradation for some of Uganda's resources. Environmental institutions are analyzed, in particular the Ministry of Environment Protection. Local-level participation in the identification and solution of environmental problems is studied. The paper develops ideas for an environmental legal framework which include: establishing a constitutional right of the individual to a clean and healthy environment; statutory obligations on the part of government agencies concerning environmental objectives and application of the polluter-pays principle; Uganda's 1975 Land Reform Decree is analyzed, and environmental education in the country is reviewed.

Steinbarger, Douglas M. 1990. "Tenure and Alley Farming: A Literature Review, with Particular Reference to the West African Humid Zone." Madison: University of Wisconsin, Land Tenure Center. LTC Research Paper No. 138.

**Abstract:** Alley farming is an agroforestry technology involving production of leguminous trees and shrubs in intercropping arrangements with cereal and tuber crops. It is designed to improve fallow management in areas of declining soil fertility and increasing population pressure. This technology requires long-term access to the land for agricultural and forestry purposes, and raises questions of individual versus community ownership of the land and resources.

The author discusses traditional land rights based on lineage, and generally unsuccessful attempts to replace or reform these tenure systems. Loans, pledges, and renting of the land has occurred, but these short-term tenure arrangements are often made providing farmers do not plant trees. State control is often exercised not through the ownership of the resource, but through a system of permits and fines over the exploitation of those resources. There are also different rights depending on the use of the resource, i.e. subsistence (for forage) trees, commercial trees (fruit or oil), or those harvested for timber or fuel.

Intra-household access to resources and resource management differ by gender, and women's priorities will frequently differ from those of men because the resource base is different, as are society rules that govern them. Important considerations include the differences and similarities in male and female roles in decision-making, formulating land-use strategies, labor requirements and distribution, and the rights of allocation of and access to tree/shrub products necessary for alley farming and other agroforestry approaches.

Stryker, J. Dirck et al. 1989. "Linkages between Policy Reform and Natural Resource Management in Sub-Saharan Africa." Medford, MA: Tufts University, Fletcher School of Law and Diplomacy and Associates for International Resources and Development. Paper prepared for U.S. Agency for International Development, Grant No. AFR-0467-G-SS-88038-00, June.

**Abstract:** This study looks at policy reform impacts on Sahelian governments' efforts in NRM in 40 countries. Reforms are categorized as: 1) trade, price, and exchange rate policies that influence relative prices, 2) budget and credit restrictions (macroeconomic policies); 3) regulation of private sector activity; 4) management of state-owned resources; and 5) structural change. The analysis found that policy reforms have had mixed effects on natural resource management (NRM), and that time is an important element in assessing net impact. The negative effects of reduced government budgets are felt very quickly, for example, but efforts to improve public managerial and administrative capability are perceived only over the longer term. The need to finance development projects and to pay off foreign debt in the short term creates incentives to pursue cash crop, livestock, forestry, and fishery activities that may not be sustainable. Incentives are weaker to devote resources to management efforts that might result in longer-term sustainable yields, but are likely to mean smaller revenues at present.

The authors recommend a co-management approach to NRM, that brings in local participation. They see the appropriate role of the state as limited to guidance and regulation through price incentives, access rights definition, and research into new technologies. Direct involvement of the state in NRM is often bureaucratic, cumbersome, uninformed, and not well accepted by resource users. In addition, the state is subjected to many political and social pressures that impede efficient management and its financial and managerial resources are severely constrained. Where externalities are not too widespread, however, direct NRM and regulation should be left to the local community, which is better informed, already has a customary system for enforcement and litigation, and is more likely to command the respect and obedience of its local constituents.

Talbot, Kirk. 1988. "Report on PVO/NGO Survey for West Africa IIED/USAID NRM Project." Washington, D.C.: World Resources Institute.

**Abstract:** This trip report is a synopsis of interviews from West Africa of USAID, US/PVO, and African NGO representatives familiar with natural resource management (NRM) strategies and actions relevant to the USAID Africa Bureau's NRM initiative.

The report brings up important concerns and ideas regarding NRM policy/project approach, initiation and focus. These include: ways in which NGOs can integrate their work on NRM in meeting the immediate survival needs of local people; the need of cost-benefit analyses of projects/policies to incorporate the value (in terms of incentives, benefits, efficiency, etc.) of "ownership" of a policy/project; the importance of designing NRM projects/policies to utilize local scholars and university graduates as opposed to bringing in expatriate experts from other countries; and ways in which environmental work can be combined with women's development and education.

One interesting observation made by the author is that the degree of environmental degradation in the Sahelian countries has sparked the creation of a large NRM movement; Cameroon, with its relative richness in water, soils and forests, has not witnessed a widespread NRM-related NGO movement.

Thomson, James T. 1985. "The Politics of Desertification in Marginal Environments: The Sahelian Case." In H. Jeffrey Leonard, ed. Divesting Nature's Capital: The Political Economy of Environmental Abuse in the Third World. New York: Holmes and Meier, pp. 227-262.

**Abstract:** This chapter concentrates primarily on Niger, with reference to other Sahelian countries. The author examines the political and economic dynamics of desertification in Niger. Local institutions-- land tenure, tree tenure, legal systems, and administrative structures-- profoundly affect the existence strategies of peasant farmers, agropastoralists, and transhumant herders. Losers from current NRM system are the poorest individuals, who cannot fall back on a reliable government-operated social security net, and remain constantly vulnerable to personal reverses. The winners are those who can profit from the misfortunes of others, such as officials, e.g. forestry guards who take bribes or livestock agency personnel who sell water illegally to herders, and better-off incidents, e.g. Tuareg chiefs and creditworthy farmers. Desertification creates patron-client alliances. The poor seek patrons for protection, and thus are less likely to engage in pro-environmental political action at some future point. Patrons support the status quo that has driven clients to them. Family breakdown has seriously undercut local potential for effective self-help projects, so voluntary activities are not able to mobilize people to create public goods, e.g., wells or village woodlots.

The most difficult barrier to action for ecological or any other ends in the Sahel is government antipathy to any group activity not government sponsored. Because local initiative is regarded with suspicion, people will not undertake collective action without some signal from officials that they support such action. Due to the centralized nature of the administrative system, the possibilities for overloaded local administrators to offer and sustain effective support are few.

Proper management would require a vast multiplication of decision points, empowering local governments and residents to organize, control, and sustain the long-term collective action demanded by NRM. Several systemic factors work against localization of decision making: administrators' ingrained perception of their 'duty' to exert control over all public problems as they define them, and a distrust of autonomous local organization; a distaste for the inconveniences associated with popular input into policy making, and a dislike of having to answer popular demands; a lack of strong incentive to initiate local-level projects.

Thomson, James T. 1991. "Cost Effective Renewable Resources Governance: The Kayes Fisheries, Traditional Institutions and the Forest Service." Burlington, VT: Associates in Rural Development.

**Abstract:** This paper illustrates how rural producers, operating through self-governing local institutions, can efficiently resolve a class of problems critical to the survival of rural populations in the West African Sahel. The generic problem is environmental degradation. In the Sahel environmental degradation is caused mainly by population pressure and associated non-sustainable renewable natural resources (RNR) use practices, and partially by drought.

A brief review of the history of efforts to solve West Sahelian environmental problems is provided to facilitate the development of improved solutions. Most of the past efforts have been top-down, and few of these have produced desirable results. Instead, most successful efforts have involved a very high degree of local involvement in designing and implementing RNR management activities.

The top-down approach to RNR management has hastened rather than slowed RNR degradation in the Sahel. Drawing on a single case, this paper suggests how specific RNR problems can be resolved by reliance on local institutions for self-governance designed to deal with specific resource problems. In the process, the costs of governance can be sharply reduced, and the burden on central government agencies reduced to more manageable proportions.

Thompson, John. 1991. Combining Local Knowledge and Expert Assistance in Natural Resource Management: Small-scale Irrigation in Kenya. Washington, DC: World Resources Institute, From the Ground Up Case Study No. 2, February.

**Abstract:** In the 1970s landless peasant farmers from various regions in Kenya and different ethnic backgrounds organized themselves into cooperatives to purchase land and founded the communities of Njoguini, Gitero, and Kabati. In the early 1980s each community had formed a self-help organization to address a common problem - water shortage. By the late 1980s these separate institutions joined forces to design a common gravity-fed water supply and irrigation system, attract external support, and construct the system.

The author suggests several hypotheses for the communities' success in managing water resources:

1. The actions were in response to the increased risks and shortcomings associated with practicing rainfed agriculture on semiarid lands;
2. The farmers hold title deeds to their land and through their cooperatives have access to and control over important productive resources;
3. The separate self-help associations and their leadership, including the executive committee, have effectively organized the water supply and irrigation system; and
4. External agencies have provided necessary financial and technical assistance in a supportive rather than controlling manner.

The case study illustrates how the government and development assistance community can work with communities to address local problems and implement options. Several policy and program recommendations are detailed to facilitate similar collaboration with other communities and village clusters in Kenya.

Thomas-Slayter, Barbara, Charity Kabutha and Richard Ford. 1991. Traditional Village Institutions in Environmental Management: Erosion Control in Katheka, Kenya. Washington, DC: World Resources Institute USA. From the Ground Up Case Study No.1.

**Abstract:** The residents of Katheka Sublocation, Machakos District, Kenya have twice been involved in the construction of bench terraces to control erosion and stabilize agricultural production. The first effort was coerced, resisted, and not sustained. The second effort was based on traditional volunteer groups and have constructed over 20 km of terraces in an effort that continues today.

Realizing that single households alone do not have the expertise or resources to stop natural resource degradation in the sublocation, traditional mwethya self-help groups were revitalized and mobilized. These groups historically contributed to the community in times of disasters, and so were chosen as the social force to implement the terracing. Participation in these groups are overwhelmingly female, which matched traditional roles in agricultural development and resource management. The authors also emphasize the leadership of the groups as critical. These respected members of the community effectively organize meetings, keep financial records, assign tasks to individuals and groups, set work quotas for individuals, establish rotation systems among members, mediate conflicts regarding resource use and activities, and introduce new conservation and marketing techniques. Finally, the mwethya groups have benefited from the support and encouragement of traditional, governmental, and non-governmental village leaders. The assistant chief is especially important in this linkage - he organizes the public discussion of community priorities, praises the work of the groups, informs the community of project progress, and facilitates communication between villagers and external institutions.

The villagers and mwethya groups are struggling with one external force over the control of a key resource. Nairobi construction businesses send trucks to the subdistrict to remove water-retaining sand. This decreases the long-term water retention capacity of the river beds, and weakens the earthened terrace infrastructure as well as increases the likelihood of water shortages. The practice is legally done through permits purchased at the county council level, and permit money goes to public works projects. This case illustrates how weak rural people are in participating in Kenya's public arena, especially when pitted against wealthy business and political elites.

Tukahirwa, Eldad M. and Peter G. Veit. 1992. Public Policy and Legislation in Environmental Management: Terracing in Nyarurembo, Uganda. Washington DC: World Resources Institute. From the Ground Up Case Study No. 5.

**Abstract:** In southwestern Uganda, several farming communities have continuously cultivated steep hillslopes for 50 years without significant losses in productivity. With the assistance of an enlightened agricultural extension officer, the farmers develop and implement site-specific soil-conservation plans. The terrace technology used depends on social, economic, and physical conditions. Although these terracing activities do not conform with the district soil-conservation by-laws, they stand out as some of the best soil-conservation practices in sub-Saharan Africa

Four key factors frame the effective soil-management practices of the farmers:

1. The need for soil-conservation measures is recognized by farmers in an area where the terrain is rugged and the population density high. The farmers have transformed officially imposed soil-conservation requirements into community practices that they clearly value and implement. Only two people have been warned for not practicing soil conservation, and no one has been fined or imprisoned;
2. District soil-conservation by-laws have legitimized soil conservation practices and empowered the local authorities to implement and enforce practices approved by them. Several institutions are responsible for executing the soil-conservation by-laws. Agricultural extension officers (Ministry of Agriculture) supervise farm practices ordered in the by-laws, and local committees, chiefs, and administrative police (Ministry of Local Government) enforce the by-laws;
3. Farmers have benefited from a cooperative relationship with the agricultural extension officer, who helps them design soil-conservation strategies that meet local concerns and subnational/national interests. The agricultural officer's effectiveness can be attributed to his genuine interest in the people's welfare and his good relations with farmers. His skills include listening, negotiating, mediating and strategic planning. His confidence in his knowledge of agriculture and local socioeconomic and ecological matters enables him to work outside by-law orders; and
4. Farmers operate under a customary land-tenure system that provides them with a perceived security in their landholdings and the accompanying natural resources. This has encouraged ecologically sound land-use management with long-term goals and discouraged unsustainable farming practices and the mining of natural resources for short-term objectives.

Wamalwa, Betty Nafuna. 1990. "Learning From the Past: Traditional Land Management Systems in Kenya." In Roger Yeager, ed. Conservation for Development in Botswana, Kenya, Somalia, Sudan. Hanover, New Hampshire: African-Caribbean Institute, 1990. Pages 5-11.

**Abstract:** The author of this article uses the example for the Akamba society of Machakos District, during the mid-1600s-late 1800s, to show that traditional systems of land tenure and management, derived over time to cope with harsh arid and semi-arid lands (ASAL) environments, provide the needed expertise that the government needs to achieve its goal of developing strategies, techniques, and technologies that increase productivity without sacrificing the crucial elements of resource conservation and sustainable utilization. In this case, government and donor assistance should focus on the re-introduction (and the necessary modification and nurturing) of traditional practices, and then on the adoption of these into national environmental policy which affects other areas.

Regarding the introduction of and incentives for new policy, the author advises that the government should not wait until periods of extreme drought or other emergencies to take action; the state should be pro-active, not reactive. For the local communities, the author states that "as the productivity of local ecosystems decreases, the incentives are created for a return to practices that maintained ecological balances in the past."(p. 6) There will then be more incentive to commit to the government policy since it involves techniques and benefits with which the local community is familiar

One lesson provided by traditional villagers is that consensus on a policy will more likely be obtained if the policy involves the equitable allocation and sharing of resources available and if the aim is to distribute risk and guarantee group survival (with the reservation that in times of emergency modifications and sacrifices may have to be made). The author states that individual efforts will not result in effective ASAL management; in these areas, conservation measures which restrict communal involvement has produced vast environmental deterioration.

Warford, Jeremy J. 1989. "Environmental Management and Economic Policy in Developing Countries." In Gunter Schramm and Jeremy J. Warford, eds. Environmental Management and Economic Development. Washington, DC: World Bank, pp. 7-23.

**Abstract:** This chapter argues for the need to design broad economic policy instruments to reverse the trend in many developing countries toward increasing degradation and destruction of natural resources. It emphasizes that the natural resource base, often critical for economic development, is in many cases threatened by rapid population growth, whose effect is compounded by inadequately controlled land and water use. Warford calls for effective policy interventions to influence the environment related behavior of countless relatively small-scale, resource-using activities throughout a nation's economy. Management of natural resources should become a standard consideration in macroeconomic and sector analysis, and the physical linkages between sectors need to be critically examined. Governments must overcome major institutional and political obstacles. New approaches, which would provide incentives and rewards to policy makers, must be developed to increase inter-agency cooperation, avoid overlapping jurisdictions, and prevent vested interests from paralyzing new initiatives in natural resources management.

Warsame, Amina Mohamoud. 1990. "The Role of Somali Women in Forestry: Key Issues in Forestry Assistance Programs." In Rodger Yeager, ed. Conservation for Development in Botswana, Kenya, Somalia, and Sudan. Hanover, NH: African-Caribbean Institute, pp. 21-25.

**Abstract:** Rural Somali women are the chief gatherers of fuelwood and livestock fodder, in addition to fruits and nuts for human consumption. Women also plant shade trees and use forestry products for making household items and treating different kind of diseases.

For all their involvement, women are generally neglected in programs aimed at maintaining forest-product levels, preventing species elimination, stabilizing sand dunes, and other conservation goals. Somalia has attracted considerable support for conservation programs from international non-governmental organizations and official aid agencies. The majority of the projects, however, neglect the role women can play in conservation efforts and do not aim at improving the status of women as foresters and agroforesters. Women are, for example, readily hired as cheap labor for individual forestry projects, but rarely trained in project management.

The author advises the following research and studies to more fully understand the role of women in forestry assistance programs:

1. Division, by gender, of labor in forestry activities and uses of forest products;
2. Differences between the forestry needs of refugee populations and resident populations;
3. Forestry training and education opportunities available to women;
4. Effectiveness of female extension officers, and the opportunities for women to become extension agents; and
5. Assessment of the impact of forestry projects on the income, time allocation, and work load of women.

Wilson, Kathleen and George E.B. Morren, Jr. 1990. Systems Approaches for Improvement in Agriculture and Resource Management. New York: Macmillan.

**Abstract:** This book provides a comprehensive view of systems approaches applied to agriculture and natural resource management improvement. There is an increased complexity to agricultural and natural resource management such that competencies and methodologies go beyond the problem-solving approaches used in the past.

The authors present strategies for systems approaches, and use agriculture and natural resources case studies for examples and explanations. Illustrative of the topics covered include: a review of the learning cycle as applied to agricultural and natural resource problems; an analysis of basic and applied science methodologies; hard and soft systems inquiry; key premises of systems thinking, including the principles of holism, transformation, control, communication, hierarchy, and emergent properties; how to develop an understanding of potential future improved conditions; developing an implementation plan and moving to implement specific changes; and alternative scenarios.

Specific natural resources projects used as examples are the mixed pastoral-crop system used in East Africa, low-resource farming systems used in the western Kenya highlands, and improvement of a Papua New Guinea cooperative.

Winterbottom, Robert. 1990. "The Tropical Forestry Action Plan and Indigenous People: The Case of Cameroon." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Raisonnable de la Forêt Dense d'Afrique Centrale et de l'Ouest, November 5-9.

**Abstract:** Without major reforms, the Tropical Forestry Action Plan (TFAP) may contribute to cultural destruction - this is one of the major conclusions of a recently completed WRI study which reviewed the experience of the TFAP in three countries: Ecuador, Philippines, and Cameroon. This paper discusses the findings of the case study for Cameroon, and provides analysis of the current and prospective relationship between indigenous people and the TFAP.

In the Cameroon case, there were no demographic studies carried out as part of the sector review or forest policy study, nor were there studies on the customary uses of the forest resources. A small number of NGOs were involved in the TFAP planning process, but none represented the interests of indigenous forest dwellers in the exercise. A FAO/UNDP report argues for exploitation of forest resources to increase the amount of foreign exchange generated by timber exports, but no proposals were made to monitor the impacts on forest-dwelling people from logging production and associated land use changes resulting from road construction. Finally, under Cameroonian law, recognition of land and resource rights is only given where there is evidence of "actual occupation" - narrowly defined as land which has been cleared. Under this definition, indigenous forest-dwellers have no officially recognized rights.

The author concludes by stating that the experience with the TFAP in Cameroon and other countries has confirmed the linkages between conservation and development of forests. Deforestation is not simply an environmental or an economic development issue - it is also a human rights issue. Success in managing and conserving tropical forests will depend on the ability to recognize and affirm those rights.

World Bank, 1990a. "Forest Policy: An Approach Paper." Abidjan, Ivory Coast: Paper presented at Conference sur la Conservation et l'Utilisation Rationnelle de la Forêt Dense d'Afrique Centrale et de L'Ouest, November 5-9

**Abstract:** This paper discusses the need for a new forestry policy, with a focus on tropical moist forests, of the World Bank. Emphasizing that environmental and economic issues relating to forest use have gone from a local to a global scale and from being simple to complex, the authors encourage a policy which recognizes the forests as a global environment good but which respects national sovereignty, and which balances conservation and development goals. The paper urges reform of the Tropical Forestry Action Plan, a program which has already received major World Bank funding.

This paper outlines the factors contributing to unsustainable management of tropical moist forests for timber production; they include: deficient incentive policies and concessions agreements which distort the true costs of forest resources and effectively subsidize logging; weak institutional arrangements at the country level; undervaluation of forests as capital stocks; little research on sustainable management of forests; and the undermining of indigenous populations.

Lessons learned from the Bank's experience in 30 forestry projects includes:

1. Little is known of the interactions between socioeconomic and natural systems but considering the complexities, a comprehensive approach will be more effective and efficient;
2. Weak and understaffed institutions are being burdened by the additional tasks of getting farmers and rural communities involved and introducing tree growing into the agricultural systems;
3. More technical supervision is needed during project implementation and more comprehensive site selection studies are needed to increase technical success; and
4. Comprehensive sector work before investment (i.e., policy, legal, regulatory, and institutional) will help develop sound national forest strategies.

World Bank, 1990b. National Environmental Action Plans for Africa. Proceedings from a workshop organized by the Government of Ireland, the Environmental Institute, University College, Dublin, and the World Bank. Dublin, Ireland, December 12-14.

**Abstract:** The National Environmental Action Plan (NEAP) workshop was attended by African countries, international agencies and NGOs for the purpose of sharing experience and strategies for natural resources implementation. Issues were discussed under four main themes (environmental information systems, integration of NEAPs within a macro-economic framework, local participation, and the institutional framework for environmental policy) and issues papers for each of these topics are included in the proceedings.

Participants emphasized the need for NEAPs to be demand-driven, in-country processes led by governments, with participation from a broad range of society. In NEAP preparation, the process should be sponsored and promoted by the highest levels of government. In NEAP implementation, mechanisms and agencies need to be created to ensure environmental responsibility in all sectors. Other comments by participants included: NEAPs should be coordinated closely with structural adjustment exercises, more qualified professionals on environmental matters are needed in Africa; and the NEAP process may be a means to revise a country's existing project portfolio.

Unresolved problems related to the NEAPs specified by the African participants include: local conflicts among land management groups; conflict resolution around basic needs of the population and environmental protection; regional and global issues of toxic waste and coastal erosion, realistic timeframes, staffing and finances for implementation of the NEAP; how to allow more time for the public to participate in the process, commitment of staff to work on the NEAP full-time, and role definition for key personnel and agencies.

World Bank, 1991a. Issues Facing National Environmental Action Plan in Africa. Report from the Club of Dublin Workshop, Mauritius, June 17-19.

**Abstract:** National Environmental Action Plans (NEAPs) have become a key process in Africa for environmental planning with 20 countries involved in the process. At the second NEAP workshop, it was concluded that solid economic analysis and sound environmental information will be an initial focus of the work of NEAPs, with issues on environmental institutions, public participation, environmental education and awareness, financing, and accountability through monitoring and evaluation to be addressed as future priorities. Issues papers on the topics above are included in the proceedings.

In the paper on ensuring accountability, authors Kirk Talbott and Michael Furst provide ideas and options for methodological tools and monitoring and evaluation mechanisms that can be devised and used for tracking NEAP preparation and development. A NEAP management and monitoring model is included which emphasizes timeframe, activities, and agency or individual responsible. The initial five activities (of eighteen) suggested for preparation of the NEAP are.

1. Establish interdisciplinary ad hoc environmental committee (government, industry, and academics);
2. Define environmental priorities and NEAP preparation process, and circulate it widely;
3. Commission National Needs Assessment, with a desk study and field survey;
4. Prepare Term of Reference for NEAP preparation and devise initial monitoring and evaluation schedule;
5. Prepare NEAP briefing paper for government and donor approval of NEAP process, and brief all interested parties.

World Bank. 1991b. The World Bank and the Environment: A Progress Report, Fiscal 1991. Washington, DC: Author.

**Abstract:** This second annual report is the latest in a series of public statements that have traced the evolution of Bank environmental policy over the past five years. Bank policy in this area is evolving into a two-pronged approach in which rigorous assessment of specific projects is complemented by efforts to help governments build environmental concerns into policy making at all levels. Economic incentives to induce environmentally sound behavior are stressed as a necessary feature of macroeconomic or sector policies if wide-ranging results are to be achieved.

The report's overview of Bank policy and research for 1991 is grouped around several themes: energy and the environment, pollution, urban issues, water resources management, forest and land management, social and cultural issues, environmental economics, and global issues. This is followed by a description of operations in the Bank's four regions, reflecting the tailoring of approaches to the requirements of each region, and a discussion of overarching operational issues. A separate chapter deals with tropical forests, and then the environmental work of the International Finance Corporation is reviewed

The report covers recent international action to combat global environmental problems, the Bank's work with NGOs, and its efforts to expand training in environmental issues and management. Key lessons learned include: the importance of institutional capacity-building, the multidisciplinary nature of the issues, the necessity of public participation, the key role of economic instruments (e.g., market liberalization), and the difficulties in dealing with the trade-offs between short-term economic growth and immediate poverty alleviation on the one hand, and long-term sustainable development on the other.

World Bank. 1992. World Development Report 1992: Development and the Environment. Washington, DC: Author.

**Abstract:** This report calls for an alternative path to current practices, which with increased population growth, will lead to highly degraded environmental conditions in cities and the countryside alike. The Bank argues that rapid economic growth and the elimination of poverty can be accomplished along with improved environmental conditions. A twofold strategy is presented.

First, take advantage of the positive links between economic efficiency and income growth, and environmental protection. The means accelerating poverty programs, removing distortions that encourage the wasteful use of energy and natural resources; clarifying property rights to provide incentives for better NRM; expanding programs for education (especially for girls), family planning services, water and sanitation, and agricultural extension, credit, and research.

Second, break the negative links between economic activity and the environment. The report describes targeted measures that can bring dramatic improvements in environmental quality at modest cost in investment and economic efficiency. To implement them will require overcoming the power of vested interests, building strong institutions, improving knowledge, encouraging more participatory decision making, and building a partnership between industrial and developing countries

Yeager, Rodger, ed. 1990. Conservation for Development in Botswana, Kenya, Somalia, Sudan. Hanover, NH: Africa-Caribbean Institute.

**Abstract:** This volume is a summary of materials from eight authors in eastern and southern Africa generated by the African-Caribbean Institute's Natural Resource Project. They are presented in three main sectors: traditional institutions in environmental management; energy, dry land fishing, camel husbandry, and women in forestry; and modern industrial waste management problems and environmental education.

The papers summarized in this volume form the initial products of a multi-year African Fellowship Program in Strategic Policy issues of Environmental and Natural Resources Conservation. The national advisory committee is composed of environmental and natural resource specialists in Botswana, Kenya, Tanzania, Somalia, and Sudan. The program is intended to help prepare future African specialists in environmental policy management, biodiversity management, and sustainable development. It also aims to provide African governments and educational institutions with useful technical information, instructional materials, and policy-related recommendations in these fields.