



The Common Property Resource Digest

No. 13

Devoted to community-based resource management

March 1990

Common Property News & Notes

International Association Conference

September 27-30 are important dates to enter on your calendar. The **International Association for the Study of Common Property** will hold its first annual meeting at Duke University in Durham, North Carolina, USA at that time. All network members are invited and urged to participate.

The theme of the conference will be **Designing Sustainability on the Commons**. At this first meeting, the Association particularly wishes to encourage panels that combine disciplines, resource types and/or geographic areas and that will allow for considerable discussion between panelists and audience. Proposals for papers and panels are welcomed and will be accepted until May 1, 1990. (Note that this deadline has been extended from the one specified in the proposal forms mailed with issue 12 of the *Digest*.)

Official participants in the program will be required to become members of the International Association for the Study of Common Property by the time of the September 1990 meeting. Association members will also enjoy a preferential conference registration fee.

The exact dates of the meeting were inadvertently omitted from the previous issue of the *Digest*. The conference is scheduled to allow access to the reduced airfares associated with staying over a Saturday. A business meeting of the dues-paying members of the Association and introductory activities will take place on Thursday night, September 27. The bulk of the substantive sessions will be scheduled for Friday and Saturday, September 27 & 28, with some spillover to Sunday morning if necessary.

Conference and hotel registration forms will be mailed separately to all Network and Association members within a few weeks. A small poster announcing the conference is included with this issue

of the *Digest*. Please post it where interested colleagues may see it.

For more details about the conference, contact the organizing committee chair:

Dr. Margaret McKean
Department of Political Science
Duke University
Durham, North Carolina, 27706
USA

Telephone: (919)684-3164
Fax: (919)684-2855
BITNET: MCKEAN@DUKE

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World Resources Institute Appointments

The World Resources Institute has announced the appointment of two new staff members. Roger C. Dower has been named Director of the Program in Climate, Energy and Pollution. In this position he will direct interdisciplinary work on a "variety of environmental and energy issues including climate change, ozone depletion, transportation strategies and sustainable energy use."

Dr. Aaron Zazueta has been named to manage Support Services for Non-Governmental Organizations (NGOs) in WRI's Center for International Development and Environment. He is expected to work closely with NGOs in developing countries in efforts "to increase their capacities to inform and influence the formulation and implementation of resource management policies and programs for sustainable development."

Network members who wish to know more about these programs can contact Dower or Zazueta at the following address:

World Resources Institute
1709 New York Avenue N.W.
Washington, D.C. 20006, USA
Telephone (202) 662-2542

CPR: A Worst Case Management Mechanism

Network member Jaime Thomson submitted the following interesting example of how quasi-common property institutions were used in a famine situation.

"The material is translated (roughly, by me) from a Swiss Development Assistance document prepared by A.M. Houchet, entitled 'Support for Local-Level Initiatives in the Cercle of Niafunke, Sixth Region - Republic of Mali (October 1983-January 1988), Bilateral Mali-Swiss Cooperation.' Vol 1, 98.

"The background to this field report is the terrible drought which struck Mali in 1984; by the spring of 1985, residents of the Timbuktu Region were in terrible straits. Many had left for more hospitable regions to the south. Those who remained suffered terribly. Many starved to death. In this setting, the Swiss assistance project supporting local initiatives supplied millet and sorghum seed grain to villages so they would have something to plant in the next rainy season.

"The Swiss technical assistants tried to use the circumstance to launch a system of village collective seed grain silos. The project was premised on the assumption that nothing was worth doing if the local people could not or would not make a commitment to it. Thus the Swiss tried to determine whether villagers found the system worthwhile. A.M. Houchet reports:

'In conclusion we stress the point that providing seed grains is clearly an emergency measure which, it is always hoped, will not have to be renewed, and which is not renewed if a village does reap a harvest. The project exploited the situation to facilitate the creation of village seed

The Common Property Research Network

The *Common Property Resource Digest* is the primary communication medium of the Common Property Resource Network. Funded with grants from the Ford Foundation and the Rockefeller Brothers Fund, the CPR Network seeks to disseminate information dealing with common property resources, their management, and policies related to their use. It also seeks to foster communication between professionals who work with common property resources; whether as policymakers, administrators, researchers, or educators. The ultimate goal of the network is to improve the conservation and wise use of these resources, and to improve the wellbeing of those people who depend on common property for their livelihood. Membership in the network is open to any individual or institution having an active professional interest in common property resources. At present, there is no charge for membership.

The *Common Property Resource Digest* is published and the CPR Network is administered by the Center for International Food and Agricultural Policy of the University of Minnesota. Facilities are provided by the Department of Agricultural and Applied Economics. Dr. C. Ford Runge is the project director and Edward D. Lotterman is the network administrator and *Digest* editor.

Functioning of the network depends on active participation by its members. Members are asked to report on their professional activities, as well as publications, conferences, and other items of interest. News items, announcements, publications for review, suggestions, and questions should be sent to the *Digest* editor at the following address:

Common Property Resource Digest
332e C.O.B.
1994 Buford Avenue
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FAX: (612) 625-6245

grain silos and to permit local leaders to develop a collectivist attitude towards constitution of the seed grain stocks. Why a collectivist approach in this situation one might ask? Highlighting the logic underlying the wisdom of village organization, peasants repeatedly told us: 'When your children are hungry, in exasperation you always end up giving them the seed stocks to eat; but you wouldn't dare go ask the heads of the village collective seed stock for grain to feed your kids.'

"The weakest children undoubtedly died and, under similar circumstances, will continue to do so. But the social pressure generated by the logic of common property resource management preserves a basis for village survival. It is both counter-intuitive and noteworthy that a management mechanism often described as 'fragile' is perceived by starving seed grain users as their best hope for collectively forcing themselves onto one horn of a dilemma, in order to avoid the other and (thus) survive in a tragic situation."

Jaime Thomson
119 Northwood Ave.
Silver Spring Maryland, 20901, USA

Bangladesh Inland Fisheries

Mahfuzuddin Ahmed writes "I wish to inform you the the Ph.D. project dealing with the economics of Bangladesh inland open-water fisheries management (Digest #3, June 1987) has been completed. The outcome, my thesis entitled 'A Programming Model for the Determination of Benefits Obtainable from the Management of Open-Water Inland (Riverine) Fisheries of Bangladesh' has been accepted for the Ph.D. in resource economics at the Universiti Pertanian Malaysia.

"Through this research, an operational model has been derived, which can be used to analyze performance of the fisheries under different simulated alternatives of techno-economic and biological conditions. The model was developed in a programming framework and a linear programming solution was obtained by using grid linearization and linear approximations techniques. The model was implemented for the determination of net social benefits obtainable from the riverine fisheries of Bangladesh. The results show that with proper management and regulation, the riverine fisheries of Bangladesh are capable of generating a net social benefit (sum of producer and consumer surplus) of Taka 1,383 million (U.S.\$43 million) per annum with a fish harvest of 173,000 metric tons. The result however, showed that there exists an excess capacity in the existing fleet in terms of application of effort relative to the resource availability, which would require an effective management control. Current Bangladesh government policies to introduce management control in the open-water fisheries is a positive move in this direction.

"The model has scope for further refinement through inclusion of more explicit relationships of population dynamics and analysis of the effects of specific fishery management tools. Right now I am looking for a post-doctoral assignment to continue further research and application of the model."

Mahfuzuddin Ahmed
c/o ICLARM
MC P.O. Box 1501
Makati, Metro Manila
PHILIPPINES

Common Property in Nepal

Network member Keshav Raj Kanel, currently on study leave at the University of Minnesota sent the following account of the evolution of forest policy in Nepal.

"I got my graduate degree in forestry in 1976 and then joined the Department of Forest Resources (DOF), Ministry of Forests and Soil Conservation, His Majesty's Government of Nepal (HMGN) in 1976. Forestry management at that time was basically oriented to the silviculture of commercial timber production in the plains (the Terai) of Nepal. In a situation where all the forests are nationalized, forestry and farming are intimately tied together, almost all the people are engaged in subsistence farming. There is a great population pressure on land and for forest products, and traditional forest management practices solely designed to produce commercial timber did not produce the desired result. Forests were converted to farming, and trees were cut to meet household and industrial energy needs and to generate government revenue. Thus the forests of Nepal declined in area and stock, a phenomena quite opposite to what the objectives of forest nationalization were. Foresters and policymakers then realized that forest and tree management for people without the active participation of local people was an Utopia.

"This realization led to the revision of the forest act and the promulgation of community, private, leasehold and religious forest rules in 1978.

"Community Forest (CF) rules of 1978 allowed the local communities (village Panchayats, a set of 12 to 16 villages having a population of about 3,000 to 5,000 people) to manage local forests for their own benefit. The forestry outputs needed by these people were and are mostly fuelwood, fodder, poles and small timber. Under the community forestry rules, forestland is handed over to the communities to protect, manage and to utilize forestry outputs of their choice. The technological package needed for plantation and management is provided free to them. This regulation is a landmark and a turnabout in the management of forest resources in Nepal. Up to 1986 about 49 thousand hectares of forest was handed to such communities. Approximately the same area of forest area has been planted by HMG.

'To implement community forestry programs, forestry education within Nepal was strengthened and young faculties were recruited and sent to the states for higher education. I was deputed to the forestry institute and was sent to study forest economics at Duke University in 1981. When I took a course on 'Natural Resource Economics', I had to read some of the articles on CPR and its management. I was greatly excited to learn the theoretical and institutional aspects of CPR management. I returned to Nepal in 1983 and started to teach 'Resource Economics' and 'Forest Management'. Since the community forestry program was implemented on a big scale at that time, forest management as CPR was a very hot topic. Thus, I started to dig out more materials on CPR. However, as in other developing countries, it is very difficult to obtain and gather new or even old publications on this subject in Nepal.

"In 1985, I attended a workshop in Bangkok on setting up a 'Land and Forest Management Network' organized by Winrock. Most of the other members from Asia attending the workshop were very much interested to know more about CPR. Publications on CPR were not consolidated in a regular journal. So, the knowledge and research result on CPR was desegregated and diffused and it was extremely hard to know recent work on CPR. A separate newsletter on CPR was considered necessary by all the participants of the workshop.

"Then I read two books, one by Buchman, *The Calculus of Consent* and the other by Olson, *The Logic of Collective Action*, that led me to want to know more about institutional mechanisms for reducing uncertainty, negative externalities, free riding problems, transaction costs, and creating and furthering opportunities for efficient production and equitable distribution of CPR management.

"In October 1985, I met Dr. Christopher Gibbs of the East-West Center in Honolulu, and was told that a proceeding of a meeting on common property resources would soon be published by the National Academy of Science. He urged me to become a member of the Common Property Resource Network. It is a great idea to produce such a newsletter solely devoted to CPR management. Most of the studies and publications on CPR, as mentioned previously, are scattered and difficult to obtain, at least in the developing countries.

"As a network member, I was invited to attend a seminar on 'Community Level CPR Management' in New Delhi, India, in 1988 organized by IUCN. Participants from other countries of south Asia highly appreciated the renewed interest on CPR and the publication on CPR management by the National Academy of Science.

"In 1987 November, a workshop on 'Community Forest Management' was organized by HMG in collaboration with USAID/FAO/SATA in Kathmandu, Nepal and various speakers, and papers presented in

the workshop stressed the necessity of further deregulation of forest management in Nepal. Consequently, the community forestry regulation of 1978 was further revised in early 1989, and now the responsibility and accountability of forest management is given to each 'user group' (within a village Panchayat). HMG has also recently approved a long term forestry sector Master Plan (1988-2011) which gives a top priority to the Community Forestry Programme.

"In this context, community forestry has been considered as a viable CPR management institution in Nepal. However, I think that there has to be further empirical action research in community forestry in the context of total farming systems. Similarly, the adaptability of CPR institutions within the context of changing technology and the nature of market structure should be studied and the results widely disseminated.

"Traditionally, water for utility and irrigation has been managed in Nepal as a CPR. There are many irrigation channels managed by local user groups, and their management and delivery system are more efficient and equitable in comparison to the ones operated by government. There may be similar or different institutions to manage water and forest resources in other parts of the world. I am very much interested to know both the theoretical and empirical differences between water irrigation and forest management systems operated by user groups or communities. Any references or suggestions by network members on this matter would be highly appreciated."

Keshav Raj Kanel
110 Green Hall
1530 N. Cleveland Ave.
University of Minnesota
St. Paul, Minnesota, 55108, USA

International Society for Ecological Economics

The formation of the ISEE was announced in previous issues of the Digest. The organization is now up and running and will hold its first annual meeting in May, 1990. (See the separate announcement under "Conferences".) Network members are once again invited to join this society. Three categories of individual membership are available: full, associate and student. Full membership includes the society's journal *Ecological Economics* published quarterly by Elsevier, the ISEE newsletter announcing meetings and other events, reduced registration fees at society sponsored meetings and special discounts on selected books and software. Associate and student membership include all of the above except the journal. Rates for 1990 are as follows:

Student US\$7
Associate: \$15
Full: US\$35"

Institutional subscriptions should be ordered directly from Elsevier Science Publishers.

Persons interested in joining the ISEE should send name, title, affiliation and address, along with a check or money order payable in US dollars to the ISEE to:

Dr. Robert Costanza
Coastal and Environmental Policy Program
Center for Environmental and Estuarine Studies
University of Maryland
Box 38
Solomons, Maryland, 20688-0038, USA
Telephone: (301) 326-4281

Centre for Development Cooperation Services

Drs. Walter Kok of the Free University of Amsterdam sent the following information about their activities.

"The Centre for Development Cooperation Services of the Free University of Amsterdam has for over five years been involved in research and consultancy activities in the field of soil and water conservation and water harvesting in Third World countries. The section that concerns itself with this specifically is called the Unit (for) Sustainable Resource Development. We are trying to expand our expertise and are currently thinking about setting up a network in the field of agricultural water harvesting and soil and water conservation. Members of our section are Drs. C. P. Reij (head), Dr. S. D. Turner, Drs. F. Zaal and myself. Among others, we have written the report 'Soil and Water Conservation in Sub-Saharan Africa: Issues and Options' for IFAD, Rome (1986) and the World Bank Technical Paper No. 91, 'Water Harvesting for Plant Production'."

Drs. Kok also noted that a brochure is available describing the activities of his Centre. Network members who are interested in water harvesting and soil and water conservation, particularly in Africa, can write:

Drs. Walter Kok
Centre for Development Cooperation Services
Free University Amsterdam
Van der Boechorststraat 7
1081 BT Amsterdam
THE NETHERLANDS
Telephone: 020 - 5486280/90
Telex: 10399 intvu nl
Fax: 020 - 462320

Marine Affairs Program at Dalhousie

Dalhousie University, in cooperation with the International Centre for Ocean Development, offers a one-year graduate level program in Marine Affairs. It "is designed to provide students with concepts and tools allowing them to work effectively in various aspects of ocean management. The Program will be especially valuable to students in management and

coordinate positions with government and industry in the marine sector.

"The program consists of three terms and normally will run from June 1 to April 30 of the following year." "It is possible to follow such courses of study as:

Marine Law, Policy and Administration
Marine Technology and Business
Marine Science and Management"

"The International Centre for Ocean Development (ICOD) awards 10 scholarships per year for Marine Affairs students from the Caribbean Basin, the South and West Indian Ocean, West Africa and the South Pacific." "Applicants must be nominated by their government or a regional intergovernmental organization." ICOD scholarships cover travel costs to the place of study in Canada, tuition and other fees, books, medical insurance and a living allowance."

For information on the Dalhousie Marine Affairs Program, contact:

Marine Affairs Program
Weldon law Building
Dalhousie University
Halifax, Nova Scotia B3H 4H9
CANADA
Telephone: (902) 424-3555
Telex: 019-21863
Cable: DALMAP HALIFAXNS
FAX: (902) 424-1316

Conferences

Ecological Economics of Sustainability

The International Society for Ecological Economics will hold a conference in Washington, D.C., May 21-23, 1990. The conference title is **The Ecological Economics of Sustainability: Making Local and Short-Term Goals Consistent with Global and Long-Term Goals.**

A fuller description of topics to be addressed was printed in a call for papers in issue 12 of the *Digest*. For more information contact Dr. Robert Costanza at the address given in the first article on this page.

Society for Human Ecology

The Fourth Conference of the Society for Human Ecology (SHE) will be held on April 20-22, 1990 at Michigan State University, East Lansing, Michigan. The theme of this meeting is "Human Ecology in Progress." Request for information should be addressed to:

Edith Wright
Conference Consultant
Michigan State University
55 Kellogg Center
East Lansing, Michigan 48824-1022, U.S.A.
Telephone: (517) 353-2293

Announcements

Donations Requested

Romanian Central University Library

The recent fighting in Bucharest Romania caused a fire in the Central University Library destroying much of the building and over a half million books. This library served as a national library as well as the principal library for the University. Members who have books or publications which they could do without are encouraged to donate them to this library to assist in rebuilding their collection. Cash donations are also welcome. It might be advisable to query the library director before shipping large donations. Members from countries with diplomatic representation in Bucharest can also query the cultural attache or information officer at their embassy to see if it is possible to ship materials for the library through diplomatic pouch channels at much lower postage rates. Donations of books and queries should be addressed to:

Director
Biblioteca Centrala Universitaria
Strada Onesti, nr 1
Sector 1
Cod 70119
Bucuresti, ROMANIA

Monetary donations should be marked "Ajutor pentru Biblioteca Centrala Universitaria Bucuresti" (Help for the Central University Library in Bucharest) and sent to:

Banca Romana de Comert Exterior
Calea Victoriei 22-24
Sector 3
Bucuresti, ROMANIA

Call for Papers

Rivers

"*Rivers*, a quarterly journal offers a multidisciplinary forum for research and professional literature addressing the issues of instream flow. A focus on the science, environmental policy, and law of instream flow is useful because of the many and growing controversies in water management that relate to streamflow. Professionals in field biology, law, environmental policy, hydrology and civil engineering have expressed a strong interest in a journal which integrates a wide range of information for the instream flow specialist.

"*Rivers* includes scholarship from a variety of disciplines focusing on the questions of assessing instream flow needs, developing instream flow policies, and resolving instream flow conflicts. Authors are

encouraged to submit original research and scholarly review articles covering such topics as:

- population responses to changes in habitat.
- validation studies of instream flow methods.
- comparative studies on instream flow programs.
- public trust doctrine and legal analysis.
- economic studies of habitat and recreation benefits.
- case studies on using law and technology.
- negotiations and expert testimony guidelines.
- fish and benthic habitat needs.
- hydroelectric power requirements.
- riparian corridors and wetlands analysis.

For more information on submitting articles or subscribing to *Rivers*, contact:

Susan E. Lamb, Editor
Rivers
3024 Phoenix Drive
Fort Collins, Colorado 80525
USA
Telephone: (303) 226-6225

Prize Competition

Policy Articles Solicited

The Center for International Food and Agricultural Policy of the University of Minnesota is pleased to announce that its policy article prize competition is being conducted again in 1990. A \$2000.00 prize will be awarded to the authors of a published article in an academic, professional, or popular publication which, in the opinion of the Center's program leaders, best advances understanding of an international food, agricultural or environmental **policy** issue. Articles dealing purely with biological science or engineering aspects of development should not be submitted.

Interested persons should submit any article published during calendar year 1989. The submission deadline has been extended until August 1 and the winner will be announced on September 1, 1990. The winner will be expected to make a seminar presentation at the University of Minnesota, with all travel and lodging expenses paid. Submit entries to:

Dr. C. Ford Runge
Center for International Food & Agricultural Policy
332 Classroom Office Building
1994 Buford Avenue
St. Paul Minnesota, 55108
USA
Telephone: (612) 625-9208

Positions

IRRI - Agricultural Scientists

The International Rice Research Institute seeks four agricultural scientists for assignment to Madagascar, a cropping systems agronomist, plant breeder, soil scientist, and agro-economist. All must have demonstrated ability to work as part of interdisciplinary teams and must be fluent in English and French. All positions require the Ph.D. and five years experience. A full announcement appears in the February 17 issue of *The Economist* and in other publications. Applications, consisting of a curriculum vitae, date of availability and names of three referees, or requests for information should be addressed to:

Dr. Klaus Lampe
Director General
IRRI
PO Box 933
1099 Manila, PHILIPPINES
FAX: 63-2-817-8470
Telex: 40890 RICE PM or 22456 IRI PH

Euroconsult - Agronomist & Economist

Euroconsult, a consultancy company based in the Netherlands seeks an extension agronomist and agro-economist for work in Southeast Asia. Information can be obtained from:

Euroconsult
ATTN: Ms. M.I. Jans
Personnel Section
P.O. Box 441
6800 AK Arnhem
THE NETHERLANDS

Royal Society for Protection of Birds - Socioeconomist

The Royal Society for the Protection of Birds seeks a socio-economist to carry out social science research to promote bird conservation in key issues such as agricultural policy, estuarine development and tourism.

For further details and an application form, please send a self-addressed envelope to:

Personnel Department
RSPB
The Lodge, Sandy
Beds, SG19 2DL
UNITED KINGDOM

World Bank - Economists

The World Bank seeks applicants from any of its 151 member countries to fill the following positions:

- Environmental/Natural Resource Economists for Latin America & Caribbean Region
- Agricultural Economists for Latin America & Caribbean Region

- Forest Economist for Latin America & Caribbean Region

For more information contact:

The World Bank
Mrs. U. Murray, Recruitment Officer
Room No. 1-8046
1850 I Street N.W.
Washington, D.C. 20433, USA

Potato Center - Social Science

The International Potato Center (CIP) is seeking candidates for the position of Head of the Social Science Department, based at Headquarters in Lima, Peru. The Department is staffed by agricultural economists, anthropologists and sociologists located in the host country and at regional headquarters. The Department Head will provide research and administrative leadership while maintaining a personal research program. Candidates must have a Ph.D. or equivalent in economics, anthropology or sociology and interdisciplinary research experience in technology related issues in developing countries. Research management experience and a demonstrated leadership ability and Spanish language ability is desirable. The closing date for applications is 15 May.

Send a letter of interest, a curriculum vitae and names and addresses of three references to:

Dr. Richard L. Sawyer
Director General
CIP
Aptdo. 5969
Lima, PERU
Telephone: 51-14-366920
Telex: 25672 PE
Fax: 51-14-351570

Greenpeace - MDB Project Coordinator

Greenpeace, the international environmental organization, is seeking an experienced activist to head an international project to influence the environmental policies and lending decisions of the Multilateral Development Banks (MDB's) and bilateral aid agencies.

Candidates will have a strong background in international environmental policy, international finance, knowledge of development and environmental issues, and excellent coordination and communication skills. The candidate must speak English, and other languages, particularly Spanish and French would be helpful.

Please send resume and cover letter to:

Kay Treakle
Greenpeace USA
1436 U Street N.W.
Washington, D.C. 20009, USA

CPR Books and Publications

Public Choice in International Pollution

This paper is a brief, somewhat technical application of public choice theory to transboundary environmental problems. As the authors state "we will focus on the political economy of international pollution using a public choice approach. First we will develop a theoretical framework that captures the incentives of governments for regulation of pollution by domestic industries. Then, we will discuss the incentive structure of countries for international cooperation in transboundary pollution control. We will conclude with a brief discussion of some practical implications for policy coordination."

They conclude as follows: 'The analysis in this paper suggests several reasons for the existence of policies that allow the private sector to deviate from the social optimum if there are externalities in production. If part of the domestically produced externality is exported to third countries total domestic output of the externality is higher than in the case in which the total domestic production of the externality is consumed domestically.

" The additional externality from abroad leads to a somewhat lower domestic output of the externality but to a higher total consumption. This represents an incentive for policy coordination. The incentive effect is due, in essence, to a leverage effect; regulators in each country can gain politically by a joint reduction in the production of the externality, as any reduction in the domestic production (and thus export) of the externality results in a reduction of the externality from abroad as well.

'The existing incentives for coordination in international pollution control policies, however, do not imply that such cooperation will actually occur. Besides transactions costs which can be substantial and which can inhibit international cooperation, each country involved needs assurance over other countries compliance under an agreement and the distribution of the net benefits of international pollution control policies need to be perceived as fair.

"Any agreement on international policy cooperation consists of a set of rules that specifies the signatories' rights and obligations. Such an agreement represents a global public good. Public goods are frequently difficult to supply efficiently because of free-riding. The free-rider problem can be solved in principle, however, through a system of conditional commitments to contribute to the production of a public good (Sugden, 1984). Each economic agent would contribute to the production of a public good conditional upon others doing the same. The key for international agreements on transboundary pollution is that they have to provide the assurance that everybody

'plays by the rules' (Sen, 1967). This assurance is crucial for the production of any public good (Runge, 1984).

"Moreover, a public good will be produced only if there is agreement on the distribution of its benefits. To date, economic theory can only predict the range of outcomes of negotiations over the benefits of such agreements in principle, which is usually illustrated using Edgeworth diagrams. Recent advances in economic theory, however, may help to further narrow the range of distributions that is acceptable to the parties involved (e.g., Baumol, 1982)."

The authors are, respectively, faculty members in the Department of Agricultural and Applied Economics of the University of Minnesota and the Department of Economics at the University of Northern Colorado.

von Witzke, Harald, and Marie L Livingston, *Public Choice in International Pollution*. Staff Paper P90-15, Department of Agricultural & Applied Economics. St. Paul, University of Minnesota, 1990. 23 pp.

Available at no charge from:
Waite Library
232 Classroom-Office Building
1994 Buford Avenue
St. Paul, Minnesota 55108
USA
Telephone: (612) 625-1705
FAX: (612)625-6245

Bottom-Set Longlines

A new *Manual on Fishing with Bottom-Set Longlines* has been "published by the Regional Office (of the FAO), for the Caribbean Technical Cooperation Network in Artisanal Fisheries and Aquaculture, in response to the interest demonstrated and the requests received for training in this fishing technique by some member countries of the Network. This Network, which is based on the principle of Technical Cooperation Among Developing Countries, is integrated by the English-speaking Caribbean countries and Suriname.

"*Fishing with Bottom-Set Longlines* is intended to be a clear and simple guide to fishermen and fisheries extension officers in the use of this simple fishing technique. It is based on years of working experience and creativity of Cuban fishermen. In 1981, this technique was successfully utilized in the training of Grenadian fishermen, who have not adopted and improved this method of longlining. It is well suited for the exploitation of the complex multispecies coral reef fish of the Caribbean islands, provided that appropriate

sizes of hooks, kinds of baits and operating depths are selected in order to catch mainly mature fish."

A Spanish edition of the manual will be published at a later date. A list of other FAO Latin American Regional Office publications is included at the end of the manual. The manual was written by José García Rodríguez of the Centra de Investigaciones Pesqueras in Cuba. Victoria Cué and Alina Alvarez did the illustrations and Bisessar Chakalall, FAO Regional Fisheries Officer acted as editor.

FAO, *Manual on Fishing with Bottom-Set Longlines*. Santiago Chile, FAO, 1989. 39 pp., no charge stated.

Available from:

Food and Agriculture Organization
Regional Office for Latin America and the Caribbean
P.O. Box 10095
Santiago
CHILE
Telephone: 228-8056
Cable: FOODAGRI, SANTIAGO
Telex: 340279 FAOCHI CK
Fax: 484312

Wheat-Displaced Pastoralists in Tanzania

A short paper, available from the International Institute for Environment and Development, evaluates the effects of the Tanzania-Canada Wheat Programme (TCWP) on the Barabaig pastoralists who inhabited the area in which wheat production efforts were sited. The TCWP has been very successful in increasing Tanzania's domestic food production, but it involved the removal of the Barabaig from 40,000 hectares of their best grazing land. This displacement undermined the rotational grazing system being used. In addition, there have been problems of soil erosion and siltation. Other environmental and social impacts are also becoming apparent. The study ends with the following conclusions.

The simple transfer of wheat production technology to plains of Tanzania has produced unforeseen environmental and social costs. There are lessons here that can be learned for this and future projects. In particular, negative impacts can be lessened if the following conditions are met:

1. Facilitate participation of local people in project formulation.
2. Take into account the local objectives and needs together with national goals.
3. Consider local capacity, skills and knowledge before introducing foreign and potentially dependency-forming technologies.
4. Include environmental and social aspects as well as economic criteria in the project evaluation.
5. Make provisions for regular monitoring of project impacts and set aside the means to make the appropriate adjustment."

Network member Charles Lane is a consultant to the Drylands Programme of NED while Jules Pretty is Associate Director of IIED's Sustainable Agriculture Programme.

Lane, Charles & Jules N. Pretty, *Displaced Pastoralists and Transferred Wheat Technology in Tanzania*. London, IIED, 1990. 20 pp. L1.50

Available from:

International Institute for Environment and Development
3 Endsleigh Street
London WC1H 0DD
UNITED KINGDOM
Telephone: 01-388-2117
Fax: 01-388-2826
Telex: 261681 EASCAN G

User Groups in Afforestation

A new World Bank Discussion paper, written by Network member Michael Cernea while on leave at Harvard, "contains a discussion of policy options and operational strategies for improving social forestry programs.

The analysis of the types of social forestry approaches called 'community' forestry or 'village' woodlots reveals that many forestry programs intended genuinely to be participatory are formulated in fuzzy terms, are not designed around well identified social actors, and neglect to ensure clear benefit distribution arrangements and incentives. Their confused sociological conceptualization and lack of sound social engineering renders the investments in such programs much less effective than they could be.

"Participatory social forestry strategies must aim at engaging the rural users of fuelwood into organized activities for producing and managing forests. The author argues that the profound behavioral change to be elicited on a gigantic mass scale among farmers through social forestry strategies is an evolutionary shift from simple foraging and gathering fuelwood in naturally grown forests to cultivating trees for fuelwood. Trees and forests are to be systematically produced.

"Part one of the study discusses the general social prerequisites for reforestation programs. It focuses on land tenure variables in forestry, particularly under regimes of common property over land. A historical analysis is undertaken of the process of privatization of the commons in Azad Kashmir, which has unfolded in three stages: (a) informal partitioning, (b) incremental appropriation, and (c) formal privatization. This analysis reveals why the attempt of a World Bank-financed community forestry project to stimulate farmers' tree-planting behavior did not succeed.

"Part two of the study (sections D, E, F, and G) broadens the analysis from communities, as one type of group, to several other types of social groups and units of social organization. The author argues that

each development strategy must be formulated around and clearly identified social actor, interested in its outcome and capable to carry it out, but not each kind of group is suitable for each and all development actions. The role of groups as purposive social actors in forestry development is examined. The advantages of group actions are defined, together with the difficulties and transaction costs that group establishment encounters, and the structural constraints that may undermine the effectiveness of certain types of groups. In this light, the paper further analyzes the rise and fall of interest in "community woodlot" schemes. The study concludes that the failures of the so-called 'community forestry' approaches are largely traceable to the misconceptions embedded in their design about communities' capacity for coordinated collective action in planting/managing trees. The author identifies seven basic sociological reasons for which communities as population clusters should not be regarded as willing and able corporate actors in afforestation programs.

"Based on this analysis, the author argues further, at a more general level, that social forestry strategies (a) must be conceived starting with the definition of the adequate unit(s) of social organization capable to translate one or another of such strategies into practice; (b) must ensure a match between the silvicultural technologies they promote and the social groups they aim to involve; and (c) must carry out a certain amount of social engineering (group formation and maintenance, establishing incentives and penalties, setting up authority arrangements and communication channels, benefit distribution, etc.).

"Further, the author discusses and recommends options to replace the elusive and diffuse 'community' approaches with two basic strategies for social forestry: family-centered strategies or group-centered strategies; the later should rely on alternative units of social organization, larger than the family. Public investments for afforestation could and should be made through both strategies, in adequate forms for each, and both strategies are apt to complement the public investments by mobilizing the private investments of the actors themselves. The author argues that the ineffectiveness of the community as one kind of group actor for forestry activities does not mean the demise of all types of groups as social actors in forestry development.

"An array of alternative potential collective actors (groups) is examined further, such as: farmers' groups for forestry, associations of landless tree growers, age groups, women's groups, watershed based forestry, etc. Evidence from many social forestry projects is examined to assess the results of family-centered or group centered approaches. The study concludes that such alternative group structures need not all pre-date the project: while those already in existence need to be strengthened, other group structures can be

created anew through the very development programs that call for collective action."

Cernea, Michael M., *User groups as Producers in Participatory Afforestation Strategies* (World Bank Discussion Paper No. 70). Washington, World Bank, 1989. 80 pp., price not stated.

Available from:

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The World Bank
1818 H Street N.W.
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Institutional Origins of Deforestation

The authors of *The Institutional Origins of Deforestation in Latin America* summarize their paper in the following extract from their introduction:

"Concern over the impacts of tropical deforestation in Africa, Asia, and Latin America has begun to stimulate analysis of national policies conditioning human interaction with natural environments in the developing world. World Bank economists have found that subsidies and tax breaks encourage land clearing in the Brazilian Amazon (Binswanger, 1989; Mahar, 1989). In addition, the argument is made that rural development policies pursued in a number of countries displace the rural poor, who tend to resettle in environmentally fragile hinterlands (Blaikie, 1985). To date, however, investigation of the social context of deforestation has not included much analysis of the tenurial incentives at work along expanding agricultural frontiers. This is a serious omission since, as Bromley and Cernea (1989) point out, tangible environmental problems in developing countries are often a manifestation of underlying institutional crisis.

"This paper addresses that crisis, tropical deforestation in Ecuador serving as a case study. To begin, the tenure regime facing those who live in or use tree-covered land in that country is described. Next, four specific institutional incentives for deforestation in Ecuador and other Latin American countries are examined. First, the waste and misuse of forest resources is, in part, a classic open access problem. Second, stipulating that deforestation is a prerequisite for land tenure sets in motion a cycle of excessive land clearing and erosive farming. Third, bureaucratically induced tenure insecurity further diminishes private incentives to conserve natural resources. Fourth, formal property law in Latin America induces the demise of indigenous common property regimes, which have long provided a framework for sustainable agriculture and forest conservation.

"Based on an examination of these four institutional incentives, we conclude this paper with a discussion of policy reforms needed to ensure the conservation of Latin America's tropical forests."

The authors conclude: "Institutional reform is always a politically charged undertaking. Ideologues of the right, who have supreme confidence in the workings of the marketplace, argue that all natural resources should be divided among private holdings, the owners of which can be expected to develop their properties efficiently. They distrust any deviation from a perfectly comprehensive regime of private tenure, expecting that a tragedy of the commons will arise wherever a resource is not privately owned. At the same time, ideologues of the left doubt that market exchange of private interests in natural resources can ever result in their being used wisely. Only government, they reason, is capable of developing resources efficiently."

"Neither perspective should be neglected. Most societies are very comfortable with the idea of dividing agricultural land, for example, among private holdings. Provided nonpoint pollution associated with agricultural production does not result in major downstream costs, there is not strong reason for government to interfere in private decisions regarding the use, management, or exchange of agricultural holdings. By contrast, some resources (e.g., the air we breathe) cannot be divided among private holdings. Government must take primary responsibility for the conservation of such resources."

"Of course, the dogmatic right is loathe to acknowledge instances in which tenurial arrangements favored by the left are unsuitable. Similarly, it is difficult to convince the rigid left that decisions regarding the use and management of many resources are best left to individual property owners heeding price signals in unregulated, competitive markets. Furthermore, both extremes share an ideological blindspot. As Hayami (1988) points out, neither the left nor the right has been prepared to admit the value of 'intermediate' tenurial arrangements: the institutions communities around the world have long used to deal with 'local externalities.'

"Local externalities are a universal feature of agriculture and natural resource development. For example, one farmer's water use is bound to have a direct effect on the welfare of his neighbors just as his welfare is greatly affected by their water use. Economists are only now beginning to recognize that game theory and other models can be used to explain why an individual agent facing such a situation finds that his or her personal welfare is enhanced by voluntarily cooperating in collective institutional arrangements (e.g., a village-level water rationing scheme) developed to address local externality problems (Schelling, 1973; Axelrod, 1984).

"As a consequence of growing interest in such arrangements, however, the 'menu' of tenurial solutions to third world environmental problems is

being expanded. It has always included the policy prescriptions of the right (i.e., strengthening or establishing private property rights) as well as those of the left (i.e., increasing public sector control of resources). Intermediate approaches (i.e., reinforcing the institutions communities have long used to resolve local externality problems) are now generally accepted as being worthy of consideration as well.

"More than anything else, applying the menu of tenurial solutions to resource degradation problems requires hard-headed economic objectivity. That is, all costs and advantages of different tenurial approaches to any particular environmental issue must be carefully assessed. For example, before deciding to draw on the strengths of a regime of private property rights, the costs of establishing and administering such a regime, which can be considerable (Runge, 1986), need to be investigated. Similarly, heavy reliance on community-level arrangements is a suitable approach to environmental policy only when local externalities are truly important. Finally, even when the impacts of resource degradation are broadly distributed, government action is called for only if expected improvements in environmental quality compare favorably to the costs of that action."

Southgate, Douglas & C. Ford Runge, *The Institutional Origins of Deforestation in Latin America*. Staff Paper P90-5, Department of Agricultural & Applied Economics. St. Paul, University of Minnesota, 1990. 22 pp.

Available at no charge from:

Waite Library
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1994 Buford Avenue
St. Paul, Minnesota 55108
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Telephone: (612) 625-1705
FAX: (612) 625-6245

Pastoral Development in Africa

Member Jeremy Swift, with the Institute of Development Studies at the University of Sussex, forwarded a paper he did for FAO in 1988 which should interest many people in the network. One major section of the paper examines local community organizations in pastoral areas while another focuses on common property resource management in African pastoral economies. The summary follows.

"This study reviews the most important current social science issues in the rehabilitation and development of pastoral economies with special emphasis on the dry belt of Africa. These issues are:

1. The need for new pastoral development policies which focus mainly on poverty-related issues. This would include special emphasis on policies to improve self-reliance and self-management by local communities, and the better integration of the

pastoral sector into the national economy and polity.

2. The creation of organizational structures for development at the local community level, based on traditional social and economic institutions. Or alternatively, new structures may be required, although these almost certainly would be based on small existing kin and economic groupings.
3. The need to clarify and strengthen pastoral land tenure systems. In particular, this should include (i) broadening the concept of tenure to incorporate traditional rules, (ii) decentralizing decision-making about access rights, (iii) defining groups of collective rights holders, (iv) allowing reciprocal access agreements, (v) protecting the tenure rights of poor people and women, (vi) preserving flexibility, (vii) providing better enforcement mechanisms, and (viii) better defining the role of government services in respect of tenure.
4. New types of financial institutions, to provide banking, credit and insurance for the pastoral sector, generate cash to cover recurrent costs of pastoral development, and mobilize rural, especially pastoral, savings for investment in pastoral economic development.
5. The need for greater food security in pastoral economies. The inevitability of drought should be considered in sound development planning.
6. Improving productivity by involving herders in researching technical innovations, and using their own scientific knowledge as a basis for such innovations.
7. Inadequate services. New approaches are needed to design services appropriate for scattered and mobile people."

The report includes an extensive list of references, and a 14 page report on an informal seminar on socio-economic aspects of pastoral development held at FAO headquarters in Rome in 1987.

Swift, Jeremy, *Major Issues in Pastoral Development with Special Emphasis on Selected African Countries*. Rome, FAO, 1988. Approximately 82 pp., no price stated.

Available from:

Economic & Social Division
Food and Agriculture Organization
Via delle Terme de Caracalla
00100, Rome
ITALY

FAO Forestry Studies

Two interesting case studies of community forestry efforts in Asia are available from the FAO Regional Forestry Officer in Bangkok. Brief excerpts from the forwards describe the two reports.

"Great interest, both in India and elsewhere, has been shown in the Gujarat forestry experience involving local participation."

"The case studies presented in this document were carried out by Dr. Shobhita Jain under the direction of M. Hoskins. In doing the studies, Dr. Jain has analyzed some of the questions raised by previous reports through in depth case studies of various social groups in different communities and involved in contrasting forestry schemes. She first places each case study in relation to the market economy. Her findings and insights shed light on the complexities of successful farm forestry and on the danger of generalizing, especially on such issues as trees replacing food crops or conflicts of goals between the forest service and participating farmers.

"The success she describes of large-scale farmers includes current efforts to diversify species for a broader market. Small-scale farmers, on the other hand, are found to be in need of support services such as market information and assistance in the organization of buying and selling cooperatives.

"The success seen in the tribal cooperative movement requires support of NGO and government services. Dr. Jain also raises questions of self help and continuity, in situations in which large-scale outside support is used to produce change."

FAO, *Case Studies of Farm Forestry and Wasteland Development in Gujarat, India*. Bangkok, FAO, 1988. 62 pp.

Forestland for the People: A Forest Village Project in Northeast Thailand is "one of a series of case studies of FAO-assisted community forestry projects. The series forms part of FAO's Forestry for Local Community Development (FLCD) Programme."

"These case studies are designed to make available information about successful projects or programmes, through which rural people have developed forest resources to tackle local problems and meet local needs. They are intended to help identify the factors at individual, community and national levels which made these efforts a success and particularly those elements which might have an application under other socio-ecological conditions.

"The case study is based on the work of Jacques Amyot of Chulalongkorn University... Dr. Amyot was assisted by Sompecht Mungkorndin of Kasetsart University.."

FAO, *Forestland for the People: A Forest Village Project in Northeast Thailand*. Bangkok, FAO, 1988. 84 pp.

Two documents relating forestry to nutrition are also available. The first is a reference manual on *Forestry and Nutrition*. It was put together by an informal working group consisting of members of FAO's Forestry Department together with members of the FAO Nutrition Division. The objective was "to assist member countries to more fully understand the

dynamics of the relationship between forestry, food security and nutrition. This reference manual is the first of several documents to be developed and jointly backstopped by this group. It was commissioned with the idea that to better understand how forestry projects could further food security and promote better nutrition, more would have to be known about the research already undertaken."

"This document contains literature from a variety of relevant disciplines and includes material which may be useful for selecting specific forestry activities to strengthen food security."

Contents:

- I. The contributions of forest and farm tree foods to household nutrition
- II. The role of forest foods in the diets of rural people
- III. The indirect contributions of forest resources to nutrition
- IV. The impacts of commercialization and changes in the forest resource base on the use of forest foods
- V. Conclusions
- VI. A literature overview
- VII. Guide to References
- VIII. Annotated Bibliography.

FAO, *Forestry and Nutrition: A Reference Manual*. Bangkok, FAO, 1989. 114 pp.

The second publication linking forestry and nutrition is entitled *Household Food Security and Forestry: An Analysis of Socio-Economic Issues*.

"It is only in recent years that the role of forestry in food security has been receiving attention as a result of the increasing realization of the dependence of rural people on trees and forests to meet important needs like food or income. As part of the Community Forestry Program of FAO's Forestry Department a number of studies were commissioned in order to uncover exiting information and to provide the basis for an objective understanding of the linkages between forestry and the food security of rural people, particularly the poor and other vulnerable groups such as women.

"This report has been prepared as a component of the overall study by the Oxford Forestry Institute to review socio-economic aspects of the role of forestry in food production and food security, with special reference to those related to the quality of life."

Contents:

- 1.0 Introduction
- 2.0 Forestry and Diets
- 3.0 Income and Employment, Forestry and Food Security
- 4.0 Tree Cultivation, The Household Economy and Food Security

References

FAO, *Household Food Security and Forestry: An Analysis of Socio-Economic Issues*. Rome, FAO, 1989. 147 pp.

These publications, funded in part by the Swedish Trust Fund: Forests, Trees and People, are available from:

Regional Forestry Officer
FAO Regional Office for Asia and the Pacific
Maliwan Mansion, Phra Atit Road
Bangkok, THAILAND

The publications listed above were produced under the auspices of FAO's Community Forestry Program. Network member Marilyn Hoskins at FAO headquarters in Rome can be contacted for additional information on these efforts and can provide a list of other publications related to the topic.

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Herders' Decisions in Arid Africa

Another FAO-SIDA publication in the Community Forestry Note series is entitled *Herders' decision-making in natural resources management in arid and semi-arid Africa*. An excerpt from the preface describes the document.

"This report fits into an 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 programmes. The approach of this report centers on a 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. A few pertinent examples from other areas are also provided.

"The main emphasis is placed on the use and management of natural resources, primarily vegetation, but also water and livestock. The majority of production systems in these arid zones in one way or another rely on livestock (ranging from settled agropastoralists to continuously mobile nomads). Thus, pastoral systems, defined as any production system that relies for more than 10% of its output on livestock, is the main focus of the report, but other production systems that rely on resources in their natural state, such as hunting, gathering, fishing and wood collecting, will also be considered.

"Most of the research done on LKMS has been on systems of cultivation (e.g. see Hans Carlier's recent bibliography 'Understanding Traditional Agriculture'). The studies on pastoral systems were often meant not as studies of LKMS per se, but answered the needs of the disciplines that engaged in the study.

Nevertheless, such studies have been instrumental in debunking many of the myths about these systems. However, no study has ever tried to pull them all together into a suitable structure for analysis. This literature review is intended to fill this gap. It is also intended as a necessary precursor to further work by FAO on LKMS, such as case studies, analytical studies, and training programs."

"Contents:

1. Introduction
2. Local Knowledge and Systems of Natural Resource Management
3. Traditional Knowledge
4. Viability of Local Knowledge and Systems
5. Past Experience with LKMS and Development Programmes
6. Policy implications for Social Forestry Development in Arid and Semi-Arid Lands of Africa
7. Summary of Issues and Conclusions"

Befitting its nature as a literature review, the report contains an extensive fourteen page list of references and a four page bibliography.

For information on acquiring this report, contact Marilyn Hoskins at the address in the article immediately above.

Niamir, Marayam, *Community Forestry: Herders' decision-making in natural resources management in arid and semi-arid Africa*. Rome, FAO, 1990. 126 pp. no price stated.

Agroforestry in Zimbabwe

Agroforestry Systems in Zimbabwe: Promoting Trees in Agriculture is a report on the National NGO Workshop on Agroforestry held in Nyanga, Zimbabwe in June of 1987. The organizer was CODEL (Coordination in Development), assisted by five other NGO's. "This booklet has been prepared in order to share the substantive information presented at the workshop with NGO's in other countries in Africa and other regions of the world."

While a portion of the booklet is devoted to introductory material, lists of participants, program, and so forth, the meat of the document consists of texts of the following four presentations:

- "Agroforestry Systems" - Newton Spicer
 - "Experiences from and Agroforestry Woodland Pilot Project" - Mathou Chakavanda and Ian Scones
 - "Experiences in Kenya and Malawi" - Dorothy Leteipan, Philip Ombidi and Raymond Chimsale
 - "Effects of Tree Diseases" - J.M. Gopo
- Vukasin, Helen L, *Agroforestry Systems in Zimbabwe: Promoting Trees in Agriculture*. New York, CODEL, 1989. pp.48

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New York, New York, 10115, U.S.A.

Energy and Open Access Forests

Harry R. Clarke and Ram M. Shrestha from La Trobe University and the Asian Institute of Technology have written two papers on the subject of "traditional energy programs and open-access forest resources." One is theoretical, the other delineates some policy implications. The brief abstracts for these documents follow.

"This paper analyzes implications of open access forestry for traditional energy programs in LDC's. The role of improved woodstoves, charcoal kilns, forest-access and biogas production is examined. A key finding is that, with sufficient elasticity in fuelwood demands, traditional energy programs may reduce long-run fuelwood supply stocks."

"Policies for managing a forest subject to open access exploitation are discussed from the viewpoint of encouraging greater efficiency in the use of fuelwoods. The usefulness of market and non-market policy options for managing forest resources is shown to depend on whether fuelwood collection is the major cause of deforestation or not and, if so, whether fuelwood collection procedures have a market valuation or not."

The following excerpts from the policy paper give a more complete sense of its contents. "Choice of policy instruments . . . requires initially an identification of the cause of over-exploitation." "(T)axes on fuelwood collection and subsidies for substitute fuels may not be effective energy policy instruments." "Subsidies for efficient stoves and charcoal kilns appear preferable to subsidies on substitute fuels..." "... however, subsidies... will, in the case of price-elastic fuel demands, reduce the long-run aggregate stock of forest..." "Community ownership of forests does not itself guarantee efficient forest management." "Private ownership alone cannot be relied on to provide effective management if forests provide public as well as private goods..."

Clarke, Harry R., and Ram M. Shrestha, *Traditional Energy Programs and the Theory of Open Access Forest Resources*. photocopy, 24 pp.

Clarke, Harry R., and Ram M. Shrestha, *Traditional Energy Programs with an Open Access Forest Resource: Policy Implications*. photocopy, 19 pp.

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Forest & Pasture Management in Nepal

Harihar Prasad Acharya, a new network member who has just completed a Ph.D. in anthropology at Cornell, forwarded the abstract of his dissertation as well as a proof of an article to appear in the current issue of *Development Anthropology Network*.

Both deal with community management of highland forest and pasture in Nepal. The dissertation abstract follows.

"This dissertation examines the complex, diverse, and dynamic processes of managing the use and availability of forest and pasture resources as conceptualized, practiced, adapted, and evaluated by Jirel people of highland Nepal over the last 200 years. For the research, I lived in a Jirel village for 18 months, observed and interviewed people in their own settings, collected historical materials, and conducted sample surveys and physical measurements when appropriate. By analyzing the impacts of Jirel symbol systems, social organization, household strategies, and external linkages on forest and pasture management, I conclude that Jirel have maintained a near balance between their needs for and the availability of wood and fodder resources. Shortage of labor during the rainy season, scarcity of fodder in the winter, and unequal distribution of resource ownership are three major constraints to Jirel management systems. Jirel try to cope with these constraints by redistributing access, costs, and risk in the community. Jirel reciprocity serves both self-interest and generosity, and sustains their relationships with fellow human beings, supernatural forces, and natural resources.

"Prevailing conditions, institutions, opportunities, and strategies help Jirel economize on the use of resources, meet essential needs, and protect the resource base simultaneously. Throughout history Jirel were granted considerable autonomy to use and protect forests and pastures in exchange for their services for the royal herds. Private titles, joint ownership, usufruct, and communal rights effectively regulate Jirel motivations, use patterns, social equity, protection methods, and sanction structures. Jirel plant trees, harvest from annual increments, allow resources time to repair, and utilize substitutes. Most Jirel live in ground-floor huts; burn twigs, dead wood, and recycled materials for fuel; feed leafy growths and crop residue to their livestock; practice rotational and selective methods of harvesting; and apply restriction signs to protect resources. Recent off-farm employment opportunities have effectively reduced the need for clearing forests and pastures for food production."

Acharya, Harihar P., *Processes of Forest and Pasture Management in a Jirel Community of Highland Nepal*. Ph.D. dissertation in Anthropology, Cornell University, 1990.

Acharya examines the policy implications of very complex resource tenure systems in his article. The conclusions of the article follow.

"The concepts of 'resources,' 'rights,' and 'management' do not carry universally applicable meanings, and therefore should be examined in reference to the particular times, places, and peoples they are associated with. Both researchers and policy-makers should be aware of the complexity, diversity, and temporality of the resource regimes existing in human societies.

"In Jiri the complex property rights to wood and fodder cannot be well comprehended by lumping them grossly as 'forest' and 'pastures,' or as 'communal,' 'private,' or 'state property.' Not only are additional forms of ownership, such as joint and cooperative, widespread, but in each of these instances rights differ according to particular resource, kinship, residence, purpose, previous use, and season.

"These complex property rights affect management practices in various ways. Forest and pasture management should be viewed in terms of the net effects of how people manage their needs as well as the availability of wood and fodder resources (Blaikie and Brookfield 1987; Acharya 1984, 1990; Roe and Fortmann 1982; Thompson and Warburton 1985a, 1985b). Available literature on local management of natural forests and pastures in Nepal shows that management of use is a widespread strategy practiced by upland farmers (Acharya 1984, 1990; Bajracharya 1983; Fox 1983). The evidence from Jiri suggests that selective use is encouraged by the prevailing differentiated rights. Open access to twigs and limited access to fallen and dead wood allow the Jirel people to meet their fuelwood needs without disturbing the natural process of forest regeneration. With respect to fodder: seasonal rights, joint ownership, and the concept of shares enable the Jirel people to rotate their pastures and allow these resource bases time to repair themselves. In addition to encouraging conservative use patterns, Jirel property arrangements facilitate direct protection of resources through symbolic technology, mutual care and sanctions, and mechanisms for redistribution.

"The second major conclusion of this research refers to the diversity of and linkages between resource regimes, which researchers and policy-makers should not overlook. We have seen that property arrangements and management practices differ even among adjacent villages located within less than an hour's walk. The effectiveness of forest and pasture management in any one village depends, in part, upon what is happening in the neighborhood (Acharya 1984). The cooperative ownership of forest and pastures in Dhunge and Navok, and the communal ownership of these resources in Yellung have in effect reduced the internal and external pressures on the wood and fodder resources of Ratmate, where ownership is individual or joint. In contrast, the market people at Linkan, with no forests of their own, depend

on collecting or buying fuelwood from neighboring localities, including Ratmate. Because they are located on the foothill of Ratmate and on the bank of the Jiri river, Linkan people are also vulnerable to the runoff and landslides that occur uphill. It is understandable, then, why the members of the business community at Linkan contributed free labor to plant trees in Ratmate.

"Finally, this study shows that property arrangements and management regimes are dynamic and subject to change through both external and internal processes. Jirel ownership systems have been altered at different times through government policies. It was government policy that granted the Jirel communal access to forests and pastures in exchange for services to the royal herds. Change from communal to private ownership also occurred because of governmental intervention. Incentives for establishing plantations have been changed by the government rules regarding who is entitled to own the plantations. Another external process affecting the extent and composition of resource demands has been the opening of a road connecting Jiri with Kathmandu, which has boosted tourism and expanded the number of commercial enterprises.

"Internally, the Jirel have developed various usufruct rights reducing the adverse impacts of the inequalities created by the interactions of demography, inheritance, and household cycles within their own society. They have repeatedly modified their property arrangements and resource use patterns in response

to both internal and external pressures. The substantial autonomy the Jirel have enjoyed in managing their forests and pastures, and the flexible systems of property and management they have practiced, have enabled them to meet their resource needs without depleting the resource base. Allowing still greater opportunities for local management and maintaining more flexibility in policies to address diverse and changing situations may enable the Nepalese government and donor agencies to alleviate poverty and maintain the physical environment at the same time."

Acharya, Harihar, "Jirel Property Arrangements and the Management of Forest and Pasture Resources in Highland Nepal", *Development Anthropology Network*, Fall, 1989, pp. 36-54.

Available from:

Development Anthropology Network
Institute for Development Anthropology
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Dr. Acharya notes that he is currently available for either long or short-term appointments and can be reached in care of:

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Notes From The Editor's Desk

International Association Details

Many of you have already joined the new International Association and remitted your dues. The association has over 100 paid up members and some \$1400 in its bank account. Preparations for the first annual association meeting, to be held at Duke University, September 27-30, are going well and the organizers report that there appears to be strong interest on the part of potential presenters and panel organizers. If you get the *Digest* or work with common property but have not yet joined the Association, please consider doing so. The dues are US\$20.00 for individuals with incomes above US\$15,000 per year and US\$5.00 for anyone with income below that level. Please make checks and money orders payable to "International Association for the Study of Common Property" or "IASCP". Please do not make them payable to the University of Minnesota or to the *Common Property Resource Digest*. They can be sent to:

IASCP
332 C.O.B.
1994 Buford Ave
St. Paul, Minnesota, 55108, USA

Network Funding Update

In the last issue, we informed you of the problems we face in securing funds for continued operation of the Network and publication of the *Digest*. Many of you responded to our request for advice and assistance. We appreciate the very affirmative letters of support which some of you sent. Our efforts to secure additional grants from foundations continue.

The next issue will be printed and mailed in June. We hope to have good news about funding at that time. If we are not successful, we have the resources for production of the September issue, but will have to close down operations after that point.

If you have not responded to our appeal in the January issue, but would like to give us useful advice or write in support, please do so, these efforts are still timely.